Teenage Technological Experts: Bourdieu and the Performance of Expertise

by


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Candidate’s Declaration

I certify that the thesis entitled

Teenage Technological Experts: Bourdieu and the Performance of Expertise

submitted for the degree of

Doctor of Philosophy

is the result of my own work and that where reference is made to the work of others, due acknowledgment is given.

I also certify that any material in the thesis which has been accepted for a degree or diploma by any university or institution is identified in the text.

Full Name...........................................................................................................................

Signed ....................................................................................................................................

Date.....................................................................................................................................
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Abstract

This thesis explores the construction of technological expertise amongst a heterogeneous group of New Zealand teenagers, specifically in regard to their home computer use, which for many of them is their primary site of leisure. This thesis explores the field in which these teenagers are positioned, and explains the practice constituting that field. In this field, the trajectories towards expertise are explained including the time, experimentation, and pleasure evident in their praxis.

The qualitative study involved observations and interviews with eight teenagers aged 13 – 17. Five boys and three girls participated and each attended one of various secondary schools located within a provincial city in New Zealand. All of the participants considered themselves to be technological experts, and their peers and/or their family supported this comprehension.

Drawing on Pierre Bourdieu’s socio-cultural theories, the capital (cultural, economic, social) and habitus of the teenagers are described (habitus being what makes them who they are, and continues to define who they are in the future). Chapter five centres on explaining the field the teenagers have positioned themselves in, namely the field of out-of-school leisure and home computer use. It also explores the construction and performance of technological expertise within the field.

Chapter six examines traditional views of schooling and expertise, and contrasts these views with what the teenagers think about their learning and expertise. This gap is specifically explained with regard to differences between the concepts and value of learning, expertise, and technology, and how they are recognised and valued differently between generations.

Chapter seven explores the praxis that the participants exhibit, which is arguably misrecognized by those whose interests are in the established order (e.g. institutional, societal structures). The field they are placed in is arguably part of the broader field of education, yet the findings suggest their capital is misrecognized by digital newcomers, and therefore not legitimated.
This thesis concludes that the gap between teenager and adult understandings of expertise is exacerbated in the digital world in which the teenagers position themselves. Their schooling is mainly positioned in the print culture of previous generations and consequently, in the lives of these teenagers, schooling has had little influence on the development of their technological expertise. Additionally, gender has had little impact in their development of expertise; therefore stereotypical notions of female underachievement as computer experts are contested.
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1.0 Introduction

The gaze is not a simple universal and abstract power to objectify, as Sartre maintained: it is a symbolic power whose efficacy depends on the relative position of the perceiver and the perceived and on the degree to which the schemes of perception and appreciation that are brought into play are known and recognized by the person to whom they are applied (Bourdieu, 2001, p. 65).

Although contemporary education literature regularly gestures towards the fact of teenagers' (and children's) ever increasing technological competency, there appears to be little research focused on the ways in which teenagers themselves conceptualise the idea of expert performance and the multiple ways in which they acquire expert status.

Drawing on Pierre Bourdieu's theory of practice, this thesis outlines research focused on a heterogeneous group of teenagers in semi-urban New Zealand settings and identifies the participants' multiple (and contradictory) understandings of expertise and the ways they have attained expertise and performed as experts in out-of-school settings. Discussion focuses on how most of the teenagers gained their expertise independently with minimal input from their current schooling experiences.

This thesis examines the ways in which more detailed and richer understandings of how students position themselves as ‘experts’ in the digital age can influence institutional responses to changed and changing student groups. In the latter chapters, ‘acts of resistance’ are identified which could effect social change. In seeking to develop this more robust understanding of teenage expertise, I am moving beyond traditional accounts of both expertise and technological expertise, particularly where such accounts either overplay or downplay the role of gender.

Whilst many others research about the nexus between gender, teenagers, technology and various combinations thereof, for the most part they are studying the presence of expertise in boys, and the absence (perceived or real) of expertise in girls. This results in the problem being defined in terms of the differences between boys and girls, and solutions being conceptualised in terms of how to fix this ‘problem’ with girls. This thesis takes a different stand, and seeks, instead, to understand what expertise might look like, and then to trace how those who have it have developed it.
So, instead of starting with an absence of expertise, I begin with the presence of expertise, and conduct, as a result, a fundamentally different study. I use the framework of Bourdieu to map the habitus and dispositions of teenage technological experts—boys and girls—and the trajectories that brought them to their status. As a result, I focus on the multiplicity of experiences and expert performances, which goes beyond that ‘boys are like this and girls are like this’ kinds of analyses that are common.

In focusing on the participants’ trajectories towards expertise, therefore, it is obviously necessary to acknowledge the impact of gender, class and age on the pathways the individual participants in the research followed. But rather than positioning gender as the all determining signifier, I focus on the ways in which gender itself is performed multiply by the girls and boys in this study and demonstrate the way that their understanding of expertise is similarly multiple.

Clearly, concepts such as gender impact directly upon how people think about themselves, how they undertake their work/how they live their lives, and the kinds of opportunities that are presented to them as natural or normal or desirable. This means that ‘scientific’ accounts or objective investigations of expertise which emphasise motivation, for instance, will be able to account only partially for the development of computer expertise, for motivation is arguably connected to factors such as identity and pleasure and these, in turn, are fundamentally tied back to questions of gender, race and class.

A key point I make is that gender makes a difference but the difference it makes is different depending upon where and when and how it is performed. So, whilst gender and expert performance are fundamentally interconnected, this interconnection manifests itself in lots of different ways.

1.1 Background to the research
One of the purposes of this thesis was to focus on the development of robust understandings of what expertise means in settings of youth culture and leisure. I did this by looking at what was occurring in non-school settings, seeking to identify and inform the constructions of what some teenagers consider to be expert use of technology.
Through focusing on the understandings of what expertise means in settings of youth culture and leisure, this study suggests that dominant or traditional definitions of expertise (and the habits/dispositions they assume) might not be adequate for making sense of how today’s teenagers conceptualise their own computer practices.

I highlight how teenagers have become computer experts in their out-of-school sites of leisure, and add this space to help visualize the rich picture of youth culture in this day and age. This thesis argues that traditional goals of curriculum and schooling, established in the nascent stage of the former print culture, do not cater for the students who are currently positioned in the digital, global culture or space of today (Goodson, Knobel, Lankshear & Mangan, 2002). It is not an aim of this study to suggest specific changes to schooling.

In a study I conducted in 2003, I observed two senior primary classrooms and collated questionnaire results from some of the children in these classrooms. That study found few differences between girls’ and boys’ use of computers. However, perceptions of computer expertise were gendered (Johnson, 2004a). Although overall students reported that neither gender was better at using computers (Yelland, 1992 cited in Yelland, 2002), those students considered to be the computer experts within each class were boys. The students in these classrooms did not believe there was any gender difference in terms of ability and proficiency at using the computer. I observed that girls were more likely to watch the computer screen while boys took over the use of the mouse in their role as an ‘expert’ (Johnson, 2004a). This study suggested that girls may be on a par with boys in their comfort, use of, and positive attitude towards computers, but that gendered patterns still exist in practice and in the social construction of boys’ and girls’ identities as learners and as computer users. These findings led me to want to study this area in greater detail, focusing on how computer use might be or remain gendered, and how the position of ‘expertise’ is constructed and understood within society.

It was beyond the scope of this thesis to address the relations between equality and expertise – that is, what perceptions construct equality, compared to how perceptions of expertise are constructed. What I was able to focus on was how expertise was understood, and how the participants understood it to be developed. By exploring
the trajectories towards expertise, I was able to identify gendered issues, though it was not the sole purpose of the thesis.

1.2 Positioning of the Study

The position of this study stems from my orientation as a researcher drawing on the critical and sociological resources provided by Pierre Bourdieu and a range of feminist theorists who work with Bourdieu’s conceptual tools. As outlined above, this thesis is focused on issues associated with technology, expertise, teenagers, and by extension, issues of gender. As a result, the thesis contributes to a broad literature focused on each of these areas, and their interconnections. Notwithstanding, it is important to conclude that in regard to the positioning of this study that this thesis is first and foremost Bourdieuian. The thesis employs feminist traditions and resources to extend Bourdieu’s concepts, yet remains positioned within Bourdieu’s critical tradition. This thesis will contribute to anti-essentialist understandings of technology and expertise and thus address broadly sociological questions concerning the construction, performance and understandings of expertise found amongst a diverse group of New Zealand teenagers. My belief is that schooling, technology as a curriculum area (including information and communication technologies, hereafter ICT), and social constructs of technology need to change in order to meet better the needs of contemporary students.

A key difference between my study and the following studies is that while they differ about the source of the problem (and thus the nature of potential solutions) they all seem to start with the assumption that there is some kind of problem relating to girls and ICT and focus on understanding the absence of expertise. This thesis takes a distinctive approach in that is does not begin with assumptions about the existence of a problem, that is, a lack of expertise, but rather seeks to understand the performance of expertise where it does exist.

A brief overview of the types of approaches that have been taken to study this field is now given to provide a framework for the positioning of this study. Whilst the literature itself will be reviewed in the following chapter, here it is important to position this thesis in relation to the dominant approaches to understanding the combination of terms at the heart of this study – that is, girls, technology, and expertise. Over the last three decades, there have been many different approaches
towards the study of computer use. I have grouped these studies, according to the various conclusions made, into the broad categories of girls needing to change, social constructs of technology needing to change, and school and information technology (as a curriculum area) needing to change. I include these following sections in order to provide background reading that demonstrates how I came to the point of devising the research questions and the research project of this study. I now briefly discuss each one of these areas in turn.

