University of the Witwatersrand
School of Literature
and Language Studies

Research Report:
A Case Study of the Digital Literacy Practices in a Grade 10 English Classroom at a Private School

For the Degree of Masters in Applied English Language Studies by Coursework and Research Report

Submitted by Joanne Skudowitz

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DECLARATION

I, Joanne Skudowitz, declare that:

This Research Report entitled 'A Case Study of the Digital Literacy Practices in a Grade 10 English Classroom at a Private School' and submitted for the Degree of Masters in Applied English Language Studies by Coursework and Research Report, is my own work.

All sources used or quoted have been indicated by means of complete references and footnotes.

This research report contains no material that has been submitted previously, in whole or part, for the award of any other academic degree or diploma.

Signature Date

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ABSTRACT

This study aimed to investigate the extent to which a class of grade 10 students at a private, co-educational school in Johannesburg, South Africa, are digitally literate and how they engage with digital technology both inside and outside the classroom. The study also aimed to explore some implications of these students' digital literacy practices for the teaching of English at the school. Data were collected from interviews and from questionnaires completed by the students. Students also wrote digital literacy histories.

The main finding is that the participants in the study are digitally literate and engage with digital technology on a day-to-day basis. They are the lap generation (Tapscott, 1998) as they are lapping their parents and teachers with regard to their knowledge and use of digital technology. This use occurs primarily in their out-of-school, or social, environments and is not being drawn on substantively in the classroom, even in a well-resourced school.

GLOSSARY OF TERMS

TERM	DEFINITION
blog	(Web log) An online diary; a personal chronological log of thoughts published on a Web page.
cellular telephone	A mobile radiotelephone for use in an area divided into small sections (cells), each with its own short-range transmitter/receiver.
chat room	a site on the internet where a number of users can communicate (typically one dedicated to a particular topic)
digital camera	A camera that encodes an image digitally and stores it for later reproduction
e-learning	(Electronic learning) The process of learning online, especially via the Internet and email
Email	A system for sending and receiving messages electronically over a computer network, as between personal computers.
Facebook	Facebook is a social networking website that is available to any email address user. The site is free to use and links users through networks such as schools, places of employment or geographic regions. Users of Facebook create profiles that often contain photos and lists of personal interests, exchange private or public messages, and join groups of friends.
Hypertexts	A computer-based text retrieval system that enables a user to access particular locations in web pages or other electronic documents by clicking on links within specific web pages or documents
Information Age	The period beginning around 1970 and noted for the abundant publication, consumption, and manipulation of information, especially by computers and computer networks.
Internet	An interconnected system of networks that connects computers around the world.
iPod	A leading brand of MP3 player made by 'Apple'
PDA	Personal digital assistants (PDAs) are handheld computers which have a range of uses from accessing the Internet to recording personal notes.
PSP	(Playstation Portable) A portable games console, made by the leading family of game consoles, Sony.
MP3	A file (MPEG) used especially for digitally transmitting music over the Internet.
MSN	MSN (short for Microsoft Network) is a collection of Internet services including search engines and online messenger services.
MXIT	MXit (pronounced "mix it") is a mobile instant messaging application developed in South Africa which allows users of cellular telephones to send and receive text messages to and from personal computers that are connected to the Internet and other phones running MXit. These messages are sent and received via the mobile Internet, rather than with standard sms technology and are much cheaper to send than traditional SMS messages.
Skype	Skype is a peer-to-peer Internet telephony network which can be used to type messages or make telephone calls locally and abroad.
Webcam	(Web camera) A camera designed to take digital photographs and transmit them over the Internet or other network.
web page	A document on the World Wide Web, consisting of files and graphics, and often linked to other documents on the Web.
World Wide Web (WWW)	Computer network consisting of a collection of internet sites that offer text and graphics and sound and animation resources through hypertext.

Reference: www.wikipedia.org Last accessed 1 August 2007

CHAPTER 1:
AIMS AND RATIONALE OF THE STUDY

1. 1. Introduction

Literacy[1], a term with many and changing definitions, is no longer perceived to be simply about reading and writing. Literacy can be viewed as a social practice[2], a practice that contributes to identity formation and positioning in society. In an ever-changing society, young people no longer need to be merely literate, but rather they need to be multiliterate[3]. And being multiliterate involves being digitally literate too.

Digital Literacy[4] can be defined as the ability to access, use and understand information in its digital form (Warschauer, 2006). This includes being able to use computers and the Internet, cellular telephones, iPods*[5] and other such technological devices. In order to become digitally literate, one is not only required to have basic literacy skills, but also to be able to make and negotiate meaning in other ways. In order to be 'digitally literate' one therefore needs to be able to navigate the vast and nonlinear World Wide Web (WWW)*, engage in linking information through hypertexts* and access iPods (music players), PSPs* (playstation portables) and cellular phones (Warschauer, 2006).

[1, 2, 3, 4] These terms (literacy, literacy as a social practice, multiliteracy and digital literacy) will be explained and examined in some depth in Chapter 2 of this report.

[5] Please note that words and terms marked with an asterisk (*) are defined in the glossary on page xxx, after the table of contents

When referring to the term 'digital' I include in my definition of the term devices such as computers, iPods and MP3 players*, cellular telephones, web cams*, digital cameras*, CD and DVD players and television. Digital practices also include an understanding of the Internet and asynchronous, or non-real-time, practices such as email and weblogs and synchronous practices, or real-time communication, such as chat rooms*.

Digital literacy is also used to suggest how comfortable a person feels with using digital technology, and knowing how these devices function. According to Wikipedia contributors (2007), cited in their free online encyclopaedia, having a digitally literate population is an indicator of a developed country. Another important aspect of digital literacy is the ability to self-teach. What this means is that people who are digitally literate have the ability to use their basic knowledge to learn new phenomena as these are encountered (Wikipedia contributors, 2007).

Young people are the foremost drivers of technological change in society. In a school such as Creative College, in which the research is situated, it is the norm rather than the exception for these individuals to have cell phones, PSPs (playstation portables), iPods and laptops. These students are 'growing up digital' (Tapscott, 1998, in Czerniewicz and Hodgkinson-Williams 2005: ix).

These individuals function multimodally – no longer do they only operate with pen and paper but rather with the textual, the verbal, the visual, the oral and most certainly the digital. Kalantzis and Cope (2005) suggest that there has been a tendency over the millennia to move from an oral culture to a scribal culture and now to a culture dominated by visuals and electronics.

Kress and van Leeuwen (2001) suggest that contemporary texts such as *Power Point* presentations and Web pages are multimodal in the sense that they vary and mix a range of media (such as visuals, sounds and written text) within a single text. In other words they are converged media forms. Kress (2003) further explains that synaesthesia, where one sense is evoked when another is stimulated, takes place in multimodal environments. Thus, new meaning is made through multimodal texts because various senses (sound, sight etc) are stimulated synaesthetically.

The Department of Education (DoE) in South Africa specifies, in its White Paper on e-Education (2004), that by 2013 every South African learner should be able to use ICT 'confidently and creatively to help develop the skills and knowledge they need to achieve personal goals and to be full participants in the global community' (p. 17). According to this White Paper, information and communication technology (ICT) is central to the changes happening in our world and digital media have revolutionised the information society. The developments in ICT have noticeably changed opportunities in teaching and learning and there are possibilities to access educational resources that go beyond those traditionally available.

The White Paper states that a telecommunication infrastructure available for learning and teaching is slowly increasing and many schools are making use of ICT. The possibilities of using ICT in schools are vast where 'students and teachers can engage in new ways of information selection, gathering, sorting and analysis' (White Paper on e-Education, 2004: 3). It sets out the South African Government's response to a new information and communications technology environment in education. The government aims to ensure that all South African schools have access to a wide variety of diverse, high-quality ICT services and to guarantee that all students and teachers will benefit from these services.

In 2003, however, the Department of Education reported that there are still over 19 000 schools without computers available for teaching and learning (Czerniewicz and Hodgkinson-Williams 2005). This figure highlights the digital divide in South Africa between schools such as Creative College, where access to digital technology is relatively extensive, and the majority of schools in South Africa, which have little to no access to digital technology.

1.2. Research aims

The aim of this study is to investigate both the access to digital technology and the digital literacy practices of a group of students at a private school in Johannesburg. In particular, it sets out to understand the digital practices that these students use both in and outside of their school environment.

Some implications of the findings for teaching English in the school will also be considered.

1.3. Research questions

The research is framed by the following questions:

1. **What access does a Grade 10 class at a private school in Johannesburg have to digital technology, and how proficient do these students consider themselves in its use?**
2. **What are the in- and out-of-school digital literacy practices of the students?**
3. **What are the implications of these findings for English teaching in this school?**

1.4. Rationale

I have been a teacher of secondary school students since 2002. In this time I have noticed the increasing prominence of digital technology in these students' lives. Last year, I gave a Grade 10 class an essay to write on William Shakespeare's *Romeo and Juliet*. I gave them the essay topic during a lesson and explained what they were expected to do. I told them that they could do research for the essay at home and on the Internet and that they could bring their research into class the following day when they would write their essays. Then, once I had finished explaining what was expected of them, I gave them the last ten minutes of the lesson to start planning their essays. A few minutes later I noticed that one of the boys in the class had his cellular telephone out and was using it, I believed, to send an sms. I reprimanded him and told him to hand his phone to me as he was meant to be doing work and not playing with his cellular telephone or sending smses. He promptly responded that he was doing work as he was doing research on *Romeo and Juliet*, which I had just told him he was allowed to do. Not believing him, I told him to bring me his phone and when I looked at the screen, sure enough there was an Internet site with information on the play.

This incident exemplified, for me, the extent to which digital technology has infiltrated these young people's lives, in ways that their teachers are unlikely to have imagined. It was for this reason that I chose to focus my research on the effects of digital technology[6] on adolescents, and more specifically to investigate their digital literacy practices in order reflect on how teachers like myself should use the new technologies in our classrooms.

[6] Digital technology refers to technology involving computing and electronics such as cellular telephones or personal computers.

1.5. Overview of the chapters

This chapter has addressed the context of the research and introduced the research aims, questions and rationale for the research. In Chapter 2, I present the literature review and theoretical framework which situates the research. Chapter 3 outlines the research design. In Chapters 4 and 5, I present and analyse the data collected. Chapter 4 focuses on describing and analysing the research participants' access to, knowledge of and confidence in using digital technology, and their in- and out-of-school practices, in response to my first research question. Chapter 5 provides a response to my second research question, 'What are the in- and out-of-school digital literacy practices of a group of Grade 10 students at a private school in Johannesburg?'

In Chapter 6 I address the third research question, 'What are the implications of these findings for English teaching in this school?', and present the conclusions from the study.

I now move to Chapter 2 which, as indicated above, provides the literature review and theoretical frame for the study.

CHAPTER 2:
LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1. Introduction

In attempting to investigate digital literacy among today's youth, I found that I needed to draw on literature in diverse but interrelated fields: digital literacy, New Literacy Studies, multiliteracies and literacy as social practice.

2.1.2. Literacy and digital literacy

Traditionally, literacy has been defined as the basic ability to read and write, as would be expected in a formalised educational setting such as in school[7]. It is what is expected of a learner in a school environment to demonstrate academic ability (Gilster, 1997). Warschauer (2006) similarly observes that 'literacy is commonly thought of as the ability to decode and encode words on a page' (Warschauer, 2006:2).

The challenge provided by traditional definitions of literacy, according to Warschauer (2006) is that they do not recognise the contexts in which literacy occurs. Furthermore, they place heavy emphasis on the mastery of phonics, which is usually acquired in early school years. The New London Group (1996:66), in the same way, describe 'mere literacies' as those that are centred on language only. Tapscott (1998) suggests that literacy has moved beyond mere

[7] Street's (2003) Autonomous and Ideological models of literacy are discussed further on in this chapter, under New Literacy Studies.

reading and writing and into the realm of real life communication contexts and technologies. Warschauer (2006), too, explains that literacy involves a wide variety of skills and is strongly dependent on the context in which it occurs. Thus literacy, according to these new definitions, is not a singular but rather a plural concept involving many different variables and must be viewed as something that will teach 'students basics and help[ing] them master the exciting new ways of communicating that are relevant to twenty-first-century life' (Warschauer, 2006: 2).

Because of the rapid growth in technology, we now live in a digital age, where computers and other forms of digital technology dominate in many of our lives. Digital technology is therefore providing a new context in which we interact and learn. New concepts such as 'digital literacy', multiliteracies' and 'new literacies' have emerged and it is thus necessary to extend definitions of literacy to include these concepts.

Digital literacy is the ability to access, use and understand information in its digital form – that is, through the form of a computer (Gilster, 1997) and other digital media. Shetzer and Warschauer (2000: 171) use the term 'electronic literacies' to refer to new modes of communication in which meaning is made from interpreting and using texts in 'computer-based digital realms' (Warschauer, 2006: 4). In order to become digitally literate, one is not only required to have basic literacy skills, but also to be able to make and negotiate meaning in other ways. In order to be 'digitally literate' one needs to be able to navigate the vast and nonlinear World Wide Web, engage in linking information through hypertexts and multimedia and distinguish reliable information from the infinite amount of unreliable information(Gilster, 1997).

Warschauer (2006) argues that digital literacy[8] consists of four sets of related literacies: computer literacy, information literacy, multimedia literacy and computer-mediated communication literacy. Computer literacy refers to the general ability to use and find one's way around a computer with ease. Information literacy refers to the ability to establish what information one needs to acquire from a computer, access this relevant information successfully, assess information and determine whether or not it comes from a reliable source, and then use this information effectively, morally and lawfully. Multimedia literacy refers to the ability to use and make information using an assortment of resources including texts, images and sounds. Finally, computer-mediated communication literacy refers to the analytical and textual skills needed to communicate successfully via online media. Thus digital literacy is a comprehensive field that encompasses various other literacies and has developed as a result of the many technological changes that have occurred in recent years.

Thus, literacy in its electronic and digital form is not merely about printed text – it involves images, sounds and actions or multimedia. McCorduck (1994) believes that until fairly recently, printed texts have dominated our literate lives but the advent of the computer has changed this. When using the computer, for instance, we take advantage of 'all our biological capacities to learn and to know, and to seek and find new knowledge' (McCorduck, 1994:259). Using a computer is not just about using a new tool. It is about changing literacy practices to include new and multimodal ones, and with this change comes change in social behaviour.

[8] In order to avoid confusion I have used the term 'digital literacy' in this report to incorporate other definitions such as Warschauer's (2006) term 'electronic literacy'.

2.1.2. Digitally-minded students

Tapscott (1998) defines today's pre-school and school age students as digitally-minded. He describes them as students who naturally engage with new media and effortlessly use new forms of literacy such as instant messaging and email. Rather than learn by hearing and being taught, they want to learn by doing and experimenting. They integrate knowledge and technology with ease and this comes naturally to them.

Negroponte (1996) calls the recent digitisation of most aspects of modern life the 'change of atoms into bits and pixels'. He believes that the contemporary world is dominated by digital technology and that this change has had an effect on most people's lives. Those who have been most affected by this change are the generation born after 1980 – the N-Gen or Net Generation (Tapscott, 1998). These young people, according to Negroponte (1996), know only the digital world as it is one in which they have been raised. One of the main characteristics of this generation is that they want to learn by doing things and trying things rather than hearing about them or being taught about them (Tapscott, 1998).It is important to note, at this point, that these concepts (digitally-minded students and the N-Gen) most relate to developed countries and the situation might be different in developing countries. I include these concepts, however, in my research because of the context of the school in which the research is situated – a private, well-resourced school.

These digitally-minded students have particular expectations of a learning environment. They need to interact and connect with others and anticipate learning and interacting in groups, rather than on their own. This changing way of learning has led students to expect instant feedback, which according to

Andone, Dron, Pemberton and Boyne (2007: 42) has affected their attitudes to learning. To summarise, they contend:

> These students simply think differently and are becoming increasingly digital. They tend to use physical space differently from prior generations and they blur the boundaries between physical and cyber space and between mine, yours, ours and everyone's.

In their research on e-learning environments, where they studied the needs of the new generation of 'digitally-minded students' in the developed world Andone et al found that these students are so accustomed to having technology in their lives and their learning environments that the way in which they learn is different from that of previous generations.

Their study, which consisted of online surveys, focus groups, interviews and observations in Universities in Hungary, Finland, Romania and the United Kingdom, found that a common trait of these students was their need to have power over their digital environments. The environments in which these digital students function optimally include a combination of Internet and multiple media communication technologies which augment student-educator and student-student communication. Thus this study highlights the importance of multiliteracies, digital literacies and multimodality for today's students.

It is society's responsibility to ensure that these students have access to education and knowledge that are in line with the changes that have come with new technologies. Education systems need to ensure that these students are given new learning skills to suit the twenty-first century, and especially make use of e-learning in order to create a society of 'lifelong learners' (Holmes and

Gardner, 2006:51). The development of these lifelong learners relies on their access to increasingly more powerful computers and other forms of digital technology as well as the fact that information is far more accessible now than it ever was before. Today we have vast amounts of information 'at our very fingertips as the personal computer acts as a portal to the connected world' (Holmes and Gardner, 2006:52). Lifelong learning is enabled not only by access to technology and to vast quantities of information, but by the ability to interrogate this information.

These digitally-minded students are those on which this study focuses. Having described these students and provided brief definitions of literacy and digital literacy, I move now to digital literacy within the broader paradigms of New Literacy Studies and Multiliteracies.

2.2. New Literacy Studies (NLS)

According to Lankshear and Knobel (2003), the word 'new' connotes a change that has taken place in character, form, substance or practice. This is particularly noticeable in modern society, where technology, the media, communication and other such notions have major and rapid impacts on social practices.

2.2.1. New Literacy Studies and social contexts

New Literacy Studies (Heath, 1983; Street 1984; Gee, 1991; Barton, 1994) views literacy not as an isolated, autonomous practice, but rather as an integrated practice which draws on socio-cultural phenomena and other forms of literacy. Literacy today is embedded in people's social practices, in various forms, in their

everyday lives. It is influenced by a range of social, cultural and linguistic phenomena and acknowledges the role that the media and new forms of communication play in people's day-to-day lives (Hull and Schultz, 2003). Street (2003: 77) describes this approach to literacy as the 'ideological' model of literacy which offers a culturally sensitive view of literacy in varying contexts and differs from previous, 'autonomous' models of literacy which offer a narrower view on literacy and ignore many of its social and cultural variables.

New Literacy Studies does not restrict itself to perceiving literacy as a skill that can be taught in school. Because it occurs naturally in people's day-to-day lives, literacy is contextualised and varies from one social group to the next. As Gee (1996: 46) contends, literacy is not an 'asocial cognitive skill with little or nothing to do with human relationships'. He argues, rather, that literacy has everything to do with power, social identity and cultural differences and only makes sense when viewed within the social and cultural contexts in which they occur.

Street (1984), similarly argues that literacy practices are dependent on the social contexts in which they occur and are shaped by institutional ideologies and power structures within a society or institution. Literacy therefore has the ability to empower or disempower certain people or groups, depending on their social contexts and the power structures that surround them. The link between literacy practices and social context is demonstrated in Heath's (1983) *Ways with Words*. In her study she suggests that school-based literacy practices generally empower mainstream students who already have access to mainstream literacy practices, but can disempower students who have little or no access to these practices.

The study of literacy, according to Gee (1988) requires the study of the social and cultural contexts in which literacy is located. New technologies are expanding and being introduced into various communities such as schools. Therefore academic institutions, such as the school in which my research was conducted, should facilitate the use of new technologies to allow students to expand their literacy practices and keep up-to-date with societal advancements in these areas. One of the aims of this case study is to establish whether or not this is occurring in the research site.

New Literacies today include the use of digital technology and electronic media, which Lankshear and Knobel (1997) refer to as technological literacy. This new form of literacy includes new practices such as using hyperlinks[9], using a mouse to manipulate non-linear texts and ability to interpret a wide range of semiotic resources. New Literacy Studies (NLS) welcomes these new practices and shows the importance of what students bring from outside of the classroom into it. According to Lankshear and Knobel (2003), these new practices have changed the definitions of learning, knowing and using. Today, the lives of many youths are consumed by digital literacy, including the use of smses, emails, chat rooms, weblogs and WebPages[10]. These new literacies are referred to, according to Lankshear and Knobel (2003), as 'post typographic[11]' forms of textual practice. In my study, I examine the digital literacy (post typographic) practices of Grade 10 students in and outside the classroom and the implications of these practices for teaching and learning.

2.2.2. New Literary Studies in schools

[9] Refer to glossary of terms for a definition of this term.
[10] Refer to glossary of terms for a definition of these terms.
[11] The word typographic refers to something that is related to text and printing, therefore post typographic texts are those that have emerged after print-based texts in a new form and include new texts such as hyperlinks.

According to Lankshear and Knobel (2003), schools have identified these post typographic literacies as their main challenge in incorporating new literacies into their curricula and using these media for teaching and learning. One of the possible problems that arises is that of inclusion and exclusion. A realistic possibility is that many of the students in a classroom may not have access to these literacies outside of the classroom and there is thus the risk of marginalising these students if these literacies are introduced into classrooms.

One of the interests of researchers in the field of NLS is the relationship between schooled literacies and those learned and used outside of the classroom. Work on literacies in- and out-of-school has been undertaken by a number of researchers. Hull and Schultz, (2003) for example, researched this field in the United States of America and provide a specific example of youth uses of digital technologies and blogging. They argue that accounts of out-of-school literacy practices are most valuable since they inform our understanding of future literacy practices and pedagogies. These practices are not mere skills in using the different media but involve a completely new culture of peer-to-peer learning, knowledge creation and shared expertise. Hull and Schultz suggest that teachers need to be able to acknowledge, support and embrace students' in- and out-of-school practices and negotiate the boundaries between these practices.

Stein (2003) further highlights how different these settings are, and how both the school and out-of-school environments offer a range of different influences upon students. In-school influences include what is learned in formal lessons as well as informally from peers and experiences, whereas out-of-school influences may include one's social group, family and experiences online. This research project is concerned with the different in- and out-of-school literacy practices of the participants and what this means in terms of literacy, especially digital literacy.

As I have described above, one of the key arguments of NLS is that literacy is always situated within a broader context. Gee (1996) describes how a context is never static. Language, for example, exists within a changing context and in conjunction with interactions, symbols, value systems and ways of thinking along with many other contextual variables. As Gee (1996) contends, 'Contexts do not just exist … are rarely static or uniform [and are] actively created, sustained, negotiated, resisted and transformed…' (Gee, 1996: 8). Thus it was important to take into consideration the context (or contexts) of this research whilst analysing the data.

As I have indicated in this section, NLS acknowledges the significance of out-of-school literacy practices and argues that schools need to start drawing on these practices in order to enhance the learning process for students at school. Its proponents suggest that these different contexts need to be assimilated in order for schools and students to move forward and succeed in this dynamic and changing world.

2.3. Multiliteracies

Theories of multiliteracies have developed as a response to a very restricted view of literacy. Work in this field was initiated by a small group of people, in 1994, who have now become known as the New London Group. Multiliteracies foregrounds linguistic and cultural diversity in a rapidly changing world. The diverse cultural and national differences among members of the NLG brought into focus the need for a new theory of literacy in this changing world. The NLG argue that no singular, standard English exists in the world today – a world filled with cultural differences and ever-emerging forms of media and

communication. In their view this complexity needs to be addressed through new conceptualizations of literacy theories and practices (Cope and Kalantzis, 2000).

Like the NLS, theorists working in a Multiliteracies framework believe in an ideological, rather than an autonomous model of literacy but along with acknowledging the different socio-cultural contexts that are linked to literacy, they acknowledge the multiplicity of modes of communication, including textual, visual, aural, spatial and behavioural. They also highlight the importance of mass media, multimedia and new forms of media including electronic media in today's world. One of the key propositions of the group is that meaning, today, is made in a number of new and different ways. Furthermore, they suggest that people do not use only one mode of communication at a time and thus the notion of multimodality is important. With the new and various modes of communication that exist today, the way people use language has also changed (Kress, 2000).

One of the arguments that the New London Group makes is that language, and more specifically English, is splitting into multiple and very diverse Englishes. These Englishes are marked by differences in accent, origin, and style. As a result of this diversity, we are now required to communicate using multiple languages, multiple Englishes which vary according to socio-cultural context of use. The Multiliteracies project therefore argues that we need to be able to communicate multimodally as well as multilinguistically (Cope and Kalantzis, 2000). In the 'information age' it is believed that in order to be successful, one needs to master literacy in a number of different fields through a number of varying media forms. Kress (2000: 182) describes the revolution that has taken place over the last few decades:

> A revolution has taken place in the area of communication which forces us to rethink the social and semiotic landscape of Western 'developed' societies. The effect of this revolution has been to dislodge written language from the centrality which it has held, or which it has been ascribed to, in public communication.

Further, he argues very strongly for the need to embrace the change from print discourses in education to computer-mediated discourses.

Beavis (in Snyder, 1999) raises concerns regarding the dichotomy between current educational curriculum and students' life experiences in a fast-changing world. She describes the four new literacies cited in Lemke (1998), which are multimedia authoring skills, multimedia critical analysis, cyberspace exploration strategies, and cyberspace navigational skills and adds a fifth to this. This new literacy involves 'the capacity to negotiate and deconstruct visual and verbal images' (Beavis, 1998: 244) and focuses on being able to read and interact with images, which goes beyond critical analysis. She suggests that we need to 'nurture and challenge young people so that they can contribute actively to shaping the future as it evolves' (Beavis, 1998:253).

It is thus clear that literacy has gone beyond text and print literacy and now includes aural, digital and visual literacy. To find one's way around this new world of meaning requires new, multimodal literacies. The New London Group considers multiliteracies as much broader than basic print literacy and shows how Multiliteracies differ according to contexts and how they are constantly changing and being remade according to context and purpose. Thus multiliteracies address 'the multiplicity of communication channels and increasing cultural and linguistic diversity in the world today' (New London Group, 1996:7).

2.4. Literacy as a social practice

In order to complete a study on digital literacy it is important to understand what it means to be literate in the 21st century. As indicated above, Warschauer (1999) believes that being literate is not merely a matter of being able to read and write, but involves mastery of knowledge and skills that are seen as valuable in a particular context. Thus in order to be literate in this 21st century, where much of what happens in society is dictated by digital technology, it is vital to remain abreast of digital advancements. Warschauer too believes that there are other factors, such as social and cultural practices, that affect how literate one is.

Street (1995) asserts that traditional definitions of literacy are based on an autonomous model, as these definitions extract literacy from its social, cultural and historical context and treat literacy as a technical skill independent of context. He favours an ideological model which views literacy as social practice. More specifically, he argues that literacy is not a singular concept and that literacies occur within varying social and culturally embedded contexts. Literacies are, furthermore, positioned in relation to social institutions, such as schools, and the powers that sustain these institutions (Street, 1995). Thus, according to Street (1995), literacy involves more than mere grammar and structure but takes into account social groups and situations. Literacy, incorporating definitions of New Literacy Studies and Multiliteracies, is a means of socialisation (Goodfellow, 2004).

Barton and Hamilton (2000) broaden the scope of literacy to include two further concepts: 'literacy practices' and 'literacy events'. Literacy practices are what people do with, or how they make use of literacy .They describe practices as 'the general cultural ways of utilizing written language which people draw upon in their lives' (Barton and Hamilton, 2000:8). Literacy practices involve values, attitudes, feelings, and social relationships. They have to do with how people in a particular culture construct and view literacy and how they make sense of it.

Literacy events are occurrences where literacy is integral to communication. They are 'observable episodes which arise from practices and are shaped by them. The notion of events stresses the situated nature of literacy, that it always exists in a social context' (Barton and Hamilton, 2000:8). In my study, I focus on digital literacy histories written by participants as literacy events, which are situated within the broader literacy practice of digital literacy.