1.2.1 Girls need to change
There are many studies that detail different computer use between genders (Aman, 1992; Chaika, 1995; Kafai, 1998; Mitra, LaFrance & McCullough, 2001; Mitra, Lenzmeier, Steffensmeier, Avon, Qu & Hazen, 2000; Whitley, 1997), in attitudes towards computers (Busch, 1997; Crombie & Armstrong, 1999; Kadijevich, 2000; Whitley, 1997) and in behaviour regarding computers (Brosnan, 1998; Lawrence, 1984; Nelson & Cooper, 1997). These studies tend to position girls as in some way ‘lacking’, and generally suggest that if society is to be equitable then girls need to change so that they are the same as boys with regard to computer usage. This approach highlights the fact that, with regard to computer use, females are not as positive about computer use, do not have as much experience with computers, do not have as much self-efficacy as males, are not as computer literate as males, and need to change in order to be computer literate in current and future society (Ray, 2004).

Some other recent studies have found little or no difference between genders in this area (Adrianson, 2001; Woodrow, 1994). In fact, a recent quantitative study of grades seven, nine, and eleven students’ computer anxiety, conducted in Tasmania, found that males were more anxious than females about using computers (King, Bond & Blandford, 2002).

In this framework the ‘problem’ is represented as girls’ lack of ability, and the solution is remedial, that is, ‘topping them up’ with the skills that they need to be the ‘same’ as boys (with the differences amongst boys elided in the process).

1.2.2 Social constructs of technology need to change
Another approach argues that computing as a masculine domain marginalizes females and positions white, middle-class males as powerful (Millar, 1998; Sofia,
1993). This approach critiques the gendered nature of technology (de Castell & Bryson, 1998; Green, 2001; Littleton & Hoyes, 2002) and argues that this hegemonic digital discourse (Millar, 1998) needs to be subverted and challenged. This approach also envelopes cyber-feminist approaches, which profess that women can stand on an equal ground in cyberspace owing to the anonymity found on the World Wide Web (Spender, 1995). This category is fairly broad and includes various types of studies. However, some of the contexts in which these research studies were conducted have changed and a more nuanced understanding has developed.

Literature has long demonstrated the historical association of computers with masculinity. More specifically, computer use has been associated with male “geeks” and “techno-wizards” – identity types that are unattractive to females (Morritt, 1997; Turkle, 1988), and more acceptable to males. Since consumerism and advertising found in popular culture advocate that females be attractive to males (Bartky, 1996), very few females desire to achieve geek status (Chandler-Olcott & Mahar, 2003; Turkle, 1984; Woodfield, 2000). Martin (1992) and Clarke (1992) argued that the world of computing, along with educational software, computer games and the computer science curriculum, are designed from a male perspective (Edwards, 1992; Huff, Fleming & Cooper, 1992). Inkpen (1997) and Wegerif and Scrimshaw (1997) claimed gender-based expectations were reflected in the designs of interfaces and presentation.

Green (2001) discussed how some technological artefacts are marketed as ‘leisure goods’, yet implied that, as technology is gendered, women’s practices of leisure do not tend to include technologies because they tend to be aligned with masculine culture. She claimed that, “leisure is highly gendered and that women’s opportunities for leisure are constrained by geographies of space and time” (Green, 2001, p. 183). Green argued that these factors restrict women’s leisure opportunities, especially with regard to computer usage. If females view the computer only as a tool of productivity, Green (2001) believed they were unlikely to wish to use it for leisure as well.

Green also suggested that how and where computers are introduced into everyday life within the home can lead to the gendering of these particular artefacts (Beavis, 2004). For example, if a home computer is placed within the study or office of the
home, the technology is perceived differently compared to if it was placed in a comfortable living space of the home where the technology can become a familiar part of everyday life. As an office or study is designated as an area for work, then the home PC is likely also to be considered as a tool for work, further increasing the symbolic boundary within the household. As a living area within the home is designated as a space for relaxation, activities associated with the computer can therefore be considered leisurely, or can be more aligned with leisure. To sum up, Green (2001) believed that “for an object or a technology to be accepted, it has to be found a space and assume a function” (p. 175). Therefore, if the computer becomes part of the everyday leisure of a household, it may be accepted as part of the intersections between “technology, personal consumption and the construction of identity” (p. 174). This is supported by Stepulevage (1999), who stated “everyday experiences serve as sites for constituting our relations with ICTs” (p. 63). Through everyday experiences with ICTs, the construction of identity in relation to technology can be negotiated (Green, 2001), and these practices can be aligned with women’s leisure. So the problem of the literature in this section is the way computing is represented as an activity or a practice.

1.2.3 School and information technology need to change

The third approach that I have categorized is based mainly on qualitative research, which looks at the so called big picture, including how computers are used in schools (Cuthell, 2002; Lynch, 2001; Wegerif & Scrimshaw, 1997), and in homes (Downes, 1999; 2002b; Facer, Furlong, Furlong & Sutherland, 2003), and how technology, including computer-based technologies, can be integrated effectively into classroom programs (Bigum, 2002; Lynch, 2001, 2002). Some research within this category suggests that computer science has been aligned with mathematics and science, traditionally viewed as masculine subjects (Lynch, Leder & Forgasz, 2001). Not all of these studies focus on issues regarding gender, but they tend to agree that technology and education need to change (Bigum, 2002; Downes, 2002a, 2002b; Facer et al., 2003; Lynch, 2002) so that they appeal to a broader range of learners.

Stepuvelage (2001) claimed that research has shown that information technology is still perceived as a masculine domain and that classroom practice within this discipline remains dominated by men and boys. From their study of 30 Canadian schools, Jenson and Rose (2003) found that female teachers in the position of ICT
specialists were not considered to be technology users despite their actual level of ICT expertise. This could lead to the perpetuation of the minimal involvement of females in technological fields (Lander & Adam, 1997; Martin & Murchie-Beyma, 1992; Rowan, Knobel, Bigum & Lankshear, 2002), especially if males are perceived as being the computer experts (de Castell & Bryson, 1998; Downes, 2002a; Johnson, 2004a).

In a study of female secondary school students, Selby (1995) found that girls do not see working with computers as an actual career option in New Zealand, and therefore may not take computer courses in secondary or tertiary education (Chalmers & Price, 2000). One could suggest from this that educating females about the possibilities of working with computers may be crucial so they have equal opportunities with men in computer-based careers, rather than suggesting that they merely need to learn to like and play computer games. As Bullen and Kenway (2002) claimed, many girls do not know what information technology (hereafter IT) professionals do, and if they do their understanding of IT is that it is dull and boring. As more males are represented in this field (Lander & Adam, 1997; Martin & Murchie-Beyma, 1992; Rowan et al., 2002), it seems possible to suggest that boys know more about what IT professionals do as it is the boys who choose to enter these fields.

So in this literature the problem is multiple; it is connected to what is done with computers in schools and what is taught about computers in schools. The gap between what girls are ‘interested’ in and what boys are interested in appears exacerbated by the dominant discourses of school based curriculum and pedagogy.

Underpinning all three of these approaches is that the dominant discourse regarding the use of computers appears to be heavily associated with issues of power. The power relations exhibited by agents within society reflect the values of a field (Webb, Schirato & Danaher, 2002), which in this case is a digital discourse (Millar, 1998) – the association of power with hegemonic, white, powerful masculinity that focuses on the attainment of the latest technologies. As identified in Pierre Bourdieu’s theories (Bourdieu, 1990, 1991, 1998, 1999; Bourdieu & Wacquant, 1992), intersections of habitus and capital (economic, cultural and social) generate the practice found in fields. The field that I am referring to is the cultural practices found around the expert use of technology in non-school settings.
Whilst much of the literature seems to agree that females can be competent users but tend not to be competent users (where competence is defined in fairly specific ways associated with lots of computer usage, lots of time, a certain kind of self-description, etc.), many researchers focus much of their energy on trying to understand the absence of girls’ interest and the absence of their expertise. This thesis will make a contribution to debates in this area by exploring how some self-identified experts conceptualise their ‘development’ and how they are perceived. This will illuminate the presence of and the trajectories to expertise displayed by a range of students in order to gain a better understanding, not only of traditional notions of computer expertise, but also of what expertise can look like in the first place within the gendered context of technology (de Castell & Bryson, 1998; Green, 2001; Littleton & Hoyes, 2002) and schooling.

This thesis fills a gap that exists in terms of what we do and do not know about how expertise is developed. That is, it goes beyond the kind of common sense, immersion arguments – that is, children become technological experts because they are immersed or live in a technological world—towards more robust mappings of how expertise can be developed (and performed) in quite different ways: ways, moreover, which may not match up to pre-existing adult conceptions of what expertise looks like, how it shapes day to day activities and how it is understood by teenagers themselves. A key goal of this thesis is to contribute to anti-essentialist understandings of technological expertise, and by extension anti-essentialist understandings of technology, gender and computing.

Throughout this text, I explain how I have ‘gazed’ at the participants using Bourdieu’s theory of practice:

The gaze is not a simple universal and abstract power to objectify, as Sartre maintained: it is a symbolic power whose efficacy depends on the relative position of the perceiver and the perceived and on the degree to which the schemes of perception and appreciation that are brought into play are known and recognized by the person to whom they are applied (Bourdieu, 2001, p. 65).