Barton and Hamilton's key points about literacy and literacy practices can be summarised as follows:

- Literacy is a social practice
- Different literacies are associated with different domains of life
- Literacy practices are patterned by social institutions and power relationships, and some literacies are more dominant, visible and influential than others
- Literacy practices are purposeful and embedded in broader social goals and practices
- Literacy is historically situated
- Literacy practices change and new ones are frequently acquired through formal and informal learning and sense making (2000:8).

Snyder (2002) argues that literacy needs to be viewed within a broader social order or 'new communicative order'[12]. She (2002) further proposes the term 'communicative practices' rather than 'literacy practices', based on the new communicative order. She explains that much of what happens in today's teaching environments, characterised by rapid social and cultural changes, is dependent on new technologies or technological literacies. Snyder (2002) believes that students need to integrate and make use of new information and communication technologies (ICTs) in the classroom and that teachers need to facilitate this. In this way, these students will be prepared to 'contribute actively, critically and responsibly to a changing society' (Snyder, 2002:1).

Castells' New Communication Order sets up a system of communication that is characterised by 'its global reach, its integration of all communication media, and its potential interactivity' (Castells, 1996: 329). But along with these characteristics of the New Communication Order come other implications for literacy and communication practices. For one, social interactions are affected. Some argue that traditional power relations are reversed through the New Communication Order whilst others believe that ICTs are more likely to reinforce existing power relations (McConaghy and Snyder, 2000). Snyder (2000) argues that the domains of home, work, education and entertainment are all connected through ICTs and these are no longer the separate realms they once were. As a result of this convergence, 'codes of social behaviour will become more hybridised' (Snyder, 2002: 2) as these domains become intricately linked and integrated.

One of the social challenges that exists for students in this New Communication Order is learning appropriateness. Snyder (2002) argues that in the context of

[12] The new communicative order involves many literacies which are part of the ideological, rather than the autonomous model on literacy.

growing and changing demands for literacy and technology, it is essential that schools and educational institutes enable students to become proficient in the 'critical' dimension of literacy and technology (Snyder, 2002: 125). What this means is that teachers and students need not only be able to use technological resources but also to be able to evaluate and assess them as they use them. In other words, they need to be able to 'critique them, to read and use them against the grain, to appropriate and even re-design them, as well as to be able to actively envisage and contribute to transforming social practices as they judge appropriate' (Snyder, 2002: 125).

Because of their access to and use of many different media forms, they need to be taught to use the right skill in the right context. This will not only be challenging for the students but also for the teachers (Snyder, 2002). By doing so, both teachers and students are redefining for themselves what it means to be literate in the New Communication Order.

Gee (1996) contends that literacy, according to NLS, is a contextualised practice rather than a skill which is learned formally. Thus it should be studied in its naturally occurring context and take certain variables, such as culture, history and access, into account. He believes that home is the primary domain, or context, in a person's life and school is only secondary to that. He does, however, believe that what students learn at home and bring into their secondary environments is vital and often not given the value it deserves. Thus, in my study, I focus on the participants' out-of-school practices and secondly, what they bring from their out-of-school practices into school, or secondary environment.

To highlight the relationship between literacy and social contexts, I refer to a study by Parks, Huot, Hamers and Lemonnier (2003). Their study took place in a

high school in Quebec where classrooms are equipped with network-based computers. The project focused on one ESL language arts classroom and two French content classrooms in which teachers used computer technology to conduct project-based activities. This project views literacy in a broader social context and computers as symbolic resources within a multiliteracies pedagogy. It concludes that teachers' pedagogical beliefs are crucial when it comes to teaching and that the use of computers in the classroom is a 'means to an end' (Parks et al, 2003: 39) rather than a necessity. Further it suggests that technology is mediated by teachers' views on teaching and influenced by broader contextual factors. They emphasise the importance of teacher innovation in such classrooms, as computers cannot and do not effect change on their own.

The implications of digital technology for the students at Creative College go beyond the 'digital divide'. These students form part of a minority in South Africa as they are privileged individuals who have access to a variety of digital technologies, unlike most other South African teenagers who do not. Nevertheless, these students have an important role to play in ensuring that South Africa, a developing country, is not marginalised even further by being excluded from advances in digital technology (Kajee, 2005).

2.5. Conclusion

This chapter has provided the literature review and theoretical framework for my inquiry. I have introduced the concepts of literacy, digital literacy and digitally-minded students, and located these within the New Literacy Studies, multiliteracies and literacy as social practice.

CHAPTER 3:
RESEARCH DESIGN

3.1. Introduction

This chapter describes the research approach, research site and research participants and provides a justification for the choice of each of the above.

3.2. Research approach

The research is a qualitative case study, which, as defined by Knobel and Lankshear (1999), is 'an intensive (in depth and detailed) study of a bounded, contemporary phenomenon such as a classroom, a school, a social group, and so on (Knobel and Lankshear, 1999: 95). Knobel and Lankshear (1999) further propose three key features of a case study which will be outlined and discussed below.

The first is that it is an in-depth study. This research can be described as 'intensive' or 'in-depth' as it aims to examine the specific practices and beliefs of a small and specific group at a specific time in some detail. Because the research focuses on one phenomenon – the digital literacy practices of a group of teenagers inside and outside the classroom – it fits the second key feature of a case study, according to Knobel and Lankshear (1999), which is that it focuses on a singularity.

The research was conducted in the students' own learning environments as well as the researcher's own teaching environment (Creative College) and thus the case study investigated a phenomenon as it happened in a real-life context, which is Knobel and Lankshear's (1999) third criteria for case study.

The study can be defined as 'qualitative research'. Qualitative research, according to Denzin and Lincoln (1994), allows researchers to study cultural and social phenomena in their naturally occurring contexts. Cassell and Symon (1994) argue that qualitative research is primarily concerned with context and situation and that these have a major influence on behaviour and experience.

Qualitative research methods have faced much scrutiny, especially from more scientifically orientated disciplines such as Medicine or Mathematics. Qualitative researchers have been labelled 'soft scientists' or 'unscientific' (Denzin and Lincoln, 2000: 7). Furthermore, because of its common use of smaller samples, qualitative research is often described as being unreliable and unable to provide statistically viable results (Yin, 1994). However, qualitative research has definite strengths. One of the most significant of which is its naturalism – 'its intimacy with real people in real situations, its concern for understanding human beings as they act in the course of their daily lives' (Hull, 1997). Quantitative research is able to examine phenomena within real-life contexts and it is for this reason that I have employed qualitative methods in this case study.

3.3. The research site

The research was carried out at Creative College in a Johannesburg suburb, the school at which I am currently an English teacher. The school is a co-educational, private school with six hundred and twenty students, most of whom

come from affluent backgrounds. School fees are approximately R48,000 per annum per child. The school is multiracial, multicultural and is made up of students from a number of different religious faiths. Most of the students at Creative College come from upper-middle-class backgrounds. The research was conducted in my own teaching environment with students from the school. My own English classroom at Creative College was utilised as a site in this inquiry.

The school is well-resourced in terms of technology and digital equipment, however it seems that the students in the school have access to far more advanced technologies in their social environments than those that are offered at the school. Although Creative College is a well-funded private school, slow progress is being made in terms of keeping the school up-to-date with constantly advancing technologies and teachers seem to be falling behind too. Teachers are still undergoing training on Microsoft Office and many are reluctant to use a computer even for basic tasks such as setting examination papers. The students, however, seem to be able to keep up-to-date with this technological change even though they might not have access to all the new technology at school.

3.4. Research participants and sampling criteria

One Grade 10 English class, comprised of fourteen students responded to the survey questionnaire. The participants' ages range from fourteen to sixteen-years-old. There were eight males and six females from a range of cultural and religious backgrounds. This was a convenience sample as I teach these students but participants took part in the study voluntarily.

All fourteen members of the class responded to the questionnaire and wrote reflective essays on their digital literacy histories and practices. I selected the

essays to use as data for the research report based on purposive sampling (Cohen and Manion, 1989). I based my selection of essays for the report on my judgement of their 'typicality' (Cohen and Manion, 1989:103). Their typicality, in this case, was not based on gender, race or religion bur rather on their position as Grade 10 students at Creative College and their response to the survey questionnaire. They were, thus, used in the research because they were in Grade 10 at Creative College and because they were willing to participate.

Eight of the fourteen students participated in the focus group interview during class time and the remainder of the class listened to the interview and discussions around it but did not actively participate. The basis for this sample was also purposive sampling (Cohen and Manion, 1989) for which students' responses in their digital literacy histories and willingness to participate in the interview were the deciding factors.

The research is 'contextualised' (Knobel and Lankshear, 1999) and takes into account the socio-economic backgrounds of these students, the location of the school and the type of school that Creative College is (private, co-educational and multi-cultural).

3.5. Methods and techniques for data collection

The following section describes the methods and techniques used to collect data for the research.

3.5.1 Survey questionnaire

The initial stage of the inquiry was comprised of a survey questionnaire with fourteen students. It aimed to determine the digital literacy practices, access to

digital technology and self-perceived proficiency in using digital technology of these students both inside and outside the school environment and the relationship between their in- and out-of-school digital literacy practices.[13] The survey questionnaire was completed during class time, in the English classroom by all members of the class.

The motivation for using a questionnaire in the inquiry is that it is a simple and almost instantaneous way of collecting information in the initial stages of an inquiry (Bell, 1987).

The questionnaire helped me to obtain an overall understanding of the students' access to and self-assessed proficiency in using digital technology and further, helped single out which students would be most suitable to use for the more detailed part of the inquiry i.e. the student digital history narratives.

The questions in the survey questionnaire were constructed using a Likert scale, a response scale often used in questionnaires and survey research. The participants, as is typical in a Likert scale, were asked to specify their level of agreement to the given statement or rate their use or knowledge of something (Meyers, Guarino and Gamst, 2005).They were asked, for example, to rate their user knowledge of various items of digital technology using the range from poor to excellent.

3.5.2. Students' digital literacy histories

A digital literacy history is a narrative of one's past and present experiences with digital technology. The participants were asked, in a letter from the

[13] Please refer to Appendix A for a copy of the questionnaire.

researcher[14], to explore for how long they have been digitally literate, how they came to be digitally literate and from where their knowledge of digital technology has come. Specific guidelines (such as length and other requirements) were also provided to the participants well in advance to give them the structure needed for them to write these narratives.

These narratives were used to gauge how digital literacy is learned and what it means to the youth. Using digital literacy histories was an effective way of obtaining relevant information from participants as these were personal reflections written by the participants in their own time and helped me understand participants' opinions on certain issues. These were also individual responses and so participants were not influenced by their peers when writing these narratives (Lincoln and Guba, 1985).

3.5.3. Interviews

Denzin and Lincoln (2000) suggest that the interview is a powerful way of coming to understand our fellow human beings. Thus interviewing the participants was a useful way of coming to understand their digital literacy practices.

I conducted one group interview with eight participants in order to stimulate discussion, to encourage uninhibited responses within the comfort of their peer group, as well as for pragmatic purposes of time management.

The interview was semi-structured[15] so as to allow freedom but at the same time provide a structure for the interviewer. I prepared an interview schedule[16]

[14] Refer to Appendix B for a copy of the instructions for writing a digital literacy history
[15] A semi-structured interview is a method of research in which the researcher uses some structured, pre-determined questions, or a framework with which to work, but in which the researcher may introduce new questions during the

before the scheduled interviews and used this as a platform from which to start the discussion in the interview session. The interviewees were not, however, confined to answering these questions and thus a semi-structured interview ensued (Cohen and Manion, 1989).

The interview schedule comprised of open-ended questions such as what the interviewees believe the school is doing to facilitate digital literacy. There was also some focus on how they feel positioned with regard to digital technology and their teachers' abilities in this area. Questions on both in-and out-of-school digital literacy practices were included.

In order to allow myself to participate in discussions and properly facilitate the interview, it was audio-recorded and later transcribed (Swann, 1994). Audio-recording was also useful as I was able to keep a record of the interview in its entirety. I chose audio over video recording as the focus of the research was on what the participants said, rather than what they did. Their words, therefore, were the most important aspect of the interview and audio-recording was thus most suitable. The word-for-word transcription of the interview was done over many hours and it was often challenging to decipher what was being said. In keeping with the focus of this research, digital technology, I used three different cellular telephones, which were dispersed amongst the focus group, to record the interview. I then transcribed the interviews using one of the cellular telephones, primarily, but relying on the others as a backup when I could not decipher what was being said.

3.5.4. Teacher journal

interview, if the need arises. Semi-structured interviews are more flexible than structured interviews and the interview is more likely to flow like a conversation than in a structured interview

[16] Refer to the Appendix for a copy of the interview schedule.

As a final method of data collection, I, as a Grade 10 English teacher, kept a journal in which I reflected on Grade 10 students in my English classes. I kept notes on what they did and said in class and around the school (related to digital technology) and wrote reflections on their questionnaires, oral presentations and digital literacy histories. Often incidents relevant to my research happened in the classroom which I would soon forget about and a journal was a useful way of recording incidents as, or soon after, they happened in class and around the school.

Keeping a journal was a form of observation, which was a useful research method as it allowed me to collect a wide range of data and get a holistic perspective on students in their natural, school environment. It also allowed me to learn things about participants that they may not have disclosed in the interview or literacy history. It also allowed me to reflect on what they were doing and what I, as a teacher, could do to incorporate these practices into my classroom appropriately. It was not intended to record what they knew so much as to record how they were using digital technology and how their practices needed to be modified in order to be appropriate in particular contexts. A problem with this form of data collection, however, is that it is both subjective and limited as only one person, or a few people, can be observed at a time (Denzin and Lincoln, 2000).

3.6. Methods and techniques for data analysis

The primary sources of data that needed to be analysed in this inquiry were the completed questionnaires, participants' digital literacy histories, a transcript of the interview and finally the researcher's own journal on students' digital literacy practices.

Initially, I needed to establish the participants' access to and knowledge of digital technology. This was done by analysing the completed questionnaires, and drawing up tables that condensed relevant information.