I seek to investigate how the participants are known and recognized from my subjective gaze, and how their understanding of the structures in their lives has made them who they are now and who they will be in the future.
1.3 Organization of the thesis
The background to the research and the positioning of this study led to the construction of the following research questions, in order to guide and focus the research project:

1. In the field of out-of-school leisure, how is expertise obtained, constructed and performed by a group of New Zealand teenagers?
2. How does the habitus of this group challenge and/or agree with traditional/adult notions of expertise?
3. In what ways is the teenagers’ cultural and social capital recognized and valued at home and at school?

These three research questions are linked and integrated through the use of Bourdieu’s theory of practice with particular use of the concepts field, habitus, and capital.

After this chapter, a substantial literature review explores the literature in the interdisciplinary fields in which the study is positioned. The literature review comprises discussion of computers within society, and then focuses on how technology, computing and games within society are gendered. Literature concerning the notion of generations is introduced, and questions are raised about how psychological approaches depict expertise. The gaps and limitations of the literature are identified to demonstrate how this study makes contributions to knowledge.

The theoretical paradigm and methodology are discussed in chapter three, which explains my ontology, epistemology, Pierre Bourdieu’s theory of practice and why notions of feminism are also included within this text. Chapter four explains the research design and methods utilized as a result of incorporating Bourdieuan and feminist thought. Both the data collection methods and data analysis methods are detailed. Delineation of the study and field is explained, and the eight participants are introduced.

Chapters five, six, and seven present the data thematically, and each focuses on the research questions respectively. Chapter five explains and demarcates the type of teenager technological expertise on which the research focuses and the field of home
computer use for leisure. It outlines the type of practice that occurs in the field and the capital that is valued in the field. Chapter five also explores the multiplicity evident in the participants’ understanding and attainment of expertise. Chapter six discusses the habitus (dispositions) prevalent in this field, and raises gendered issues that have influenced the participants’ trajectories towards expertise. The idea that the participants are addicted to their computers is explored. The chapter highlights how practice in the field is conceptualised differently by digital insiders and digital newcomers (Goodson et al., 2002). Chapter seven focuses on how the participants learn and how they view learning, engages with ideas concerning the performance of school and argues that the participants’ practice is misrecognized.

A conclusion chapter (eight) summarises the thesis and offers implications for further research.
2.0 Literature Review

The particular strength of the masculine sociodicy comes from the fact that it combines and condenses two operations: it legitimates a relationship of domination by embedding it in a biological nature that is itself a naturalized social construction (Bourdieu, 2001, p. 23).

This chapter provides an overview of the types of literature that have informed the direction of the study. It explains dominant takes on computers, generations, and expertise that I argue do not attend to the sociological questions around how expertise is understood and performed. It is this gap that this thesis will address.

There are five sections comprising this literature review: computers within society, the gendering of technology, computing and games, generational changes, and expertise. The recurring theme for this chapter is essentialism in that the literature around the following key words — gender, technology, expertise, and generation — tends to define those terms in essentialist ways: that is to say, assigning them certain ‘natural’ and ‘logical’ meanings. This thesis contributes to anti-essentialist literature and does so by identifying, not what the participants in this study cannot do, but rather what they can do in order, not to know, or define, any of the terms absolutely, but to put forward particular ways of looking at the phenomenon of teenage technological experts. It should also be acknowledged that the terms ‘adult’ and ‘teenager’ – commonly used throughout this thesis – are heterogeneous, in that they are diverse in character and contestable.

I am aware that many of the terms and the sections of the literature overlap, so there will be some parts where similar themes are found in different strands of the literature. I have separated them out to maximise the opportunity to demonstrate my understanding of how different fields generally arrive at some similar conclusions regarding the impact of gender on computing use, on technological use, and on expert performance.

At the end of each section, I suggest some limitations of the literature from a sociological and critical viewpoint. The literature review is written from a broadly feminist position that recognises the impact of gender in society, in relationships, and with regard to power constructs.
2.1 Computers within society

This section discusses the vast literature relating to computing in society and, more specifically, the way this literature has worked to draw attention to the relations of power that individuals negotiate as a result of the widespread use of computers within society. I summarise what others have written about sociological aspects of the development of technology, specifically the nexus among technology, power and knowledge. When I use the term ‘society’, I am referring to those (over) developed countries where computer usage is common in workplaces and at home.

In a discussion of poststructuralist and Marxist perspectives of technologies in respect to South Korea, Yoon (1996) argued that popular public discourse advocated that individuals and institutions (both public and private) should “adopt and learn about computers in order to take advantage of convenient services and to modernize their life styles” (p. 171). This discourse positions people as passive, in that they take up technologies because they have been ‘told to’ but, as Yoon (1996) explained, there are stronger influences as arguably technology and power are so interrelated that “one can detect the presence of technological power even when people voluntarily use and enjoy the benefits of technology” (p. 177). Therefore, as humans engage in the everyday use of technology, they also engage in the power associated with that technology, whether consciously or subconsciously. Yoon (1996) argued that this was because technology, power and knowledge were intertwined:

Technology is normalized in everyday life, including the workplace, home and public places, to the extent that it has become a part of one’s life style and thinking process. But as part of life style and thought, technology thus shapes what counts as “knowledge” in a society. In turn, this “knowledge” plays an important role in consolidating power in the contemporary technological society. Thus, knowledge and power are so closely connected to one another that these two cannot be discussed separately (p. 176).

In his discussion of the media theory of Jean-Francois Lyotard, Gane’s (2003) argument was similar in that he believed that the reduction of knowledge to information and from information to bits through the computerization of society meant that knowledge was becoming a commodity, sped up and rationalized by capitalist culture.
A Marxist perspective, described by Yoon (1996), views that technological development as aligned with maintaining social and economic inequality, and that the value of communication technologies increases the divide between the rich and the poor. Yoon cited this was because modern technologies favour those in power and those with business interests, though s/he claimed Marxism was limited in being able to explain complex social phenomena, with its focus on class conflict. Nevertheless, this position does illuminate the fact that, as not everyone will benefit from computers (Bromley, 1998), there are those who benefit financially and powerfully from computer use within society.

Yoon (1996) aligned her/himself with the Foucauldian premise that, as power is dispersed discursively in everyday life, the human engagement with technologies in everyday practice reflects the interests defined by power/knowledge/technology. As the dispersion of power is channelled through discourse (Clegg, 2001), discourse is reproduced by individuals’ engagement with the construction of technology in their everyday lives: “Discourse reveals the process by which technology is materialized through human practice” (p. 177). Bromley (1998) reiterated this by stating that computers were part of the construction and use of power.

The relationships among computing, gender and education connect to the broader political economy (Clegg, 2001) and the socio-cultural contexts of everyday life within society. Clegg made the claim that, in order to understand the impact of computers on society and identity, we cannot solely focus on the classroom as a site of learning as the classroom is not the only site for learning in contemporary society. As I have alluded to the literature associated with the nexus between computers in society and power, I now summarise some literature surrounding computer use in the home.

### 2.1.1 Computers in the home

In a national sample study of Australian schools and students, Meredyth, Russell, Blackwood, Thomas, and Wise (1999) argued that there were two levels of information technology skills – basic and advanced. Children were most likely to learn basic skills at home, rather than at school yet, if girls did not learn advanced skills at home, then it was likely they never would, as many advanced computer skills were not taught in schools. This suggests that the home computer is an
important part of a person’s development in becoming technologically literate. In fact, Meredyth *et al.* (1999) suggested that the use of a home computer and one’s construction of identity in relation to a computer are more important than the use of a school computer. The study identified basic information technology skills including using a mouse, turning on a computer, using a keyboard, quitting a program, saving documents, printing, opening programs, deleting files, accessing CD-ROMs, and creating new documents. The majority of students who had these basic skills had developed them at home. The study also found there was a significant link among students' information technology skills, confidence and enjoyment, their use of computers outside school, the level of resources in their homes, and their personal ownership of resources. The more technologically rich the home environment is, the more opportunity students have for using computers and other related technologies, and the better students tend to be doing in developing information technology skills (p. xxviii). These findings have implications for both gender and class.

Toni Downes (1999, 2002a, 2002b) explored children’s use of computers in the home, especially in the broader context of families. Downes reported that adult family members who were computer literate had an important impact on children in their care, through obtaining a computer for their use, showing them how to use computers, and thereby scaffolding and developing their use. Downes (2002a) found that the experts at home were usually males (either brothers or fathers) and the least involved in the use of a family computer were females (either sisters or mothers).

Downes (2002a) also reported that children’s discourses reflected their interest in digital media, in comparison to print. One aspect of this was the increased productivity, for example, the use of word processors to make tasks easier and quicker. This study took the approach of ‘listening’ to children to describe what they did with computers in their homes, with an emphasis placed on children as capable informants about issues that affect their lives (Downes, 2002a). Through interviews, it was found that children enjoyed the fact that computers enabled them to be entertained, and parents claimed that computers were beneficial, as they seemed to enhance motivation towards children’s schoolwork.