The analysis of data was done through coding and thematic content analysis. Aronson (1994) defines this approach as one in which identifiable themes and patterns are used to analyse data. She suggests that patterns of experiences which occur within data should be used. The patterns which occur in my data have been listed under themes which relate to my research questions. These themes may be, as Leininger (1985) suggests, meaningless when viewed in isolation but make more sense when they are grouped together.

CHAPTER 4:
DESCRIPTION AND ANALYSIS OF DATA

4.1. Introduction

In the next two chapters, I describe and analyse the data. I provide, in this chapter, a description of the research participants' access to digital technology, confidence in using digital technology, their knowledge and their in- and out-of-school practices in order to address my first research question. Following this I provide, in Chapter 5, a response to my second research question, 'What are the in- and out-of-school digital literacy practices of a group of Grade 10 students at a private school in Johannesburg?' The analysis is framed by literature in the fields of New Literacy Studies, multiliteracies, and literacy as social practice.

Each of the participants in the study completed an anonymous survey questionnaire[17] on their access to digital technology, their digital literacy history and their in- and out-of-school digital literacy practices. Findings from these questionnaires are presented in the next section in tabular form and then discussed.

The questionnaire helped to establish the participants' practices and experiences with digital technology. One finding is that these Grade 10 students are part of what Tapscott (1998) terms the Net-Generation. They are students who engage effortlessly with new forms of technology and have liberal access to these technologies.[18]

[17] Refer to the Appendix for a copy of the questionnaire that was used.
[18] Not all South African students fall into this category, however the students in my study do as they have almost unlimited access to, and are adept in the use of digital technology.

4.2. Issues of access

According to Shields and Behrman (2000) there is little doubt that the use of computers and digital technology has increased substantially in the past few years. According to the researchers, home computer ownership increased by 22% between 1996 and 2000, and internet connections increased by 37%, in developed countries, during these years. Furthermore, they explain that computer use is increasing amongst teenagers, who often spend more than four hours at a time on the computer at home. They report that children use the computer and the Internet for a range of activities such as communicating with friends, playing games, finding information, completing school work and meeting people. Table 1 indicates individual or family ownership of a range of digital items by the participants in the study.

Table 1: Access to digital technology

Item	Number of students who possess item
Desktop Computers	13
Internet Access	14
Laptop Computer	8
Pocket PC/PDA	2
Flash Disc	11
Cellular Telephone	13
iPod/MP3 Player	12
Games console	10
PSP	1
Digital Camera	14
TV	14
CD player	13
DVD Player	14

As Table 1 shows, all of the participants in the study have Internet access and live in families who own a television set, a digital camera and a DVD player. Thirteen of the fourteen participants have a desktop computer, a cellular telephone and a CD player. Twelve of the participants have an iPod or other

MP3 player. Eleven of the participants possess a flash disc and ten of them a games console. Eight of the participants possess a laptop computer. Only two of the participants have a pocket PC or Personal Digital Assistant (PDA) and one has a Playstation Portable (PSP). None of the participants listed any other items in the 'other' column.

The information given by these participants in the questionnaire shows that these students are advanced, in relation to most other South Africans of the same age, in terms of their access to digital technology although, given their socio-economic profile it could have been expected that more of them would have PDAs and PSPs. This relative 'lack' may be explained by the fact that most of them own a cellular telephone and a games console, which can perform similar functions to the PDA and PSP.

4.3. Digital technology in the participants' lives

Table 2: Dependence on digital technology	
Students who feel digital technology is vital and can't live without it	12
Students who believe that digital technology is somewhat important	2
Students who feel that digital technology is not important at all	0

As is evident in Table 2 above, twelve out of the fourteen participants answered, in response to the question on how important digital technology is to them, that digital technology is vital in their lives and that they cannot live without it. Only two participants felt that digital technology is somewhat important, however not vital.

The fact that the majority of participants chose to describe their dependence on digital technology as 'vital', as opposed to 'somewhat important' shows how digital technology has infiltrated their lives, so much so that they cannot imagine life without it. The word vital suggests that digital technology is of crucial importance. None of the participants believe that digital technology is 'not

important at all', which indicates the importance of digital technology in their lives.

Table 3: Most important item	
Item	Number of students who felt this item was their most important piece of digital technology.
Cellular Phone	9
Computer	2
Television	1
Irregularities	2

Table 3 shows that nine of the fourteen participants feel that their cellular telephone is their most important piece of digital technology. Only two participants listed their computer as being their most important possession.

The participants' responses to this question suggest how dependent they believe they are on digital technology, so much so that they cannot imagine a life without it. Their cellular telephones form part of their day-to-day lives and in many cases can perform the functions of a computer, a digital camera, a music player and many other of the items listed in the survey. The fact that the cellular telephone can perform the functions of a computer, DVD player and digital camera, amongst other things, may explain why only two of the participants listed their most important item of digital technology as the computer and the majority (9 participants) listed their cellular telephone as their most important item.

Two participants presumably misread the question, which asked them to choose their most important item, as they indicated all the items on the list (cellular telephone, MP3 player, games machine, digital camera, television, CD player and DVD player) as their most important item, instead of choosing one. Alternatively, this choice of 'all' may indicate the importance of digital

technology in these young people's lives – it plays such a significant role in their lives that they are unable to say which single item is most important to them.

According to Rifkin (2000), for this generation of computer-literate and computer-dependent youth the digital world and all its possibilities are a fact of life rather than a marvel or new phenomenon. The use of cellular telephones, computers and other forms of digital technology has become a foundation for communicating and general living for these young people. Oblinger and Oblinger (2005) confirm Rifkin's beliefs by stating that 'For the Net Gen, the Internet is like oxygen; they can't imagine being able to live without it. Their attitudes, aptitudes and learning styles reflect their exposure to information technology' (Oblinger and Oblinger 2005:20).

4.4. User knowledge

Table 4: Ratings of user knowledge

	Excellent I am proficient	**Good** I am competent	**Average** I can get by	**Fair** I have some knowledge thereof	**Poor** I have little to no knowledge thereof.
The Internet	7	7	0	0	0
Microsoft Word	11	3	0	0	0
Microsoft Excel	5	8	0	1	0
Microsoft PowerPoint	6	7	0	0	1
Email	9	3	1	0	1
Chat rooms	3	8	2	0	1
Cellular Phone	12	2	0	0	0
MP3 player	10	3	0	0	1
Games machine	6	7	0	0	1
Digital Camera	11	3	0	0	0
Television	14	0	0	0	0
CD player	14	0	0	0	0
DVD player	13	1	0	0	0

The above table (Table 4) uses the Likert scale to determine user's perceptions of their knowledge of digital technology. The participants were asked to rate their user knowledge of various digital technology devices and applications,

ranging from poor to excellent. In this case, 'excellent' suggests that participants have an outstanding or superior knowledge of the listed items or applications and that they are seamlessly able to use their knowledge in their in- and out-of-school contexts. 'Average' suggests that their knowledge of the listed items or devices is ordinary or intermediate, not exceptional but also not inadequate. 'Poor' suggests that their knowledge of the listed items or devices is inferior, inadequate and not sufficient for them to meet the needs of their social or educational contexts. The categories in between excellent, average and poor are bridging categories for those who don't quite fit into the three distinguishing categories.

As is apparent from Table 4, when asked about their user knowledge of these various items and applications, the majority of the respondents rated their user knowledge of the items listed in the questionnaire as either excellent or very good. Only two respondents rated their user knowledge of chat rooms as average. One respondent rated his/her knowledge of email as average. One respondent believed his/her knowledge of Microsoft Excel was 'fair'. There were five responses in the 'poor' category – one each under the following categories: Microsoft PowerPoint, email, chat rooms, MP3 player and games machine.

The responses in the 'fair' to 'poor' categories were in response to items or applications that are likely to be of less importance to the participants than items such as television. It is also evident that they are more proficient in items and devices that are used more on a social level, such as a cellular telephone, than those used for school purposes, such as Microsoft Excel. It is, however, clear from the responses to the questionnaire that most of the participants believe that their knowledge of digital technology is good or even exceptional and the responses suggest that digital technology plays an important role in their lives and is something which they feel comfortable using. It is thus fair to conclude

that in their own estimation these participants are digitally literate as they are able, and for the most part comfortably able, to access, use and understand information in its digital form (Gilster, 1997). Furthermore, they are multiliterate as they have a number of different literacies, including textual, aural, digital and visual (New London Group, 1996).

4.5. In- and out-of-school practices

Table 5: In- and out-of-school practices

Number of students who use item…➔	Mostly for school work	Mostly for social purposes	For school and social purposes	I don't use this at all
The Internet	6	0	8	0
Microsoft Office	9	0	1	4
Email	0	11	1	2
Chat rooms	0	5	0	9
Cellular Phone	0	7	6	1
MP3 player	0	11	1	2
Games machine	0	8	0	6
Digital Camera	0	10	4	0
Television	0	13	1	0
CD player	10	2	0	2
DVD player	0	11	3	0

The participants were asked for what purposes they used a number of items and applications. Although it seems obvious that certain items would only be used for social purposes (such as MP3 players) I noticed, in my observation of these students at school, that many of them use these items for school purposes as well. They were, for example, given a project for English in January, where they had to present a speech on a song that is relevant to their lives. Many of the students brought in their iPods to play the song for the class at school. The same was done with CD players. Similarly, they were given a project for Computer Studies in which they had to create their own game, and thus used their games machines at school to gain inspiration for this project. These examples, however, only pertain to a small minority of the students and in few instances of use, as is evident from the figures in Table 5.

As Table 5 above shows, most of the participants indicated that they use the Internet both for school and for social purposes; although six of the participants indicated that they use it mainly for school work. Most of them also indicated that they use Microsoft Office and their CD players mostly for school work. More than 75% of the participants indicated that they use email, their MP3 players, television and their DVD players mostly for social purposes. Nine of the participants indicated that they don't use chat rooms at all and five of these participants indicated that this is because they have replaced chat rooms with Facebook or MXit.[19] Only one indicated that he/she does not use a cellular telephone at all. The rest of the participants indicated that they use their cellular telephones mostly for social purposes (seven participants) or for school and social purposes (six participants).

It is evident that most of the participants use most of the devices listed mainly for social purposes. This is perhaps an indication that the school is not making enough use of digital technology or encouraging the use thereof for school purposes[20]. These participants are obviously actively using digital technology in their out-of-school lives and this is testament to the digital revolution of which they form part.

The Digital Revolution is a term describing a noticeable increase in the reach and production of digital devices, particularly computers and cellular telephones. It is generally acknowledged as having occurred in the last half of the 20th century with the acceptance and popularisation of the personal computer. It involves, as any revolution, change and more specifically the change from all things analogue to all things digital and the global connectivity that has occurred as a result thereof (Castells, 1996). The figures in Table 5 are testament to these students' involvement in the Digital Revolution and show, for

[19] Refer to glossary of terms for a definition of these terms.
[20] This will be discussed further in Chapter 6, Findings and Recommendations.

example, how students are using email and the Internet to be globally connected in- and out-of their school environments.

As Snyder (2002) shows, students need to integrate and make use of digital technology not only in their social lives, but also in the classroom. She suggests that this is important so that they are equipped to contribute to the Digital Revolution in all areas of their lives. Furthermore, as discussed in Chapter 2, Gee (1996) believes that literacy, in all its forms, is a contextualised practice that is learned and used primarily at home and secondarily at school. The findings presented in Table 5 offer support for Gee's views, given the predominance of the use of the listed devices and applications at home rather than at school. According to Gee (1996) it is imperative that students' out-of-school practices are given the recognition they deserve and are drawn upon in the classroom environment because they may inform in-school literacy learning and allow teachers to engage and support their learners' needs.

4.6. Conclusion

In this chapter, I have provided a description of the research participants' access to digital technology, confidence in using digital technology, knowledge thereof and their in- and out-of-school practices. Through analysis of the survey questionnaires they completed, I found that the majority of participants have unlimited access to digital technology, feel confident using digital technology, have a good to excellent knowledge of digital technology, and use it primarily in their social lives but also to some extent in the classroom. The analysis of the data was framed, amongst others, by Tapscott's (1998) work on the Net Generation, The New London Group's (1996) work on multiliteracies, Gee's (1996) work on in- and out-of-school practices, and Snyder's (2002) work on the new communicative order.

In chapter 5, I move on to describe a response to my second research question, 'What are the in- and out-of-school digital literacy practices of a group of Grade 10 students at a private school in Johannesburg?' This chapter will offer an analysis of participants' digital literacy histories and of the focus group interview.

CHAPTER 5:
DESCRIPTION AND ANALYSIS OF DATA

5.1. Introduction

In relation to the second research question, 'What are the in- and out-of-school digital literacy practices of a group of Grade 10 students at a private school in Johannesburg?', it is important to note that the findings are from research with students from middle to upper-class backgrounds, as has been explained in Chapter 3.

In this chapter, I examine data under themes which emerged from the participants' responses to various interview questions and their digital literacy histories. The analysis of data is illuminated, where relevant by literature in the fields of New Literacy Studies, multiliteracies and literacy as social practice.

5.2. My earliest memories

> *I can't imagine what my life would be like without digital technology. It is such a huge part of my life and seems to have always been there, so I can't really remember the first time I used it.*
>
> Thandeka, Age 15[21,22]

Many of the participants explain how they have been using digital technology for so long that they cannot remember the first time they used it. This suggests the extent to which digital technology has permeated these young students' lives, so much so that it has always been a part thereof.

[21] The names of all the participants in this study have been changed to ensure anonymity.
[22] The quotes used in this study have not been altered and are the participants' exact words.

Stephen, for example explains how he has 'been using digital technology for so long that [he] can't remember when [he] first started using it'. Bryan describes that 'from as far back as I can remember, there has been digital technology in my life.' Kate explains that she 'was basically born into the new world of technology because by then there was cell phones, TVs, lights etc…'.