In a three-year study of over 500 children, Downes (2002b) discussed the use of computers as a tool, a toy, and a playable tool. While computers were viewed by
parents as productive tools for future uses (such as careers, education, personal productivity) for both boys and girls, playing games – or using the computer as a form of entertainment – was viewed by children as beneficial because games were perceived not only to increase skill in computing, but also to support practice in goal-setting and the development of strategies for learning. Both parents and children agreed on the co-existence of computer as ‘toy’ and as ‘tool’. All the families in the study had rules governing the use of the computer, one which included giving work (school) activities priority access over leisure activities. As girls preferred to use the computer for work activities rather than play, this fitted with parents’ priorities.

Downes (1999, 2002a, 2002b) argued that educators need to understand how computers are used in homes because of two reasons: firstly, the trend exhibits greater use and increased access continuing throughout wider society, and secondly, those children who have been exposed to computers in the home since pre-school bring different orientations to and preferences for learning, perhaps in opposition to traditional texts, teaching and learning strategies that are still evident in today’s classrooms – the same texts, teaching and learning strategies of 50 years ago. Downes (2002a, 2002b) suggested that for the children who live in developed countries, the familiarity they have with computers might influence the way they approach learning at school and how they approach learning outside of school. Downes (2002b) claimed that home computer use has blurred the “processes of play, practice and performance” (p. 21), and therefore is in stark contrast to the pedagogy currently supporting computer use within schools. Conventional pedagogy separates knowledge into curriculum subjects, positions the teacher as the director of learning, emphasizes the step-by-step mastery of content, and the structure of the school day reflects clear distinctions between work and play (Lynch, 2001, 2002). Downes (2002a, 2002b) suggested teaching pedagogy needs to change to combine digital and traditional modes of learning which take into account the influence that computer use has had on wider society, and therefore on children’s preferred mode of learning and preferred engagement with computers. These preferences are brought to schooling environments (Johnson & Lynch, 2004). These studies conducted by Downes have implications for schooling and how formal education might cater to children who prefer, are used to, and are motivated to learn through digital and electronic media and to take advantage of and extend emerging literacies and orientations to knowledge and to learning.
Now I turn to reviewing other research surrounding computer use in the home conducted by researchers other than Downes. From a six-year longitudinal study of some 1800 students in the United Kingdom, Cuthell (2002) claimed “the ways in which those people with computers learn how to use them have shaped their assumptions and expectations of what it is to learn. They are less likely to accept conventional pedagogical approaches as appropriate to them” (p. 2). Cuthell stated that those students with a home computer tended to prefer to use their home computer as the predominant place for their work output because of having more available time (no teacher directed time limit), not having to compete with other class members for limited resources, feeling more in control of their work, and feeling in control of the configuration (settings) of their computer. Cuthell found that the site of production for their work had moved from the school to the home. In his survey of 199 middle school students, Kirkman (1993) found that home computer use formed a significant part of one’s attitude towards and experience of computers.

Brunner, Bennett, and Honey (1998) conducted a study of 47 preadolescent boys and girls, and asked each child to plan a fantasy machine, from which the researchers analysed the machine designs and the functions and features they had. They found that boys typically created vehicles with many technical details that could transport them instantly to desired locations, compared to girls who mostly invented machines that were either improvements to existing technologies, or human-like household helpers. Summarizing the implications for research, they stated:

Women and girls are much more likely to be concerned with how new technologies can fit into the social and environmental surroundings, whereas men are much more likely to be preoccupied with doing things faster, more powerfully, and more efficiently regardless of social and environmental consequences (Brunner et al., 1998, p. 177).

This study demonstrates how girls view computers predominantly as a tool for work, which supports the studies cited earlier (Huff et al., 1992; Morritt, 1997; Turkle, 1988; Yates & Littleton, 1999). As males tend to view the computer as a form of leisure, there will be obvious differences in the use of and attitudes towards computers between males and females. This relates to Green’s (2001) discussion about women’s practices of leisure in comparison to a masculine culture of leisure, referred to in chapter one.
These research studies point towards the need to ask questions about addressing inequalities that surround ‘not having’ computers and associated technologies and confront the implied consequence that, if one does not have a home computer, one is under-privileged. Furthermore, as technological efficacy could be considered another identity category (Johnson, 2004b, 2005), the owning and using of a computer may empower individuals to move upwards in class, therefore enhancing social mobility within society – a concept worth exploring.

The above sections influenced the direction of my study as it has made a number of significant points relating to class and wealth and privilege, the advent of technology in society, and that children are advantaged when they use home computers. The next section provides an analysis of the ways in which the relationship between girls and technology is fundamentally connected to wider social attitudes towards gender.

2.2 Gender, technology, games

Because this thesis is interested in technological expertise as it is performed by diverse students—including girls—it is necessary to acknowledge the vast literature that is devoted to ‘understanding’ and ‘responding to’ the perceived differences between boys’ and girls’ access to, use of, and understandings regarding various forms of technology. As an opening move, this necessitates an acknowledgement that the ‘nature’ of differences between males and females has been the subject of long and exhaustive debates for centuries. Many key aspects of these debates remain current in public discourse still today. For example, the essentialist arguments used to justify women’s exclusion from the public sphere in previous centuries are still today employed by men and women to argue such things as the essentialist construction of gender within society.

The structured and structuring structures (Bourdieu, 1990) evident in our lives are arguably infused with gendered constructs of historical dominance, which permeates post-modern society through the nexus of technology, power, knowledge and education.

This next subsection focuses on explaining how literature depicts technology in
particular as gendered and is included in order to explain my interest in and focus on these aspects.

2.2.1 Gender and technology

Although I have looked at debates relating to girls and computers within society and in the home it is important to situate this in a broader literature relating to gender and technology. Essentialist ideas of gender continue to be propagated in the literature, which influences how technology is gendered in construction and in use.

Many authors have declared science and technology to be a masculine culture (Brunner et al., 1998; Cassell & Jenkins, 1998; de Castell & Bryson, 1998; Harding, 1986, 1991; Jenson & Rose, 2003; Wajcman, 2004; Webster, 1996; Woodfield, 2000). In particular, this masculine culture of science and technology is fundamentally established around hegemonic binaries that value, normalize, and privilege the first term and denigrate, under-value and marginalize the second term (Cassell & Jenkins, 1998; Woodfield, 2000). Binaries referred to in contemporary literature include: reason/emotion (Harding, 1986; Woodfield, 2000); mind/body (Harding, 1986; Woodfield, 2000); culture/nature (Harding, 1986; Woodfield, 2000); active/passive (Woodfield, 2000); control/chaos (Woodfield, 2000); rational/emotional (Beynon, 2002; Woodfield, 2000); technical/social (Woodfield, 2000); skilled/unskilled (Woodfield, 2000); rationality/irrationality (Sofia, 1993, 1998); self/others (Harding, 1986); objectivity/subjectivity (Beynon, 2002; Harding, 1986; Morrill, 1997); knowing/being (Harding, 1986); logic/illogic (Lloyd, 1993); power/weakness (Millar, 1998); ideal/material (Lloyd, 1993); abstract/embodied (Lloyd, 1993); dominant/non-dominant (Beynon, 2002); practical/nurturing (Beynon, 2002); public/private (Abbott, Wallace & Tyler, 2005; Oliveira, 1991), and hard mastery/soft mastery (Edwards, 2002; Patton, 2002; Turkle, 1988; Turkle & Papert, 1992; Yelland, 2002).

These types of binaries\(^1\) are aligned with a biological, essentialist idea of masculinity and associated practices within a masculine computing culture (Wajcman, 2004) that

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\(^1\) I am aware that the school versus non-school distinction I have utilized already in my discussion is another example of a binary that warrants dispute of its congealed categories (Lather, 1990). It is a useful distinction that exists already in discourses around schooling, for example, curriculum versus extra-curricular activities, schoolwork versus other work, homework versus home play.
has been culturally constructed (Cassell & Jenkins, 1998). Wajcman (2004) explained this biological fixation by stating:

The resurgence of scientific interest in genetic explanations for a variety of human behaviours and personality traits lends increased legitimacy to a new kind of genetic determinism. Social problems as diverse as school failure, alcoholism, delinquency and even homosexuality are increasingly attributed to our genetic make-up (p. 80).

The quotation used to introduce this chapter highlighted how Bourdieu attributed the domination of masculinity throughout history, legitimated by the perceived strength in biological nature that is also a “naturalized social construction” (Bourdieu, 2001, p. 23).

Much literature has been clearly and closely associated with the sexual division of labour (Abbott, Wallace, & Tyler, 2005), which is also ascribed with biological, essentialist dichotomies. Webster (1996) identified how one needs many hours to develop competence, efficacy, and skill in using computers. As women have historically been relegated to the private sphere and tend still to be deemed responsible for the majority of or all domestic duties (and, as stated above, also be devoted mothers, successful career women, etc.), it is not conducive to expect that a woman who also works full-time can afford to spend hours and hours exploring computers, which some men are able to do as they do not have as much responsibility for domestic duties. This type of practice seems to be afforded only by men (Webster, 1996) who consequently are enabled to obtain a deep level of understanding and an exclusively shared computer language (Webster, 1996), or discourse.

I now focus on a feminist and sociological perspective regarding technology that claims, “Technology is both a source and a consequence of gendered relations” (Wajcman, 2004, p. 7; see also Hacker, 1989). These gender relations are argued to be

... materialized in technology, and masculinity and femininity in turn acquire their meaning and character through their enrolment and embeddedness in working machines (Wajcman, 2004, p. 107).