These students are described by Tapscott (1998) as the Net-Generation or N-Gen. This generation is made up of children and young people between the ages of zero and twenty-years-old. They are different from their parents' generation because they have grown up surrounded by digital technology. Items such as computers are commonplace in these children's lives and they use them at home, in school and for their own personal entertainment. These technologies are also increasingly connected to the Internet which links them to others in this expanding web of connectivity. The N-Gen is accustomed to having digital technology in their lives and it has a strong influence on them. Tapscott (1998: 14) describes these children as being 'so bathed in bits that they are no more intimidated by digital technology than a VCR or a toaster'. This suggests that it is vital to them and that they function using it in an ordinary, everyday way.

These students are also referred to by Howe and Straus (2000) as 'Millennials' (Howe and Straus in Warschauer, 2006: 11). They are the generation who were born after 1982 into a world of digital technology, have grown up with the Internet and are described as 'native' users of these technologies (Warschauer, 2006: 11). This is obvious from the participants' responses: they describe how they have been using technology for so long that it is as natural to them as speaking.

Only one of the participants can actually pinpoint the age at which she first started using digital technology. Kerry describes first using digital technology on

her thirteenth birthday in the form of a cellular telephone. All the other participants explain how they either cannot remember when they first used digital technology or approximate the age when they first used it. Michaela, Stephan and Kabo all describe that their first memories were 'from about the age of…' six- or eight-years-old. This suggests that, like Thandeka, Bryan and Stephan, digital technology has been so much a part of these students' lives that they cannot remember a world without it. Hence Warschauer's (2006) description of their use of digital technology as 'native' is apt.

Fumazi has 'very fond memories with regards to digital literacy'. He remembers this experience as 'being fun but also one I learned from'. Kabo 'was excited' when he first used digital technology. Stephanie 'felt very at home' when she first used digital technology. Similarly, Tameez 'was so amused' when she first experienced digital technology and Kate found it 'amazing'.

The predominance of positive adjectives in describing their earliest memories illustrates these students' attitudes to digital technology. It is thus clear that these students regard the introduction and use of digital technology in their lives in a very positive light. They are comfortable with it and enthused by its introduction into their lives. Kerry's description of her first cellular telephone indicates the same enthusiasm. Although Kerry had to wait until she was thirteen-years-old until she received her first cellular telephone, she describes it as a 'new toy which never left [her] side'. She viewed her friends who already had cellular telephones as 'privileged' and her then new acquisition as the 'latest, greatest creation'.

It is clear from reading the participants' literacy narratives that these students are 'Millennials' (Howe and Strauss, 2006). They are digitally-minded and naturally engage with new forms of technology. In the next section I explore

how they came to be so digitally-orientated and proficient in the use of digital technology.

5.3. Teaching and Learning

> *I taught myself how to use digital technology since no one else in my family knew much about it. At first I would aimlessly click on the computer, but then, just as fast as digitally technology grows and improves, so too did my knowledge.*
>
> Shaun, Age 15

As is evident from the data presented, the participants in this study have been using digital technology for most of their lives and believe themselves to be skilled in its use. They are multiliterate and comfortable with the multimodal, as they function proficiently with various and overlapping literacies and modalities, including the visual, verbal, textual and digital (Kress, 2000).

Many of the participants describe their first memory of using digital technology with a family member. Stephanie was introduced to digital technology by her father and Tameez describes the moment her father brought his first cellular telephone writing that the two of them 'sat down together and discovered the wonders of the cell phone'. Fumazi's uncle introduced him to the basics of the personal computer and JJ describes how he was first exposed to the computer by watching his mother.

However, nine of the participants explain that they taught themselves to use digital technology. This was either because there was no one who was able to teach them or because no one was there to teach them. Fumazi, for example explains that 'I was mainly self taught because nobody was there half the time'. Stephan learnt to use digital technology by trial and error because his 'parents

were not very tech-savvy'. In the following statement, Kerry describes her first experience with a cellular telephone:

> *Surprisingly I was the person who taught myself to use my cell phone. No manual was needed, no help from Daddy, nothing. I did it all myself.*

One explanation for self teaching comes from the literature on identity and will be discussed in section 5.9 of this chapter. However, the dominance of this practice may also be ascribed to the older generation's general lack of 'tech savvy-ness' and the younger generation's ability to embrace the challenges of a digital world.

As is evident from the data, young people from a very early age have begun teaching themselves how to become active, to participate online and to use digital technology. As Turkle (1997) suggests, 'The Internet is redefining our sense of community and where we find our peers. Youths today are developing new ways of thinking as a result of new technologies; they are piecing together concepts from fragments they have found scattered throughout the Internet' (Turkle in Judge, 1997: 100).

Tapscott (1998) suggests that these students learn by doing and experimenting with new technologies rather than by being taught and this is supported in the students' narratives. Although some of the students were introduced to digital technology by someone else, they mainly taught themselves to use it. Their knowledge was merely enhanced by formal schooling rather than being the result of overt instruction at school. As Andone, Droin, Pemberton and Boyne (2007) show, these technologies have been integrated into these students' daily lives and they are so accustomed to having digital technology around them that using it comes naturally to them. Furthermore, they suggest that these students need to have power over their digital environments and this they have

achieved through teaching themselves and thus empowering themselves in this way (Andone et al, 2007).

5.4. In- and out-of school Practices

It is important, here, to note Snyder's (2002) beliefs on literacy as a social practice. She believes that present day students need to integrate and make use of new information and communication technologies (ICTs) not only in their social lives but also in the classroom and that teachers need to facilitate this. In this way, these students will be able to make valid contributions to society and teachers can ensure that this is done in a responsible and critical way through educating their students (Snyder, 2002).

It is interesting to note that none of the participants' first memories of using digital technology were at school or from school. Although some of them explain that their knowledge of digital technology was enhanced at school, none of their initial learning took place at school. JJ explains that 'Although I was mainly self-taught, I learned the specifics of using digital technology at school, in formal lessons'. This suggests that the home and family has played a far more prominent role in their learning to use digital technology than their school environment. Fumazi notes that what he was taught in formal school lessons benefitted him as he was 'then able to apply what [he] had learned from school to other things and teach [him]self more'. Of course students have more free time out of school than at school for experimentation with digital technology.

Warschauer (2006) highlights a growing divide between students' use of digital technology at home and at school. Levin and Arafeh (2002) in Warschauer (2006) show that 'for the most part, students' educational use of the Internet, for

example, occurs outside of the school day, outside of the school building, outside the direction of their teachers' (Levin and Arafeh, 2002: iii).The divide between home and school is intensified because access to the Internet at school is restricted.

Thus, as highlighted by Warschauer and as is evident from participants' responses, students are not working with digital technology as they could be at school. What they are working with outside of the school environment is not being given recognition in the school environment. Teachers are not making use of the wealth of knowledge that these students have of digital technology or their out-of-school access to different technologies and, as a result, different literacies and modalities. Furthermore, they continue to use traditional modalities in the classroom rather than embracing new technologies or using them to enhance their teaching. The school therefore seems to have adopted an autonomous, rather than the ideological model of literacy and is not benefitting from the vast range of literacy practices in which these students are engaging. Furthermore teachers are not taking students' out-of-school contexts into consideration and integrating them into their school experiences (Street, 2003). Recommendations for addressing this problem will be explored in the final chapter of this report.

Tapscott (1998) believes that it is vital that parents, educators and leaders in society have a good understanding of what this younger generation are doing with digital technology and what they intend to do with their digital expertise. He proposes that they can learn much more about a whole generation from the children who are most sophisticated in their use and adoption of this technology.

5.5. Teacher and Student Anxiety

Although many young people feel very confident using digital technology, there are still those who initially felt or still feel apprehensive about using it. Shaun, for example, found his first experience of using digital technology 'both frustrating and confusing' but explains that now that he knows how to use it he feels 'a sense of accomplishment'. His memories reflect a central concern for many people when using digital technology: being digitally illiterate causes anxiety. This raises concerns for the implementation of digital technology in schools as many teachers share this anxiety and are not confident in using it within their classroom environments. As Tapscott (1998) shows, many teachers are anxious about using digital technology as they grew up without digital technology and thus need 'to learn new tools, new approaches and new skills' (Tapscott, 1998:137).

Lankshear and Knobel (2003) show how schools believe that the implementation and use of digital technology is their biggest challenge. Not only is there a problem with implementing these new technologies in the schools, but also with socialising teachers and students into using them in the classroom. Kress and Van Leeuwen (2001) show that dominant literacy practices, of which digital literacy practices form a part, have the ability to empower or disempower. If schools embrace and make use of these dominant literacy practices, they can be empowered but if they don't, they face isolating themselves from their students. Thus it is important that schools such as Creative College become more enlightened when it comes to digital technology or teachers and management face being marginalised. This is especially important in a school such as Creative College because, as is evident from this data, its students are so proficient in using digital technology.

The problem with teacher anxiety in relation to digital technology needs to be overcome in order for teachers to work productively with their students. If these students feel uneasy using digital technology, they work on developing their skills until they are adept. Mohammed experienced this anxiety when he first used digital technology:

> *My first memories of using digital technology are most probably when I sang along to Barney, the purple dinosaur on television. I blush profusely when I admit that the first time I used a computer was in Grade 5. As I explored the then awesome 2D technological graphics, I am ashamed to admit that it was not a big part of my life.*
> *I remember looking at complicated devices, which had simple names like a mouse. The double-click and single click was a complex reflex, yet as I sit now, writing, I am laughing at how simple those tasks have become.*

Although Mohammed admits his apprehension when he first used digital technology, he describes how he overcame his trepidation and now finds using it effortless. It is also important to note Mohammed's embarrassment at only starting to use digital technology in Grade 5 and the fact that it was initially not a big part of his life. The fact that he uses the expressions 'blush profusely' and 'ashamed' suggests that this is not acceptable behaviour in his social context and something that he feels he needs to confess or 'admit' to the world. These emotions are linked to identity formation and the way a person feels positioned in a society. In Mohammed's case, he doesn't see it as socially acceptable behaviour to have learned about digital technology at such a late stage in his life.

5.6. The Generation Gap

Kate describes the time before digital technology existed as 'a long, long time ago'. She explains that 'before technology was invented people lived a very

different life. To make light they would use a potato. To write a letter to someone you would give it to a mail man to deliver. The only way to speak on the phone was at home or through a phone booth'. It seems that Kate views the time before electricity was invented and the time before the cellular telephone was invented as the same era. This suggests that because she is so used to having all of these in her life that a life without them seems alien and eons ago to her.

Similarly, Michaela believes that her parents 'missed out on things when they were my age'. She believes that 'these digital components are life'. This shows a perception that previous generations were disadvantaged because they did not have digital technology, and also that for some of today's youth, digital technology is what defines their lives.

Mohammed raises an interesting point about the youth's advancement over their teachers and parents when it comes to using digital technology. He describes one of his experiences in relation to this issue:

> Sometimes you go to the computer classes and some of the teachers are going on computer courses and learning to use Word, which we knew about in grade 5 already. So there's a definite gap there.

It is clear from Mohammed's description that the youth view themselves as far more advanced than their teachers and there is a divide in knowledge and use of digital technology between these generations. Pamela Mendels (1998, New York Times online) describes a reversal of roles between teachers and students.

She describes how approximately ninety high school students are earning extra pocket-money by teaching adults how to surf the Internet. These students have been using the Internet for many years and they use their experience in the 'Teen Net Mentor' programme to assist people, many of them up to five times

their age, in using the Internet. They teach them a range of skills from finding a book in a library's electronic catalogue to finding jobs online.

A similar study in Finland (cited in Tapscott, 1998) shows five thousand N-Geners who have been chosen to train the teachers in using computers. Therefore they will play the role of teachers and teachers will play the role of students (Tapscott, 1998).

These two examples show that teachers and parents alike need not be intimidated by their students' and children's advancement over them when it comes to being digitally literate and should rather draw on the younger generation's digital literacy. According to Lankshear and Knobel (2003) schools have identified digital technologies and the implementation thereof as the biggest challenges for them. They acknowledge that students' out-of-school practices are very important and suggest that schools need to draw on these practices in order to enhance the learning process for students at school. It is evident, from the studies referred to above, that some schools are making the most of their digitally-literate students by having them teach their parents and teachers how to use digital technologies and are thus acknowledging the crucial role that these young people have in today's society.

Incorporating digital literacy into classroom practices involves incorporating multiple literacies and is not, according to Warschauer (2002) a matter of teaching these multiple literacies separately from content. He asserts that incorporating multiple literacies into the classroom is a gradual process, and should not entail discarding old methods of teaching, but rather adding to and enhancing these traditional methods with new and multiple literacies.

5.7. Then and Now

> *Life without digital technology would be slow, boring, uninteresting and hard to endure. It plays a very important role in my life and I cannot live without it. Because it all plays such an important role in my life, I can't say what piece of digital technology is most important to me. I am dependent on technology and I believe I will still be in the next ten years. I love it and adore it.*
>
> *Kabo, Age 16*

Two of the participants compare their first memories of digital technology with their present-day knowledge. Tameez describes her father's first cellular telephone as a 'brick' compared to new cellular telephones and Michaela explains that her mom's cellular telephone was an Ericson: 'Big and fat, and had an aerial and all. Everything was in black and white and there was no mms, Internet access, camera or coloured screen'. These descriptions of their first experiences with a cellular telephone indicate just how much technology has advanced over a very short period of time. Their attitudes in these descriptions are almost scornful and disbelieving and reflect the attitude of many modern-day teenagers. They live in a world of rapid changes.

Tapscott (1998) explains that when it comes to understanding and using new technologies, many parents fail to keep up with their children. He uses the term 'lap generation' to describes children who have moved beyond a generation gap to a generation lap where they are overtaking (or lapping) their parents when it comes to digital technology. Thus it is reasonable that the participants in this study have such attitudes to their parents' lack of sophistication in this area.

Fumazi explains that 'if digital technology did not exist, [he] would have to go to the library to do research, go to the store to buy music and have to do things like send handwritten letters to people who live far from [him]!'. The exclamation mark at the end of his statement shows how foreign these concepts are to Fumazi as he expresses disbelief and incomprehension at the thought of having

to do such things. This is reinforced by the following statement made by him; 'The world nowadays is all about technology and if you aren't digitally literate, you are in trouble'.