While it is beyond the scope of this thesis to offer a comprehensive review of sociological definitions of technology, I make the following points I consider
important in this brief review. Technologies are socially shaped (Hacker, 1989; Wajcman, 2004; Webster, 1996) by cultural structures, processes and constructs. They are represented in part by physical artefacts - machines and the mechanical (Hacker, 1989), and include “human activities and know-how” (Webster, 1996), as well as social relations (Hacker, 1989). Wajcman (2004) claimed, “Technological change is a contingent and heterogeneous process in which technology and society are mutually constituted” (p. 107) as they seamlessly evolve and are negotiated and struggled over (Webster, 1996). When new artefacts arrive in a workplace, they are not gender-neutral as they quickly acquire a gender by “association with its user or its purpose” (Cockburn, 1985, cited in Webster, 1996, p. 58) and new artefacts are gendered by the expected tasks and potential of its producers and its proprietors (Webster, 1996).

From this point of view, it is a myth to say that the computer (as a technological artefact) is neutral (Bromley, 1998; Woodfield, 2000) as Bromley (1998) highlighted that, “It really should come as no surprise if information technologies turn out to benefit primarily the most powerful actors in society” (p. 15). Specifically regarding computing, Webster (1996) claimed,

`Computing’ . . . is not only taken to mean computers as artefacts, but also the expertise and knowledge, culture and values of the computing profession, and the gender divisions and gender relations involved in the production of hardware and software (p. 9).

Consistent with the arguments made above, it is not difficult to argue that technological expertise is typically lined up on the masculine side of binary equations (Webster, 1996). For example, Bereiter and Scardamalia (1993) claimed that expertise was associated with the following notions:

talent, elitism, skill, paternalism, specialization, industrialism, credentialing (degrees, licensing, etc.), technology, rationalism (especially ‘technical rationality’), professionalism, age, hubris, experience, band-aid solutions, maleness, Western culture, authority, objective truth (p. 5).

Not only are these terms still evident and prevalent within constructions of masculinity and expertise (Johnson, Rowan, & Lynch, 2006), but they point to a definite alignment of expertise with masculinity, in keeping with the gendered culture evident in science, technology, and computers (Lynch et al., 2001; Webster,
This broad interest in computing as a practice performed and constructed through daily, personal experience shapes the analysis conducted in the rest of the thesis.

2.2.2 Gender and computing

In recent years, there have been many studies that have reported gender differences in types of computer use, amount of use, and attitudes towards computers. This section gives a brief overview of what has been reported about this field of practice regarding gender. This subsection is dissimilar to previously reported literature in this review that has focused on general computer use in the home and in society. This subsection specifically focuses on gendered notions surrounding computers, as a subsection of the gender and society section, and the gender and technology section. This subsection expounds some primary and secondary research studies that contribute to the literature surrounding computing and gender.

In her examination of three studies in primary and secondary education in Denmark, Australia and Canada, England and the Netherlands, which all focused on gender and technology, Stepuvelage (2001) claimed that girls’ ‘incompetence’ in computing and technology was analysed only in relation to differences between males and females. Stepuvelage (2001) discussed the binary position of conflicting gendered positions, and suggested that, as this dichotomised position highlights categories of difference, we should instead discuss gender as a social relation constituted between people, so that social practices/discourse can reflect this pluralistic approach, instead of a dichotomised one.

As stated above, various studies reported differences between genders in attitude towards and use of computers, for example, that males viewed the computer as something to be mastered (Morritt, 1997; Sofia, 1993; Turkle, 1988), of which a top-down, hard mastery approach was utilized. This is in comparison to females who predominantly used the computer as a tool, for a purpose, or to complete a task (Huff et al., 1992; Morritt, 1997; Sofia, 1993; Turkle, 1988; Wylie, 1995). In her critique of computer culture, rationality, and different aspects of computer technology, Sofia (1993) claimed males were more likely to wish to master or conquer (the possibilities of) computers, while women were more interested in using computers to serve a purpose. From a psychoanalytic framework, Sofia (1993) explained what Turkle
(1984, 1988) had found, that is, some males viewed the computer as an extension of themselves as they tended to enjoy finding out possibilities, solutions, consequences, and ‘what I can do’ with a computer; by contrast, the females’ tendency is more akin to ‘making it do what I want to do’, not with knowing how it (the computer) works. Turkle (1988) promoted that the computer was a ‘second self’ for males, which females tend to reject, preferring to view the computer pragmatically as a tool. Sofia argued that perhaps those females who had insisted that computers were ‘just tools’ were “perhaps reacting not so much against the ‘hyper-rationality’ of the machine as against the masculinist irrationalities associated with it” (Sofia, 2002, p. 100). The next few paragraphs highlight some primary research findings from different studies surrounding gender differences in the use of computers, including preferences, attitudes, and efficacy.

In a number of studies conducted with both women and men, Huff *et al.* (1992) reported that “there are recognizable differences in the ways that males and females approach the task of computing, and more surprisingly, differences in the ways in which computer software approaches men and women” (p. 19). They found that females have different opinions from males about their experience with and ability to use computers. In addition, one of the studies (1987, cited in Huff *et al.*, 1992) found that program designers’ gender-based expectations were reflected in the programs they designed.

Aman (1992) conducted a study with 500 students at two gender-segregated high schools, one male and one female. The questionnaire focused on relations among gender, the highest level of mathematics course completed, the amount of prior computer experience, the access to computers outside school, the number of hours of weekly computer use, and gender-segregated schooling. It also focused on attitudes toward computer use in general, as a tool for problem solving and as a tool for written composition. The comprehensive statistical analysis found that gender was a significant predictor of computer attitude and that females held persistently more positive computer attitudes than males. On the other hand, females showed less confidence in their abilities on the computer. Aman (1992) also reported that “respondents with the most positive attitudes were those having the most reported contact with a computer” (p. 44).
It has been reported that computers are represented in magazine advertisements as sites where masculinity is defined as powerful and men are active users of computers, in contrast with femininity, defined as lacking in technical know-how and as passive users of computers (Johnson et al., 2006; Sofia, 1998; Turner & Hovenden, 1997; Weinstein, 1998; Woodfield, 2000). From a series of extensive observations of computer laboratories and classrooms amongst a range of ages in a Costa Rican primary school, Huber and Schofield (1998) found that the construction of gender was heavily influenced by the social contexts of everyday life students found themselves within. The authors maintained that cultural and social forces such as radio, television, popular magazines, and school textbooks shaped patterns of roles within families, occupational choice, and scientific and technical training. The authors support their findings with similar studies conducted in the United States. The predominant finding of Huber and Schofield’s (1998) study was that computing was viewed as a male activity, and that this awareness led to girls using computers less frequently and less enthusiastically than boys.

Edwards (2002) presented findings from a two-year study titled Project SAME (Science and Mathematics Equity). This gender equity project sought to offer a “technology-centred learning environment that challenged girls to utilize logic and problem solving, while at the same time providing opportunities for imagination, design, and creativity” (p. 121). Sixty-six girls and twelve teachers participated in two intensive summer workshops, and follow-up activities involved six schools and 268 students (both male and female). In the workshops, girls and their teachers used LEGO/Logo for three hours per day and were involved in hands-on mathematics activities involving art and design. The study found that, when given the opportunity to make an original design, the female students designed such things as factories, roller coasters, dump trucks, cranes, and helicopters. The girls (one group of 13–14 years and one group of 11–12 years) were proud of what they had done, spoke positively about their work, and parents were impressed with their interest in technology. This project was designed to support a constructionist, soft-mastery or ‘bricolage’ style of learning (Edwards, 2002; Patton, 2002; Turkle, 1988; Turkle & Papert, 1992; Yelland, 2002). The setting of a single-sex learning environment proved to be a positive factor in the girls’ understanding of and confidence in their ability to use technology.
In a study completed by Facer et al., (2003), they reported on eighteen case studies (even mix of males and females) of children aged 8–12 years, coupled with a questionnaire of over eight hundred respondents, and group interviews with approximately fifty students. The researchers focused on the participants’ computer use in the home and the many influences that affected their use over a period of eighteen months. They reported that, “no two of our case study children used the computer in exactly the same way, nor used the computer for the same purposes at all times. It seemed to us that children’s computer use was usually an extension of already existing interests in their lives” (Facer et al., 2003, p. 89). Additionally, they also found that girls and boys tended to use computers for the same types of activities, except game playing, which was dominated by boys. They reported that computers and game-playing were gendered in that they were usually perceived as a medium for boys, and the use of a computer was less of an influence on girls’ construction of their gendered identity than it was on the construction of some of the boys’ identities. This study found that, while the boys were no more literate than the girls, there were a range of literacies, or levels of competence, apparent among both the boys and the girls, dependent on their access to computers, social network of friends who used computers, playfulness in using the computer, ability to pay for and the importance placed on Internet access, maintenance and upgrading, parental guidance, and access to experts. These variables, which highlight the complexities of computer use, had more influence on their perceived computer competence than the simple identification of whether a child was a boy or a girl. Studies such as these identify how females are using computers and support the identification of girls as competent computer users.

A significant part of out-of-school leisure, and specifically home use of computers, is game playing. Attention now turns to this phenomenon, specifically relating to how males tend to dominate the area of computer and video games.