Mohammed further emphasises the rapid change that technology has undergone since he was young. He remembers watching videos of Barney, the dinosaur in what he describes as 'the then awesome 2D technological graphics'. His choice of wording in 'the then awesome' indicates that for him things have advanced since then and suggests that 2D graphics are no longer as 'awesome' as in the past.

5.8. Parental Guidance

It is evident, after reading the digital narratives, that some of the participants' parents are far stricter than others when it comes to monitoring the use of digital technology in their children's lives. Thandeka and Kerry both only received cellular telephones when they were thirteen-years-old, which is late compared to some of their friends who were, according to Kerry, 'privileged enough to already have their own cell phones'. This suggests different family values and different rules which apply in the home. The fact that some parents chose the age of thirteen for when their children could receive their own cellular telephone is also significant. It is almost as if this is a rite of passage for these children at the age when they are entering high school and more peer pressure from peers is expected.

Mohammed also received his cellular phone when he was thirteen but he is only allowed to use it during the holidays. For the rest of the time, when he is at school, his cellular telephone is kept by his parents. Nevertheless he now

describes his world as 'dominated by [his] Nokia 7620' on which he spends '4/7 on the popular chat service MXIT*.

Michaela, on the other hand, received a cellular telephone when she was ten-years-old. She describes this as a social necessity at school because you were said to be 'cool if you had a cell phone'. Here we see that some parents are far more lenient than others and that their children yearn for social acceptance promised by digital technology.

Tapscott (1998) suggests that many adults feel uneasy about the Net Generation because of the rapid growth of the Internet and other such technologies. They fear the power of the digital age and the fact that their children and students may be exposed to inappropriate material, especially on the Internet.

5.9. Identity

> *The world nowadays is all about technology and if you aren't digitally literate, you are in trouble.*
>
> Fumazi, Age 16

Identity is described as a set of behavioural or personality traits by which an individual is recognised (Rall, Coffey and Williamson, 1999). The creation of identity, especially amongst the youth when everything they learn is linked to the creation of their identities, is strongly influenced by social contexts. Furthermore, as Hall (1992) suggests, young people's identities, nowadays, are multiple and operate on many different levels, including the social and cultural.

In developed societies, such as that in which my research was conducted, adolescents' use and knowledge of technology is considered as important as what they wear and what they do (Aakhus and Katz, 2002). As in past

generations, today's youth are confronted with the problem of self-definition. To most adolescents, technologies such as Mobile Phones are crucial in the formation of individuality and identity (Aakhus and Katz, 2002). These technologies not only make a statement about a youth's identity in terms of class but also about how they want to be viewed. Technology is used increasingly within youth culture to project a desirable image to others, to express social status and to make visible personal statements to create an identity (Aakhus & Katz, 2002).

The impact of the Internet and digital technology on identity cannot be overlooked. Identity on the internet, for example, can be shaped in any way an individual chooses and anonymity is a large part of this identity construction (Kajee, 2005). The social context of the Internet is expansive and extreme and thus, it has been argued, a crisis of identity has resulted. Hall (1992) believes that identities have changed in the modern world and no longer have the stabilizing effect on the social world that they once did but rather have become fragmented, 'moveable feast[s]' (Hall, 1992: 277). Turkle (1995:9) describes how the Internet 'links millions of people in new spaces that are changing the way we think…our very identities'. This may be due to the fact that individuals create virtual personae online which are often anonymous and different to their real personae. Thus, there seems to be a lack of stability and certainty in this online world.

It is clear from the results of the survey questionnaire, reported on in Chapter 4, that most of the participants in this study use digital technology mainly for social purposes. Thandeka doesn't know how she 'ever functioned without it'. She explains that

> *I use it* [her cellular telephone] *to communicate with my friends and can sms my mom whenever I need to. In my life, I believe that I will always use digital*

technology to communicate with friends and family and keep myself entertained. When my cellphone broke for a day I felt sad and lost.

Thandeka's choice of the words 'sad and lost' positions her as overly dependent on digital technology. She, like many others, functions on a day-to-day basis depending on digital technology. This dependence is further highlighted by Kabo, who believes that digital technology and a knowledge thereof is vital in this day and age to keep oneself 'socially aligned and acceptable'. He suggests that if one is not technologically literate one may be isolated in society and because he is au fait with digital technology, he can contribute to conversations and even assist people with it because he 'know[s] all about it'. His choice of the words 'socially aligned and acceptable' further emphasise how much digital technology has affected these young people's lives, especially on a social level, indicating that to be part of the in-group, digital literacy is a necessity. Thus one can assume that if these students are not adept in the use of digital technology or have limited access to it, they may be marginalised and feel excluded from their social group.

These students are emotionally affected by the role of digital technology in their lives. Cellular telephones and other forms of digital technology play a part in defining them in terms of their identity and social status and are thus major influences on them. Aakhus and Katz (2002) believe that today's youth use these items to make a statement about how they want to be perceived externally and help them project a desirable image to others, express social status and construct an identity with which they feel comfortable and accepted.

Michaela mentions that she learned to use a cellular telephone at school not through formal lessons but rather through socialising with her friends at break

time. She explains that 'It was a social thing though where at my school, you were said to be 'cool' if you had a cell phone'. This indicates that the social side of the school experience is another important factor in the teaching and learning process.

In support of this idea, I refer to Trend (1997) who suggests that young people's access to new technologies at home, at school, even at restaurants and shopping malls allows for their constant connectivity to the networked world. Trend describes them as being plugged into every possible outlet, one hundred percent of the time. This is partly because they want to be and partly because they feel the need to be. Being connected allows the youth to feel as though they fit in with their peers, are keeping up with the latest trends and are playing a participatory role in today's fast-paced, continually growing world of new technologies. As the youth use new technologies, they contribute to and make meaning of their youth culture and feel as though they are part of it. (Trend, 1997).

It is apparent from Kerry's description that the youth of today have become more dependent on digital technology for social purposes. Much of their communication for social purposes occurs via the Internet or through text messages. Tapscott (1998) suggests that N-Geners are very accepting of diversity because, for example, on the Internet nobody has to know your race, your physical appearance, how attractive you are or any other defining personality traits. Thus, on the Internet, there is virtually no prejudice. This makes it more appealing to insecure adolescents (Tapscott, 1998).

Street (1984) argues that literacy practices are dependent on the social contexts in which they occur. In the case of these students, who are at a private school and come from privileged homes, digital technology and

technological literacies (Lankshear and Knobel, 1997) seem to have become a necessity rather than an option. Being digitally literate empowers these students and allows them to be accepted in their school and social environment.

5.10. Broadening Social Horizons

> *Being digitally literate keeps me in touch with the latest news and has also made me more confident. It is much easier to confront someone using an sms and so I communicate with people which I would not normally communicate with via sms. Socially it has made me more popular. If I weren't digitally literate I honestly think my life would be totally different.*

In the above statement, Kerry asserts that digital literacy has enhanced her confidence and popularity and thus makes her socially acceptable. This suggests that the place of new technologies in young people's lives has made it easier for them to interact with others without having to leave their homes. These technologies have allowed individuals to communicate confidently across great distances (Judge, 1997). This is, however, not without its problems. In the above extract, Kerry uses the word 'confront' when she talks about smsing someone. Sending an sms does not actually entail 'confront[ing]' someone else and thus involves different social skills. This raises the issue of problems with social skills arising in N-Geners and could suggest that this type of communication may be causing the break-down of face-to-face communication and real-life relationships.

Flew (2002) suggests that with the range of digital technologies that are available to young people it is not surprising that 'individuals have taken to using the technologies with an inevitable twist, incorporating their own individual flair' (Flew, 2002:3). The cellular telephone, for example, has become a status-symbol and a statement of identity and social class. Cellular telephones can be

personalised, by means of ring tones, message tones, phone covers and phone type, to allow youths to announce to the world, 'who they are, what they like and how they perceive themselves' (Gordon, 2002:15). The same can be said of personal computers or MP3 players. Screensavers, carefully positioned icons, software, favourite links and games, covers and carrier bases reveal how a person wants to be perceived by others. Thus digital technology can be used as a fashion statement to help a person define him or herself and is strongly linked to identity formation, especially amongst the youth.

5.11. Appropriate social behaviour

This problem is explored by Tracey (2004), in her article about social protocol in relation to cellular telephones and the Internet. She believes that because many youths have access to mobile and other forms of digital technology at such an early age, there is significant potential for inappropriate social behaviour as a result. She explains that the youth are not sufficiently equipped with the knowledge of appropriate social behaviour in this area and, as a result, do not know how to use these technologies appropriately.

Aakhus and Katz (2002) similarly suggest that young people's social behaviour is often unsuitable and socially unacceptable. They maintain, 'when someone talks on the phone, he/she is in their own private place. Talking on the mobile phone in the presence of others lends itself to a certain social absence where there is little room for other social contacts' (Aakhus and Katz, 2002: 23).

Tracey describes the youth's preoccupation with digital technology as the 'always on', 'always reachable' phenomenon and suggests that as a result young users of digital technology do not know when it is appropriate to make and receive calls. She argues that for previous generations there were clear physical and social boundaries in terms of communicating with people.

However the use of mobile phones and the Internet have broken down those boundaries. As Davies, in Tracey (2003: 67) suggests, 'The electronic consumer becomes his or her own authority' and this has resulted in extensive unacceptable and even anti-social behaviour. This is something that Tracey believes cannot be curbed by parental guidance or governmental guidelines and is thus a threat to young people's social well-being.

This phenomenon is further exemplified by Michaela who believes that digital technology has taken away a lot of family time. She explains that

> I spend more time staring at a square screen than I do interacting with the people I love. This has become a habit now though and I do it without even realising it. I believe that digital literacy is now a part of our everyday lives. I feel lost if my cell phone battery dies where I am not near a charger. To a certain extent I feel it is a sickness. I mean even when we do sleep, our cell phones are right next to our bedsides. When we eat, our cell phones are on our laps as we anxiously wait for an sms from a friend

Here, Michaela shows an over-dependence on digital technology and this is an example of what Tracey (2003) suggests about the youth always being switched on and accessible. She is never without her cellular telephone, even when she eats or sleeps.

Tameez's perspective on the appropriateness of using a cellular telephone is an unconventional one for a sixteen-year-old girl. She believes that

> Not knowing when the appropriate time to phone or sms your friends is a problem. This is unsociable and rude, especially when someone uses their cell phone in class when a teacher is talking or at a social gathering. People who use their cell phones in class are rude and ignorant and that they are robbing themselves of learning. If a person uses their cell phone at a social gathering, they are acting anti-socially and being rude.

Tameez was the only one of the respondents who noted this inappropriate behaviour, which suggests that her view on this matter is not the norm amongst her peers. She recognises this behaviour as antisocial, rude and ignorant and

criticises her peers for not recognising this themselves. Tameez and Michaela show two very different perspectives: one of a teenager who is overly dependent on digital technology, so much so they she sometimes doesn't know when to use it appropriately and one of a teenager who recognises how socially unacceptable this type of behaviour can be.

5.12. The positive influence of digital technology on our lives

> *Computer programmes have helped me improve my Maths marks and the Internet helps me with research for school work, and also with my personal entertainment, such as downloading music.*
>
> Fumazi, Age 16

5.12.1. Communication

Most of the participants believe that digital technology is vital for communication. They believe that digital technology has enhanced their communication skills from smsing friends, to making friends online, to talking to friends and relatives overseas on programmes such as Skype and MSN. They all view these forms of communication in a positive light and as something that has enhanced and changed their lives for the better.

Moore (2000) suggests that digital technology is a part of everyday life and has been incorporated into many people's communication and interaction with others. Similarly, Caron and Caronia (2001:58) suggest that digital technology and mobile communication help sustain relational communications, 'the purpose of which is to preserve, express and confirm pre-existing social links'. They believe that the Internet, email and other such applications have had a great impact on the nature and frequency of interaction with others, particularly where the youth is concerned.

Communication nowadays is instant, simultaneous and means that distance is negated as contact with people living overseas is as immediate as proximate communication. Furthermore, time is no longer a hindrance to communication as digital technology means that people can be contacted at anytime of the day or night, anywhere in the world (Henderson and Guiding, 2004). Although face-to-face communication still exists, it cannot be disputed that forms of communication have changed dramatically since the advent of digital technology in our lives.

5.12.2. Entertainment

Some of the participants list entertainment amongst the positive influence of digital technology on their lives. Shaun says he 'enjoy[s] the pleasures that digital technology brings in the form of entertainment' and Fumazi uses the Internet for entertainment purposes to download music and play games.

Other participants listed, amongst others, using iPods, Facebook, MSN and Skype for entertainment purposes. The use of these devices and applications allows youths to find inspiration, use their imagination, communicate with peers and people around the world, meet people, and gain new experiences. N-Geners view the digital world, amongst other things, as a place of entertainment, play and fun (Tapscott, 1998). But these pleasures are not exclusively so – they come with unconstructive, unfavourable effects too. These negative effects will be discussed in section 5.13. of this chapter.

The digital history narratives also highlight how these Millennials function multimodally. As Warschauer (2006) suggests, they 'love music... select their music, creatively combine or package music, listen to music throughout the day, digitally edit their music, or integrate music in with other media' (Warschauer, 2006: 13). Fumazi, for example uses the

Internet to download music for entertainment purposes. Stephan also uses the multimodality of digital technology to communicate with friends and family worldwide. He explains that he 'can type conversations on programmes such as MSN* or even speak through the computer on Skype*[23] and see them on [his] screen'. His is a generation that makes use of various modes in their day-to-day lives.

5.12.3. The Simple Life

Although some of the participants discussed the negative influence of digital technology on their lives, most of them focused on the positive influence. JJ describes life with digital technology as 'easier' and Stephan describes the many communication opportunities that digital technology affords him. He also explains how 'correspondence from the school goes to [his] mother via email and so he no longer ha[s] to worry about losing it or forgetting to give it to her'. Stephan also believes that his reading has been 'enhanced by being able to use the computer' as he spends time on the Internet reading articles on sites such as wikipedia.com frequently, more so than he did before he had a computer.

Thandeka explains that she would not be able to complete most of her school projects if she didn't have Internet access at home. Although Thandeka uses the Internet for school projects, it is worth noting that she does so at home and not at school, even though she has access to the Internet there. This is important as it, once again, highlights the divide between in- and out-of-school practices of these participants and shows that their use of digital technology takes place, primarily, out-of-school, perhaps simply because they have more time at home.

[23] Refer to the glossary of terms for a definition of terms marked with an asterisk (*)

Kabo declares that he has 'technology to thank for most of [his] successes in the past'. He explains that computer programmes have helped him with school work and to become more socially acceptable.

Stephanie believes that being digitally literate has helped her a great deal at school as it allows her to complete work more quickly and easily and present her work more neatly and professionally. She states that her cellular telephone helps her 'exchange information with people'. Bryan's thoughts are similar to Stephanie's:

> *Being digitally literate offers great advantages to many aspects of my life. It offers a quick and effective means of performing everyday tasks that previously would have been time-consuming and monotonous. As a school student, being digitally literate allows for easy access to information for school tasks and projects.*

5.12.4. In Case of Emergency

One of the other uses of the cellular telephone that these participants identified is its use in emergency situations. Kate explains that she uses her cellular telephone to call her mother if she isn't on time to fetch her, or if she finishes at school early and Tameez explain that the most important use of her cellular telephone is 'for emergencies'.

Stephanie describes owning a cellular telephone as 'vital, especially in the case of an emergency'. Her choice of words here is significant. The word 'vital' suggests something that is essential and of the essence in her life and this is how many of the participants view their cellular telephones and other forms of digital technology.

Castells (1996) coined the term 'the network society' which describes the reinvention of social organisation through the development of information

technologies. It centres on information technology and operates in and with intangibles. For the N-Gen, an information rich society means an 'informed population, capable of self-expression and political and cultural participation through new technologies' (Hartley 2002:115). This suggests why so many of the participants in the study describe the many positive influences of digital technology in their lives.

5.13. The negative influence of digital technology on our lives

> *The youth of today are people who live through technology as they cannot survive without it. People are focused on succeeding in games rather than in real life.*
>
> JJ, Age 16

Although all of the participants discussed the positive influences of digital technology on their lives, only eight of them discussed the negatives.

Tapscott (1998) suggests that the interactivity and speed of digital technology has led the youth to expect immediacy in all that they do. This is confirmed by JJ and Fumazi's descriptions of the negative implications of digital technology. They both believe that digital technology has made them lazy. JJ further suggests that

> *The problem with digital technology is that it causes people to become lazy. It accounts for many of the writing, reading and spelling problems at school. People's reading skills are getting worse but writing problems are the most severe as people rely on their computers to correct their work, when this can't be done as computers don't know what context a person is writing in. Life with digital technology is easier but not better. Younger generations are losing their social skills and expect their computers to do all their work for them. There is less communication between peers.*

5.13.1. Academic skills and many Englishes

Stephan notes that his spelling has worsened due to his 'reliance on the computer's spell-check'. He states that he no longer tries to remember how to spell words but rather lets his computer do it for him. Paul also believes that if digital technology didn't exist, he would 'probably read more, [his] reading skills would be better, [he'd] be able to read faster and [his] comprehension and exam skills would improve'.

Stephanie believes that digital technology has affected her 'literacy skills, and [she] often finds [herself] writing and speaking in 'sms language', which affects [her] formal writing and presenting skills negatively'. She believes that her understanding of the English language is thus decreasing and she is becoming lazy and incapable of doing things she should be able to. Tameez states that 'using a cell phone has an effect on one's language as people no longer have the ability to write in good, solid and authentic English'. She says that she often writes 'wat' instead of 'what' in English writing.

Kress (2000) suggests that we have to rethink the centrality that written language has always had in Western society. This is due to the communication revolution that has taken place since the introduction of digital technologies in many people's lives. Along with the New London Group, he suggests that we need to look at Multiliteracies, rather than Literacy, and how these multiliteracies are constantly changing and being remade according to context and purpose.

The New London Group argue that English today is splitting into many and diverse Englishes, marked by different styles and origins. Today people communicate in various different Englishes, thus functioning not only multimodally but also multilinguistically. Thus the problem of 'weakening English

language' that Tameez and others identify in their interviews may not, in fact, be a problem. It could be argued that the sms language that they talk about is merely another newly developed form of English (Cope and Kalantzis, 2000).

Warschauer (2002) believes that the intention of schools and other such academic institutions is to teach students academic literacies, which, according to him, involves learning to argue, persuade and use sophisticated language. It is, according to Warschauer, up to teachers to use appropriate places on the Internet and appropriate forms of digital technology to enhance academic literacies. For example, he suggests having students informally discuss something that has come off the Internet and then write a more formal, sophisticated article that would appear on an online newspaper. This would involve incorporating digital technology in the classroom and teaching students to use appropriate language for specific situations. Thus he believes that 'you have to deploy the Internet towards your own pedagogical ends' (Warschauer, 2002). Furthermore Warschauer (2002) suggests that the language that students use online is merely another register, and what is important is not to discourage the use of these registers but rather encourage the appropriate use of different registers in different contexts.

5.13.2. An idle world

Stephan believes that because of digital technology, 'fewer people partake in strenuous physical activities and therefore more people in the population are becoming obese. Even people's postures are deteriorating as people spend most of their time stooped in front of their computers'. Paul supports Stephan's assertion and believes that he' would have been far more physically active if it weren't for digital technology. People get weaker and more overweight because they spend little time outdoors or in the gym'.

Frederman (2002) argues that this new world in which the youth exist allows them to become less physically active and removes them from the world of real social interaction. It may be that they become secluded and detached from the real world and from what is occurring in it. He argues that the virtual world of cellular telephones and online communication can lead to a disconnection from real world experiences and loss of the physical and bodily senses. This, in turn, may affect the development of interpersonal skills and individuals' personal identities, where the youth form 'electronic friendships' with computers instead of real friendships (Frederman, 2002). It can also become problematic as young people become dependent on, and even addicted to digital technology (Crawford, 2004).

5.13.3. Violence, addiction and the family structure

Stephanie and Kerry believe that television and video games are causing more violence in families and the community. Kerry thinks that 'there would be less environmental damage without digital technology and crime would decrease as there would be fewer things that people would want to steal. She says this is 'A frightening thought'. Similarly, Tameez believes that digital technology 'can pose health hazards such as cancer, through the use of a cell phone, and death, through greed of people wanting technological devices that they cannot afford'.

A recent incident in the United States of America illustrates the adverse affects that digital technology can have on families and communities. A couple in Reno, Nevada have been prosecuted for child neglect after leaving their 11- and 22-month-old children to starve and suffer from other health problems whilst they obsessively played video games. Patrick Killen of the Nevada Child Abuse Prevention said' 'It's easy for someone to get addicted to something and

neglect their children. Whether it's video games or meth, it's a serious issue and we need to become more aware of it' (www.foxnews.com; retrieved 1 August 2007). It is evident from this incident that digital technology can indeed lead to addiction and have detrimental effects on family life.

Kerry also believes that 'The money some people spend on technology can actually be ridiculous'. She explains that her cellular telephone bills have been very high in the past and she now tries to use her phone only when she really needs to. Furthermore, she believes that digital technology can 'sometimes be addictive' as she spends so much time using it, especially applications like Facebook[24].

An area for concern in relation to youth culture and new technologies is the growing dependency on technologies such as the Internet and cellular telephones. There is a real possibility that some young people are becoming addicted to or over-reliant on digital technology, in the form of Facebook and smsing, for example. Some other concerns around this issue are confusion between reality and virtual reality, the impact of digital technology on real world social relationships, communication and health. Furthermore, issues over privacy of Internet content and the unrestricted access that some youth are able to gain to certain sites on the Internet are of concern (Crawford, 2004). These negative aspects are suggested in the extracts from the narratives presented below.

Dependence on digital technology is obvious in Tameez's description of her cellular telephone, on which she is 'completely dependent' to keep her in touch with her friends. But Tameez also highlights a further negative aspect of the uses of digital technology. She believes that appropriateness and knowing when to

[24] Refer to the glossary of terms for a definition of terms marked with an asterisk (*)

use a cellular telephone and when not to have become a problem. She considers this to be 'unsociable and rude, especially when someone uses their cell phone in class when a teacher is talking or at a social gathering'. She further describes people who behave in this way as 'rude and ignorant' and suggests that they are 'robbing themselves of learning' and 'acting anti-socially'.

Michaela, on the other hand, uses her cellular telephone at any opportunity. She states that using a cellular telephone 'has become a normal, everyday thing that comes naturally like sleeping, eating etc'. Michaela describes her world as being consumed by her cellular telephone:

> *I mean even when we do sleep, our cell phones are right next to our bedsides. When we eat, our cell phones are on our laps as we anxiously wait for an sms from a friend.*

Michaela's dependence on her cellular telephone, so much so that it is never out of her sight, shows the extent of her dependence on digital technology.

Another negative effect of digital technology that Michaela suggests is that it has taken away from the time she spends with her family. She states that she spends 'more time staring at a square screen than interacting with the people'.

The introduction of digital technology into many people's lives has had a major effect on the individual and the family structure. The social organisation of the family has undergone notable changes since the introduction of new technologies into the home. The integration of digital technologies into many households has had an effect on family dynamics and communication. New technologies are often the cause of worsened communication amongst family members and the youth especially seem to be spending much of their time doing homework using digital technology and the rest of it downloading music,

chatting online, checking email and watching television or DVDs. This has resulted in a divide between themselves and their families, and has resulted in families who reside in the same house spending very little time communicating with one another (Meyrowitz, 1999: 202).

JJ offers a solution to these problems by suggesting 'you need to have a balance between the digital technologies and reality. Having the correct balance will make you a better person'.

5.14. Looking to the future

Some of the participants discussed the importance of technology in their futures. Thandeka and Kabo both want to use digital technology in their future careers. Kabo believes that he 'will definitely use digital technology in the future as it is important in terms of management and administration. A PDA can be used for arranging meetings and laptops and cell phones for mobile communication'.

Stephanie, too, sees the importance of digital technology in the future. She believes that 'all businesses, individuals and homes will be accessorised by computers in the future'. Bryan believes that 'in the business world, being digitally literate gives large advantages over competitors as stock takes, pricing and banking can be performed more efficiently and quickly'.

It is evident from these comments that these students view digital technology as vital to their futures.

5.15. Conclusion

In this chapter I have focused on describing and analysing the data gathered from participants in this study with reference to the question 'What are the in- and out-of-school digital literacy practices of a group of Grade 10 students at a private school in Johannesburg?

In essence, students' in-school digital literacy practices involve using digital literacy as a supplement to enhance their other literacy practices, while their out-of-school digital literacy practices are much more extensive and varied than their in-school practices. Their out-of-school practices include using digital technology for communication and entertainment purposes, and even to complete school projects at home. These practices are strongly tied to these students' identity formation and are an important part of what defines them. It is also clear that while students' lives are dominated by digital literacy out-of-school, this is not evident in school.

In the final chapter, I move to discuss the findings of my research in more detail and provide recommendations in response to the issues that have arisen from this study. These recommendations will be in answer to my third research question, 'What are the implications of these findings for English teaching in this school?'

CHAPTER 6:
FINDINGS AND RECOMMENDATIONS

6.1. Introduction

In the previous two chapters, I presented a description and analysis of data in response to my first two research questions, 'What access does the select group of Grade 10 students at a private school in Johannesburg have to digital technology, and how proficient do they consider themselves in its use?' and 'What are the in- and out-of-school digital literacy practices of the group of students?'.

This chapter is concerned with summarising the findings of my research in relation to the literature review and theoretical framework. I attempt to answer my third research question, 'What are the implications of these findings for English teaching in this school?'

6.2. Findings

The data gathered from participants' completed survey questionnaires suggests that they have liberal access to items such as cellular telephones, computers, iPods and games machines and they make constant use of these and of applications such as Skype, MSN and Facebook. Furthermore, digital technology is regarded as essential in these participants' lives. They feel that they would not be able to function without it.

It is apparent that these N-Geners are primarily concerned with their cellular telephones, which aside from performing the obvious function of a mobile

telephone, can also act as a computer, games machine, music player and digital camera.

These Millennials consider themselves to be adept in the use of digital technology and to have an excellent knowledge of items such as cellular telephones and personal computers, as well as the applications of these items. This shows that not only are they digitally literate and able to work with new forms of literacy, but also that they can engage with different literacies and modalities, often simultaneously.

What is also evident from the data is that participants generally use digital technology more for out-of-school practices than in-school practices. Their out of school practices include the use of cellular telephones, iPods and computers for social and entertainment purposes.

From the data analysed in Chapter 5 it became apparent that on the whole the participants have had digital technology around them for as far back as they can remember or from a very young age. Thus they have grown up with the pervading influence of digital technology around them, especially in their homes and social environments. Not only have they had digital technology around them for most of their lives but, for the most part, they also regard its presence in a very positive light.

These 'native' (Warschauer, 2006: 11) users of digital technology are innovative and self-sufficient when it comes to learning to use digital technology. Many of them taught themselves to use it or, if they were taught the basics at school or by family members, they extended their knowledge by experimenting and learning more from this experimentation.

It is apparent that it is important for these youths to be skilled in using digital technology so that they integrate well with their peer groups and society. Digital technology allows them to project a desirable image of themselves to and feel empowered amongst these groups. They are dependent on digital technology and function on a day-to-day basis using it. If they are not skilled in its use they fear and face being marginalised.

Although most of the participants in this study are digitally literate, there are those who still feel anxious at the thought of using some of its applications. These participants are very aware of the difference between their generation and that of their parents and teachers. They view the time in which their parents grew up as a time when digital technology was underdeveloped and unsophisticated. They also notice the way in which their parents and teachers struggle to use digital technology and integrate it into their lives, and are disbelieving and scornful of this. This 'lap generation' (Tapscott, 1998) view its predecessors as primitive in terms of their knowledge of and connectedness with digital technology.