2.2.3 Gender and games

Traditionally, boys are associated with computers and game playing (Brunner et al., 1998; Ray, 2004; Chalmers & Price, 2000; Rowan et al., 2002; Woodfield, 2000). There are many advocates for getting girls to play more games – those that wish to make money, those who believe playing computer games is an easy lead-in to computer literacy, and those who believe females are missing out by not being like
males. I will now explore literature relating to each of these perspectives and others, discussing the numerous issues associated with each perspective.

In this text, playing games includes games played on consoles such as Sony PlayStation 2™, Nintendo Game Cube™, or Microsoft's X-Box™, and games played on computers. When I use the phrase ‘computer games’, I am including games played on consoles as well.

Facer et al. (2003) found that in principle playing games was a valuable dimension of using a computer because children develop ‘playfulness’ in their approach to using a computer, found to be an important strategy in learning effectively.

Because males are predominant in employment and the development of technology (Brunner et al., 1998; Chalmers & Price, 2000; Rowan et al., 2002; Woodfield, 2000), and because computer fields are growing in importance within our Western society, it is anticipated that other careers in fields such as journalism and business will become more dependent on computers. Therefore it is argued that females should be adept at using computer technology in order not to be left behind in traditional male fields (computer science, engineering) and in the development of future fields where computer use is essential and becoming more relied upon (Cassell & Jenkins, 1998; Stepulevage, 1999). Yates and Littleton (1999) described that advocates of this position believe that girls’ lack of engagement with computers is the problem. One ‘solution’ is to get more girls to play games by appealing to girls’ tastes. This position advocates that, by grasping girls’ attention first through stereotypical means, one has the opportunity to broaden their interests. An example of this is the Barbie™ computer for girls, coloured pink, with stereotypical feminine software supplied, such as ‘girls only’ games, and software which focused on creativity and design (as discussed by Edwards, 2002 and Rowan et al., 2002). This is in contrast to the Hot Wheels computer system for boys brought out at the same time by Mattel™ where there was no software supplied covering creative play and learning. It should be noted that, “Educational software makes up less than a third of the titles accompanying the Barbie™ system but represents a majority of the programs included with the Hot Wheels™ computer” (Edwards, 2002, p. 120). This is a direct example of the degradation of girls, as it demonstrates that the software
designers and Mattel™ perceive girls as less competent than boys and not as interested in educational software as boys. As Rowan et al. (2002) argued,

It is safe to assume that the Barbie-specific software, which is not included on the Hot Wheels PC (and vice versa), sends clear messages to pre-teen children regarding what is ‘right’ from them to be interested in, and what is not. Without a doubt both the Barbie PC and the Hot Wheels PC can be seen as limiting for both boys and girls (p. 131).

This demonstrates how product and software designers can adhere to essentialist sex role socialised positions which stereotype girls and boys to act and behave in certain ways.

Cassell and Jenkins (1998) suggested that designing games for girls actually reinforces a notion that games are for boys. In the design of girls’ games, stereotypes abound as it is assumed that girls’ interests comprise fashion, personal appearance, and boys. Though girls’ tastes and interests need to be valued, not all girls have the same interests or preferences. Discussions abound about what are the ‘assumed’ interests and preferences of males and females. This approach encourages an essentialist position of ‘this is what girls are interested in’ and ‘this is how you should be a girl’, which manipulates the development of females in their own construction of gender.

Another perspective believes that the problem is the technology, in that it does not cater to (stereotypically) feminine interests. There are few, if any, games designed to entertain women; game designers unashamedly aim to capture the 13–25 year old male market (Ray, 2004). Typical computer games have been designed with a male user in mind and they have catered to male interests (Huff et al., 1992), ignoring female perspectives, and glorifying hyper-sexualised, female characters (Cassell & Jenkins, 1998; Rehak, 2003; Sofia, 1998; Weinstein, 1998). This is in keeping with computing being considered to be a masculine domain.

Some feminist researchers and activists seek to change the nature of how technology is gendered, and in particular the nature of computer games. The issues regarding computer games and console games include the use of female stereotypes, violent behaviour towards women, few positive representations of women, and the production of expectations of how a girl is meant to act, or how a boy should act in
order to be a boy. These characteristics are what feminist activists seek to challenge and subvert. As Edwards (2002) argued,

Rather than assuming, like the designers of the Barbie™ computer, that we ‘know’ girls and what they want and need, we can utilize carefully designed learning environments to investigate how girls think, solve problems, and interact when working in supportive, technology-rich settings (p. 135).

Edwards (2002) did admit that a Barbie™ computer may encourage a girl, who may not be at all interested in the technology, to use a computer, and that this does lend weight to the premise of trying to appeal to girls’ interests. However, a key limitation of this approach is that not all girls like the same things; hence it is an oversimplification of the solution for the presented problem.

There are many reasons why males are the predominant game players of computer games, video games, console games, etc. Brunner et al. (1998) explained that “the common approach in interactive design . . . is to develop story lines that reinforce extreme notions of gender” (p. 79), hence the advent of traditional, gendered computer games. Games are categorized into the following genres: action, adventure driving or flying, fighting, airborne combat, sports, role-playing, and simulation (Cassell & Jenkins, 1998). The traditional action and competition type games are about mastery and conquest, which Brunner et al. (1998) claimed appeal to males. What remains apparent is that, as males are the players of most computer games, changing the nature of computer games may appeal to females and get them to play more games. However, is this really what is desired? Do females really need to play computer games? Brunner et al. (1998) titled this a ‘psychological paradox’ – how do we address these issues of hegemonic male design and preference in computer games without also associating with stereotypical notions of femaleness?

Another issue with this ‘solution’ is that by focusing only on girls who are not playing computer games we ignore those who do play games. Some female gamers (see Jenkins, 1998) refuse to conform to traditional gendered roles, and delight in excelling in a male-dominated field. For some females, traditional games that include violent action and a mastery focus on levels are appealing (Douglas, cited in Jenkins 1998). Notwithstanding, this approach seems to maintain that playing games is, if not exactly the only, then certainly an important, lead-in to computer literacy, and that females will not be as computer literate and as technically competent until
they learn to use a computer as males do. On the other hand, playing computer games is not necessarily a prerequisite for computer literacy (Cassell & Jenkins, 1998). It is not enough to state that playing games will provide and produce technological competency and computer literacy. It is one way, and it may not be the preferred way, for females to gain experience with computers. This highlights and points to the many different ways that technological competency and computer literacy can be and are understood.

Sheri Graner Ray (2004) wrote a book based on her own experience as a gamer, as a game designer of HerInteractive (a girls’ games company), and currently as a designer for Sony Online Entertainment. Ray (2004) presented a history of the development of computer game design, and offered commercial suggestions for the increase of female participation in the use and design of games. Her reasoning for games promotion can be summed up by the following (in her words): ideology and economy: “By playing games, it increases females’ comfort level with technology, and this is essential for them to maintain economic parity with males” (2004, p. 183). However, I believe her interests lie with the desire for the gaming industry to tap into the largely ignored female market. Her book is written from the position of ‘let’s make money from these girls playing our games’ as well as getting them to ‘be like boys’. Ray does not question whether girls would like to play games for pleasure, identity, cultural construction, or expertise attainment.

Ray (2004) does present some valid points, one being that the technology itself may be a barrier to getting girls interested in game playing:

Females are more comfortable working with machines, rather than attempting to master them. This means that to increase the comfort level for female players, the interface needs to be extremely intuitive. The machine should not be portrayed as ‘the foe’; in fact, it should be transparent to the software (p. 11).

Practically, she suggests that females should not have to ‘fight’ the technology in order to play a game and that using the technology should be intuitive. However, this suggestion raises many issues, and makes obvious her essentialist notions. How much of generic computer use is intuitive for females? Asking that question implies that computer use is intuitive for males. Is that something that can be proved, or is it because male designers design games with the male gamer in mind (Huff et al., 1992)? We can also ask what is intuitive and, if it can be defined, whether all males
have this inherent ability. Are we talking about an innate quality, or a characteristic of an interface? Is there a different type of intuition for females compared to males? Is it possible to have an intuitive interface for different cultures or are we catering only to white Westerners? Ray’s ‘solution’ is an oversimplification that raises further issues.

Found within these issues that need further exploring are alternative reasons for playing games not yet identified in the review above. I now turn to exploring such things, including what is claimed to be girls’ preferences for game playing.

2.2.3.1 Alternative reasons for game playing

This sub-subsection gives alternative reasons for ‘getting girls to play games’ that have not yet been discussed in this literature review. It also summarizes various suggestions for what girls prefer to do when playing games. In my view, the following discussion illuminates positive reasons for encouraging females to play games, rather than motives for making money, or getting girls to be like boys.

Brunner et al. (1998) reported that games with role-playing, problem-solving and simulation features are of more interest to females. It has been reported that girls prefer collaborative, problem-solving approaches to gaming (Subrahmanyam & Greenfield, 1998) but girls are arguably not the only ones who will be interested in this approach. Ray (2004) suggested that one way to appeal more to females may be in having different consequences in games; for example, instead of dying when one does something wrong, there should be other consequences, such as not being able to progress in the plot. Subrahmanyam and Greenfield (1998) suggested that girls may prefer games that do not privilege a trial-and-error approach, and may prefer the rules to be fully explained before playing, in contrast to boys, who seem to prefer ‘seeing what it can do and what I can do with it’ before knowing what the game involves.

Downes (2002a) found that, while both girls and boys were regular users of computers, girls were more likely to play educational and strategy games, in contrast to boys who preferred combat and sport games. When learning how to play a new game, girls were likely either to ask for help or to read the instructions, compared to boys who preferred an experimental approach. Both genders were involved in non-
game playing activities such as word processing and finding information, but girls were more likely than boys to use non-game playing features of computers. Boys were more likely to play games for longer periods, play more frequently than girls, and borrow, purchase or share gaming software more often than the girls, who tended to play games that were already installed on their computer (Downes, 2002b). Downes suggested that this borrowing, sharing and installing of software might be one reason for the difference in males having more confidence, familiarity, and knowledge of the technical workings of a computer than females do.

In the book *From Barbie to Mortal Kombat: Gender and Computer Games* (Cassell & Jenkins, 1998), the authors draw together their shared viewpoint that game design should be directed towards enabling gamers to explore role-playing, relationships, and identities, especially in regard to their own masculinity and femininity, as it provides an ideal opportunity for children to explore these issues safely, and is a way of subverting hegemonic practices of gender and sexuality (Bullen & Kenway, 2002). These authors (Brunner *et al*., 1998; Cassell, 1998; Cup & Honey, 2002; de Castell & Bryson, 1998) maintain that games can be used for both boys and girls to prepare and express their masculinity and femininity, through escaping into a fantasy world, and trying things out from different perspectives, through various role playing strategies (Gee, 2003). Cassell and Jenkins (1998) argued that, “as we broaden the range of available options, we also open up new space for a broader range of experiences and identities for both girls and boys” (p. 36). So, instead of designing games for girls only, the opportunity should be taken to “expand the range of activities we can perform on a computer so as to encourage identity formation as a part of the game” (Cassell & Jenkins, 1998, p. 28). Instead of affirming sexist ideologies about desperate women who need rescuing by macho men, these authors believed that new games should be created that explore new aspects of avatar characteristics, role playing identities, problem-solving experiences, and opportunities for exploration of gender (Brunner *et al*., 1998; Cup & Honey, 2002; Gee, 2003). By creating games with a fusion of interests, gamers would be encouraged to explore a “fusion of masculine and feminine identities” (Cassell & Jenkins, 1998, p. 19). Cassell (1998) also promoted the idea that encouraging girls to participate in story-telling games would help to construct additional and alternative realities, identities, and futures. The basis of this position found in this literature is that traditional and limiting gender norms are celebrated within much of the video
and computer gaming genre. The next two paragraphs cite examples where findings focus on females and girls’ preferences compared to males and boys’ preferences.

Yates and Littleton (1999) conducted a participant observation ethnographic study of men and women whose age ranged from 20 to 35, and whose work had something to do with computers. They found that, when software was presented as a game, men did better but, when presented as a skills program, females did better. They discussed how males do not tend to critique dominant or hyper-sexualised images of women in the games. Females are concerned about these images, but are unsure of how to challenge the acceptance of these images in a way that will not result in their social rejection. They also may choose not to be ‘gamers’ because of public discourses which position gamers alongside issues of ‘addiction’, ‘time-wasting’, and ‘social isolation’, traits women may not wish to align themselves with. They also identified aspects of games that women found appealing: problem-solving, planning, graphics and gender representations.

Kafai (1998) conducted a study whereby she asked two groups of children to teach younger children about fractions and the solar system, using the context of designing an educational video game to help teach the concepts. She found the girls’ games had a remarkable consistency in design features, such as using a familiar and likeable character for their narrative, and that many of the boys’ games included violent aspects. Kafai argued that it was not that girls were uninterested in technology, but that they were in fact interested in different characteristics of games. In agreement with Cassell and Jenkins (1998), she argued for the possibility of game designs that explore alternatives to what is offered currently on the commercial game market.

Another reason for playing games is because of the learning that goes on as claimed by James Paul Gee. Gee (2003) published a book citing thirty-six learning principles inherent in ‘good’ video games. He claimed that playing games was a valid site for learning, and that there were better theories of learning inherent in video games than currently within some schools.
2.2.4 Limitations from a sociological and critical perspective

In the literature reviewed in the previous section, the following assumptions are made – because girls and females tend to use computers differently from males, they are automatically disadvantaged and therefore should change and be like males in order to keep up with them: a deficit model. It is often suggested that, if girls do not participate in and are not active about information literacy, they will get left behind – in future society and future employment. However, in contrast to a deficit view of girls, authors such as Bullen and Kenway (2002) advocate looking at girls’ existing personal interests and reworking technology to suit. Bullen and Kenway (2002) promote going beyond the thinking that situates technology as instrumental or enabling, and instead position technology as ‘pleasurable’, and as an enjoyable part of building one’s (gendered) identity.

Additionally, what the Edwards (2002) study alluded to was that some girls prefer to use a tinkering, open-ended, bricolage approach to the use of technology (including computers), in contrast to the top-down, recipe book, hard mastery mode that Turkle (1988; Turkle & Papert, 1992) claimed boys or males tend to use. However, as Yelland (2002) argued, “there is evidence that the styles of mastery are possessed by each gender” (p. 141). A binary dichotomy does not allow for the complexity of approaches and possible alternatives to be identified or explored, which demonstrates the need for a theory to explain the various aspects of how computers are used, regardless of the gender of the user, and in light of the premise that people do not tend to fit either one category of mastery style.

The suggestion that girls should play computer games so as to be on a par with boys in future careers and use of computers can be critiqued from a feminist position, in that it positions girls as ‘lacking’ and in need of ‘fixing’. This deficit model has been widely critiqued, specifically in regard to the implications that a ‘fix girls’ approach has. There are various strategies and approaches that have been suggested to encourage females in their use of computers. It has been suggested that girls and women’s comfort level with technology may actually be favourably developed through an application-oriented approach (Morritt, 1997). Some studies have documented the lack of motivation and relevance females see for the use of computers. To counter this, females should be educated about the usefulness and
applicability of computers to their future lives (Selby, 1995; Yelland, 2002). Other authors suggest there is a possibility for both males and females to explore masculinity and femininity in the design of new computer games, and also for the possibility of appealing to a ‘fusion’ of interests, in comparison to the stereotypical ‘shoot-em-up’ computer game (Cassell & Jenkins, 1998; Yelland & Rubin, 2002). What is apparent is that there are positive aspects of playing games.

However, it is too simplistic to state that girls should just play games as boys do as an easy lead-in to computer literacy and secondly because girls need to do what boys do in order to be equal with them. That position does not look at what girls are doing, stereotypically or not, and respect the differences between how they use computers in contrast to, or in a similar fashion to, how boys use computers (Edwards, 2002). Nor does it acknowledge the diversity of practice found within the categories of ‘boys’ and ‘girls’’ computer use.

Because of the well documented limitations of the literature that states ‘girls should change to be like boys’, and the way this denies detailed discussion of the forces which produce girls and computers in such routine opposition, I wished to focus on girls’ and boys’ attainment of computer expertise in order to determine differences and similarities and issues for further exploration. Specifically, this included attitudes towards females’ ‘mastery’ over computers and technology, their competence, and whether they felt limited by sociological constructions of their gender. It was with this literature in mind that the study was conducted, in order to identify whether female experts do indeed use computers differently from males, and whether their trajectory towards expertise was similar or different and what influenced this trajectory. Have the girls reworked the technology so that it is pleasurable and enjoyable? In addition, do the girls and boys in this study believe they are learning when they are using computers, and when they are playing games?

As I have critiqued essentialist differences between genders, we now move to the discussion and critique of generational categories, in search of terms that are demonstrative and yet reflective of differences between categories of similarly minded people.
2.3 Generational changes and technology

Traditionally, schooling has functioned as a key means of socialisation, but now the dominance of schooling as a means of socialisation is arguably less apparent owing to the huge influence and nexus of media and popular culture, which has transformed how children conduct themselves within the world. Luke (1996) explained how children, since infancy, have been immersed in multiple texts of popular culture. She highlighted how television, advertising, and toys at both home and school shape the way children understand the world and understand themselves, including gender.

Kenway and Bullen (2001; Bullen & Kenway, 2002) wrote about the influence of media advertising, entertainment, and consumerism upon Western teenagers. They argued that children’s consumption of goods actually socializes them and that children are unable to distinguish between advertising and entertainment, as the two have converged (Kenway & Bullen, 2001). The texts of popular culture provide entertainment, and this entertainment has become pivotal in how identities and understanding are constructed (Downes, 2002b). This influence constructs education and older generations as anti-youth, anti-leisure and anti-popular culture (Kenway & Bullen, 2001).