Digital technology, for this generation, is strongly tied to identity. Using it enhances their self-confidence and status amongst their peers and makes them more socially acceptable. Digital technology has become, for these N-Geners, a status-symbol and is key to how they are received by the world around them. It is therefore a necessity, rather than an option, for them.

The negative effects of digital technology are also recognised by some of these participants. Some of them are aware that it has resulted in less physical activity amongst themselves and their peers, affected their physical conditions and can result in health issues such as obesity. There is less real social interaction as a result of digital technology, where the youth form electronic friendships and

spend much of their time interacting online or via their cellular telephones. There is also an awareness of the possibility of addiction and worsened family dynamics as a result of digital technology.

One of the research findings is that some of the participants believe that their use of English has changed. Some of them view the way they now use English language in negative terms, although the New London Group view changing language use as contributing to the many and diverse Englishes that make up the language. The participants described worsened spelling and grammar, less reading and poorer comprehension skills among the effects that digital technology has had on their language. The New London Group argues that new forms of English should be used appropriately rather than unlearned (New London Group, 1996).

Many of the participants in this study believe that they will, undoubtedly, use digital technology in their futures and future careers. They believe it is a necessity to be digitally literate and being so has, and will have, an all-pervading effect on their lives. I conclude this research report with some recommendations in response to findings from this study.

6.3. Recommendations

The findings of this study suggest some directions for the use of digital literacy in schools

The study of literacy, according to Gee (1988) requires the study of the social and cultural contexts in which the literacy is taking place. New technologies are expanding and therefore academic institutions, such as the school in which my research was conducted, need to facilitate technological advances to allow

students to expand their literacy practices and keep up-to-date with societal advancements in these areas. This study intended to establish whether or not this is occurring in the school which is the research site and to provide recommendations for future practices in the school. It is evident from the data analysis that digital technology in the research environment is not being used to its maximum potential. Although the school is relatively well-equipped with digital technology (in relation to the majority of South African schools), the teachers are not using it optimally in their classrooms and the school is not promoting its use as it should be.

According to Snyder (2002) schools have always, and still do play a vital role in establishing their students in the world, even beyond the school environment. With the changes associated with Multiliteracies, as discussed in Chapter 2, come changes that need to be implemented in schools in order for them to be successful in preparing their students for the future. Whereas previously it may have been the schools' responsibility to discipline and equip students with print literacy skills to function in the outside world, it is now the schools' responsibility to embrace the changes that are associated with multiliteracies. The schooling system needs to make use of the literacies that students bring to the classroom. This has to happen at all levels of the school and include changes in the school curricula. As Cope and Kalantzis (2000: 18) argue 'Curriculum now needs to mesh with different subjectivities, and with their attendant languages, discourses and registers, and use these as a resource for learning'.

Because of the predominance of multimodalities in the environment in which the research took place, their importance cannot be overlooked. Snyder (2001) discusses the challenges that exist for English teachers in this information age, filled with a 'labyrinth of material' (Snyder, 2001, p 4). It is the responsibility of the teacher to make meaning of this material and to give students knowledge and

skills so that they too can make meaning, and use this knowledge and these skills appropriately, in this multimodal world.

As an English teacher, I feel that I am in a privileged position to help students to develop these skills at a time in their lives when they are most responsive and receptive to digital technology. One of my goals is to help students to make use of digital technology in an appropriate way and in an appropriate context. In doing so, I hope that the result will be a group of mature and responsible students who are critically aware of their resources and privileged status in society and who will use their skills and resources to the benefit of all. This aim is in line with the policy documents such as the White Paper on e-Education (2004), which calls for a more technologically literate body of students in South Africa.

In order to achieve these aims, teachers need to be fully prepared and competent when it comes to using ICTs in their classrooms. But having access to digital technology is not, in itself, a solution to the problem of a lack of digital literacy. Young people need to be skilled in using digital technology and it is here that the teacher's role becomes vital. Teachers need to, themselves, be proficient in the use of digital technology and be able to use it to promote learning. For both teachers and students this knowledge includes being able to use digital technology appropriately in appropriate contexts.

Czerniewicz and Hodgkinson-Williams (2005) suggest that it is vital for modern-day educators to understand the types of digital literacies that students are bringing with them to the classroom and know what to do with these practices. This is essential if we, as educators, are to know what and how to teach the youth and 'better design appropriate educational interventions' (Czerniewicz and Hodgkinson-Williams 2005, p. x).

Students need to be able to know which skills to use in a particular context. As is evident from the data, many of these students see a problem with their use of the new English associated with digital technology. As the New London Group suggests, they need not eliminate these new uses from their lives but rather be taught to use this new English appropriately in the correct contexts. They need to make decisions about how best to communicate in a given environment (such as visually or verbally) and Snyder (2000) suggests that a very important role of the modern-day English teacher is to give students decision-making and meaning-making skills so they are able to function optimally.

Although Creative College is a well-resourced school in terms of digital technology such as computers, there is still a need to ensure that teachers are prepared for using digital technology in the classroom. Jonassen, Peck and Wilson (1999) propose that the focus on ICT needs to shift from learning about ICT to learning how to use ICT appropriately in the classroom. It is the teacher's responsibility to ensure that students are skilled in appropriate use of digital technology. The focus needs to shift from 'learning to use computers' to 'using computers to learn' (UNESCO/COL, 2004: 45).

According to the most recent South African curriculum statements, teachers are being encouraged to be more learner-centred and outcomes-based (Roos, 2005, p. 21). For this reason, teachers need to be able to integrate digital technology into the curriculum and set tasks that support appropriate use of digital technology.

UNESCO (2002) issued a report on ICT implementation and teacher development in schools, which sets out a four-stage continuum of ICT integration. The stages are 1. Emerging, 2. Applying, 3. Infusing and 4.

Transforming. As Creative College is already equipped with computers and other forms of digital technology, it has already met the requirements of stage 1 of this continuum and thus fits in to the second stage of the continuum: application. In the application stage, teachers become responsible for implementing tasks requiring ICT use in the learning environment. In the third stage of the continuum, ICT is infused across the school and curriculum and by stage four, the whole school has transformed and is using ICT as a normal and natural teaching practice. In this continuum, the teacher's role is vital and in order for Creative College to move through the next three stages of the continuum, the teachers need to be willing and able to assist.

Wiring schools and populating them with various forms of digital technology is necessary but not all that needs to be done in order to address these issues. In order for these students to benefit optimally from the digital revolution, they must not only be provided with appropriate software and services and also with the motivation to use it for learning. The education system also needs to be revised and redesigned in accordance with what the White Paper on e-education suggests and teachers need to be trained and reoriented so that their teaching aligns with their students' digital literacies. Digital technology cannot take the place of educational professionals but it is essential that they work with new technology in order to develop a generation who know how to use digital technology critically and appropriately for learning.

Snyder (1998) explores the use and misuse of electronic reading and writing and assesses the use of hypertext and its implications for instruction and learning. She indicates that although hypertext can be used to improve literacy in a changing instructional, technological world, it can also promote more traditional text study. Teachers who are not responsive to its use or trained to use it effectively in their teaching can also limit the potential of

hypertext. She maintains that, 'Hypertext will succeed or fail not by its own agency but by how people and institutions use it' (Snyder, 1998: 140).

According to Snyder (2002) schools have always, and still do play a vital role in establishing their students in the world, even beyond the school environment. With the changes associated with Multiliteracies, come changes that need to be implemented in schools in order for teachers to be successful in guiding their students' futures. Whereas previously it may have been the schools' responsibility to discipline and equip students with print literacy skills to function in the outside world, it is now the schools' responsibility to embrace the changes that are associated with multiliteracies. As Cope and Kalantzis (2000: 18) affirm, 'Curriculum now needs to mesh with different subjectivities, and with their attendant languages, discourses and registers, and use these as a resource for learning'. In other words, students and educators need to be able to function on a multimodal and multilinguistic level, and in this way will be the makers of change in this arena, where they actively absorb existing information and create new information (Street, 1998).

Tapscott (1998), as has been previously stated, suggests that educators need to increase their perceptions of literacy so that they include not only reading and writing but also include new literacy practices. They need to embrace developing forms of communication in order to equip their students with abilities that they can use in new communication contexts and technologies. He warns that if this does not occur, we are leaving our children in the hands of more unscrupulous individuals or companies such as advertisers who have their own agendas to communicate via these new forms of communication.

6.4. Conclusion

Analysis of the data from this research project suggests that the students at Creative College are increasingly digitally literate and they are likely to become more so. The school and its teachers thus cannot ignore the importance that digital technology has in their lives and teachers need to extend their own knowledge of digital technology, increase its use in the school for learning purposes and embrace the changes that come with digital technology and digital literacy. They also need to ensure that what is happening in the classroom meshes with what is happening in these students' out-of-school lives or they face losing their interest and allowing them to fall behind in an already rapidly-changing world.

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APPENDICES

Appendix A: Questionnaire

The following questions are intended to indicate the general digital literacy practices of Grade 10 students at Creative College. They will not affect your grade in any way, so please be honest, and as accurate as possible.

Section A

Please complete the following table in full

Age:	
Sex:	
Home Language:	
Primary School attended:	
School Subjects:	
Intended career after school and/or university:	

Section B:

Please tick the appropriate box:

1. I currently have the following:

Desktop computer	
Internet access at home	
Laptop computer	

Pocket PC (personal computer) or PDA (personal digital assistant)	
Flash disc	
Cellular phone	
iPod or other MP3 player	
Playstation or other games machine	
PSP (playstation portable)	
digital camera	
Television(s)	
CD player(s)	
DVD player(s)	
Other (please specify):	

2. **What are your first memories of using digital technology? (In your answer, you may want to explain when you first used digital technology, what it was that you used, where you used it etc)**

3. **Do you imagine that you will use digital technology in your future and if so, where and how?**

Please tick the statement that best applies to you for each of the following (3 – 9)

4. **How would you rate your usage knowledge of each of the following?**

	Excellent – I am proficient	**Good –** I am competent	**Average –** I can get by	**Fair –** I Have some knowledge thereof	**Poor –** I have little to no knowledge thereof.
The Internet					
Microsoft Word					
Microsoft Excel					
Microsoft PowerPoint					
Email					
Chat rooms					

Cellular Phone					
MP3 player					
Games machine					
Digital Camera					
Television					
CD player					
DVD player					

5. **If you make use of any of the following, please supply details regarding for what purpose you use it:**

The Internet	
Microsoft Word	
Microsoft Excel	
Microsoft PowerPoint	

Email	
Cellular Phone	
Digital Camera	

6. How important is each of the following in your life and why?

The Internet	
Microsoft Office	
Email	
Chat rooms	
Cellular Phone	
MP3 player	
Games machine	
Digital Camera	
Television	

CD player	
DVD player	

7. For what purpose do you use each of the following?

	Mostly for school work	Mostly for social purposes	For school and social purposes	I don't use this at all
The Internet				
Microsoft Office				
Email				
Chat rooms				
Cellular Phone				
MP3 player				
Games machine				
Digital Camera				
Television				
CD player				
DVD player				

8.1. How important is digital technology (as a whole) in your life?

Very Important – I can't live without it	Somewhat important but not vital	Not important at all

8.2. Please explain why you feel the way you do (in your answer to 8.1 above):

9.1. What is your most important piece of digital technology?

Cellular Phone	
MP3 player	
Games machine	
Digital Camera	
Television	
CD player	
DVD player	
Other (please specify):	
None (It is not very important to me):	

9.2. Please supply a reason for your answer in 9.1. above:

Any additional comments:

Thank you kindly for your time!

Appendix B : Instructions for Digital Literacy History

Dear Participant

A digital literacy history is a narrative of your ability and past experience with digital technology. It explores for how long you have been digitally literate, how you came to be digitally literate and from where your knowledge of all that is digital comes.

I would like you to produce a narrative of your own digital literacy history. It should be approximately two pages long and detail the following:

- What are your first memories of using digital technology?
- Who taught you to use digital technology?
- How did you learn to use digital technology?
- Did you learn to use digital technology predominantly at home or at school?
- How has being digitally literate affected your life (socially and at school) and do you think your life would be very different if you weren't digitally literate?
- Do you think being digitally literate has affected your literacy (reading and writing) practices?
- Any other concerns that you believe are relevant to a digital literacy history.

You may write your narrative neatly or type it. Please remember that all information contained in the narrative is strictly confidential and will not be shared with anyone who is not involved in the research.

Many thanks

Joanne Skudowitz

Appendix C: Interview Schedule

As the interview is a semi-structured interview, what follows is a rough interview schedule.

Interview Procedure:

1. Welcome and thanks to interviewees for attending.
2. Explanation of research project.
3. Read through Declaration of Consent with interviewees and provide explanations where necessary. Interviewees may ask any questions he/she may have.
4. Interviewees to sign consent forms.
5. Outline purpose of interview: to explore their feelings towards using digital technology, how they feel positioned in relation to their school and teachers' digital literacy and their feeling towards the implementation thereof in the classroom.
6. Check, query and expand upon questionnaire details.
7. Conduct interview.
8. Thank interviewees.

Example questions for semi-structured interviews:

Literacy

- What do you understand by the term literacy?
- What does it mean to be literate?
- Do you think literacy is important in this day and age? Why or why not?
- What do you believe is the most important literacy skill and why?
- Are there any downfalls to being literate? Elaborate please.

Digital Literacy Practices

- What do you understand by the term 'digital literacy'?
- Do you consider yourself to be 'digitally literate' and if so, how digitally literate? Elaborate please.
- How digitally literate do you believe your teachers are?
- Do you find that there is a gap between your own digital literacy and that of your teachers?
- Do you think digital literacy is important in this day and age? Why or why not?
- What do you think is the most important digital literacy skill and why?
- Are there any downfalls to being digitally literate? Elaborate please.
- Do you believe that the use of digital literacy in the English classroom needs to be addressed and if so how?
- What possible programmes would you suggest that could be incorporated into the English curriculum?
- Do you believe the school is doing enough to incorporate digital literacy into the classroom? Elaborate please.
- What kind of training would you recommend for learners in terms of digital literacy in the classroom?
- What kind of training would you recommend for teachers in terms of digital literacy in the classroom?