Because of the shift in post-modern society with regard to technology, youth, and multimedia, new realizations “of the relationship between technologies, pedagogies, schooling and media culture” (Green & Bigum, 1993, p. 127) need to occur to cater for the changes in contemporary, Western culture. In 1993, Green and Bigum hypothesized that, “a new kind of human subjectivity is forming, an entirely new identity formation emerging from the nexus between youth culture and the increasingly global media complex” (p. 122), and highlighted “the emergence of a new type of student, with new needs and new capacities” (Green & Bigum, 1993, p. 119). From this basis, I claim there are key challenges facing educators who seek to respond to generational change and the resultant “aliens in the classroom” (Green & Bigum, 1993) in ways that go beyond simplistic, stereotypical or limiting understandings of ‘youth’ and ‘youth culture’. It is arguable that the learning preferences of youth and some of their actual non-schooling sites for learning are in such contrast to current day inauthentic practices within schooling (Brown, Ash, Rutherford, Nakagawa, Gordon, & Campione, 1993). This is not a new revelation or insight as in a similar vein other authors have suggested practical changes to the structure of schooling (Gee, 2004; Goodson et al., 2002; King & O’Brien, 2002), the
administration of schooling (Luke, 2002) and the curricula within schooling (Bigum 2002, 2003; Goodson et al., 2002; Kenway & Bullen, 2001; Mackereth & Anderson, 2000; Moore & Young, 2001; Postman, 1993). What is obvious is that these premises have been argued as early as 1993, yet the argument for needed change remains the same. The changes evident in popular culture and youth culture need to be reflected through changes in schooling (Downes, 2002b). However, it is not within the scope of this thesis to include those arguments here. Generational changes have not only occurred as a result of the praxis of children’s leisure, construction of their identity, consumption (Kenway & Bullen, 2001), and in the media of popular culture, but have also helped to produce the changes found in children’s leisure, construction of identity, consumption and the media of popular culture.

Discourses surrounding the developmentalism of children imply a “linear progression from the simple to the complex and from the irrational to the rational” (Kenway & Bullen, 2001, p. 3), not giving attention to the “multiple and complex ways that adolescent and adult discourses interanimate each other” (Alvermann, 2002, p. viii). It is implied that because children do not ‘fit’ the childhood development of old that they need to be ‘fixed’, or that they are ‘deficient’. However, I argue that they are simply different. As Rushkoff (1997) argued, “As a kid has trouble imagining himself [sic] ever living long enough to make it to adulthood, we have trouble imagining our culture developing past its present childhood level” (p. 12). This is in keeping with my argument (made throughout this thesis) that older generations do not necessarily recognize, value, or legitimate the cultural capital of younger generations, particularly when the forms this capital takes may be quite different from forms of earlier generations (for instance, the struggle of adults to accept the shorthand spelling of SMS or mobile phone text messages is an interesting example of this). We now turn to examining the literature about generations, and how discourse surrounding the development of adolescence has classified distinct generations. Technologies and consumer-media culture (Kenway & Bullen, 2001) have particularly characterised the most recent generations, which I focus on in this next section.

2.3.1 Generations

After briefly describing the concept of generations, I turn to examining the influence of media and digital technologies on children and adolescents.
In a qualitative study focused on exploring the attitudes of Australians to establish which patterns in life in Australia are changing, Mackay (1997) presented descriptors of three generations. Those born in the 1920s he termed the ‘lucky’ generation, the post-war baby boomers were termed the ‘stress’ generation (born in late 1940s and early 1950s), and those born in the 1970s were termed the ‘options’ generation. Mackay (1997) defined a generation by stating that:

Biologically, a generation is measured by the time it takes an organism to reach sexual maturity: human generations have therefore been traditionally defined in 15-year spans. Colloquially, we are less strict than that: we tend to speak of generations in terms of a group of individuals who were born at about the same time, or in the same era, and who have been subject to common social, cultural and economic influences (p. 3).

Perhaps the most renowned term - Generation X - was coined by Douglas Coupland (1992) in his fictitious writings. There have been many different terms used, and some distinctions made to clarify when the generations actually start and begin, such as in the United States of America. For example,

- Boom[ers] – January 1946 to December 1964;
- Bust – January 1965 to December 1976; and,

However, classifications such as these are commonly disputed, as is the origin of the term ‘generations’, the history of generations, and whether a generation is in fact a generation or not. Typically and arguably, Generation X is the generation that followed the Baby Boomers generation. Generation Y (Bullen & Kenway, 2002) followed Generation X. Generation Y is known as

- Millennials (Gee, 2004; Hagood, Stevens & Reinking, 2002);
- Screenagers (Rushkoff, 1997);
- Generation M or Generation Media (Rideout, Roberts & Foehr, 2005); and
- The Net-Generation, or N-Geners (Tapscott, 1998).

The purpose of including this information about generations is to focus on Generation Y – the millennials, screenagers, and Net-Generation whom I have interviewed and observed in this study. It is not a purpose of this thesis to argue for incontestable definitions and delineations of generations.
Generation Y is argued to be those born between 1980 and 1995 (Bullen & Kenway, 2002), who tend to be oriented towards consumption and shopping, and be influenced by the notable spending of their stressed working parents (Bullen & Kenway, 2002; Mackay 1997). In terms of the leisure of millennials, Gee (2004) noted that millennials spend a significant time in unstructured activity compared to those in Generation X. In addition, the media-consumer culture has become an important resource for pleasure and identity building (Bullen & Kenway, 2002). This has continued from the shared popular culture literacies of Generation X. Tara Brabazon (2005) elaborated how media including music, film, print, and dancing all help to comprise the identity of Generation X-ers. Hagood et al. (2002) argued that millennials (Generation Y) drive several industries such as fashion, entertainment, and technology and are the most researched group of people in history. Their spending is important because they comprise a market segment valued at $150 billion a year (Hagood et al., 2002).

Tapscott (1998) claimed there were ten themes of the Net-Generation culture:

1. Fierce Independence;
2. Emotional and Intellectual Openness;
3. Inclusion;
4. Free Expression and Strong Views;
5. Innovation;
6. Preoccupation with Maturity;
7. Investigation;
8. Immediacy;
9. Sensitivity to Corporate Interest; and,
10. Authentication and Trust.

All of these themes are claimed by Tapscott (1998) to be inherent in the adolescents found in developed countries.

Rideout et al. (2005) conducted a nationally representative survey in the United States of America of 2032 third to twelfth grade students aged 8 to 18. The survey focused on recreational (non-school related) use of media, including television, videos, movies, computers, the Internet, video games, books, magazines, newspapers, DVDs, radio, CDs, tapes, and MP3s. There are four aspects from their study that I wish to highlight:
1. This media generation devotes more than a quarter of each day to media (an average of 6.5 hours per day);
2. Media takes up and/or impacts on virtually every aspect of young people’s lives;
3. Media use begets media use; those with easy access to media spend more time using it; and
4. Media multitasking, that is, the use of multiple forms of media at one time, is a growing phenomenon.

Because Generation Y is preoccupied with media, I now move to discussing aspects related to the digital nature of their leisure practices. Rushkoff (1997) claimed that these millennials, whom he termed “screenagers”, enjoy being self-determining and are comfortable with non-linear, complex experiences, which is arguably what they find in front of a screen. Rushkoff argued that, because discontinuous media is the rule for screenagers, it has resulted in them adopting a . . . social philosophy very different from their predecessors’. They do not work to recombine and reduce the seemingly endless stream of media bits into coherent, unified pictures, and they no longer believe in hard-and-fast answers to the world’s problems (p. 44).

The amount of time spent by adolescents using media and multi-tasking with various forms of media does raise the question of the healthiness of such praxis. Tapscott (1998) raised the issue of addiction and stated, “If you ask children online if they are addicted, they will invariably say yes. On the other hand, they don’t seem too concerned about it because they don’t believe that it’s harmful to them” (p. 116). He added that it is hard to argue that this activity is harmful unlike dependency on drugs or nicotine. I return to the notion of addiction and discuss its construction in relation to the participants’ praxis in chapter six.

2.3.2 Limitations from a sociological and critical perspective

Criticism directed at those who write about generations often reject the idea that there is any essential character to Generation X, or Y, or M, etc., citing the diversity that exists within any group around factors such as gender, socio-economics, race and so on. The political usefulness of the terms is often regarded as weakened thanks to their uptake by media and advertising texts that have arguably used terms such as those described in the previous section glibly and unreflectively. What the literature on generations does highlight is that there are patterns around experiences,
dispositions, actions, and attitudes. This impacts society, including schooling and beliefs about differences between generations, especially between parents and their children. For example, Hagood et al. (2002) argued that by

. . . defining the Millennial Generation as youth who solely spend their time mindlessly and acritically playing with computers, video games, and music, we run the risk of dismissing the highly engaging and increasingly valid literacies they create in their engagement with various media (p. 79).

They continued by stating that, though generational categories are stably depicted, the “literacy practices of one generation are not necessarily particular only to that generation” (Hagood et al., 2002, p. 79).

In 1996, John Perry Barlow wrote about digital natives and digital immigrants in order to distinguish between those who have always been immersed in digital media (specifically personal computers) and those who have been introduced to it at some point in their lives and are newcomers to its use. The phrase ‘digital natives’ is sometimes regarded as problematic from the standpoint of post-colonial theorists. This relates to the suggestion that ‘natives’ have some inherent character, a problematic suggestion in literature that has long positioned the ‘essential’ native in opposition to ‘immigrants’. Of course, in this case the ‘essence’ ascribed to the native is designed to be a positive recognition of particular sets of skills (that is, computer competence) but the historical pattern of ascribing differences between natives and immigrants (or natives and invaders) makes the easy use of these terms unlikely. For this reason, I wish to employ the terms ‘digital insiders’ and ‘digital newcomers’ (Goodson et al., 2002), as these terms allow for multiple experiences, rather than just being at one extreme or the other of a continuum. It is this distinguishable difference of being either a digital insider (always immersed in digital media since birth) or a digital newcomer (introduced to digital media) that I am referring to when I discuss generational differences in the data chapters.

As I have focused on the trajectory towards expertise of the digital insiders in my study, it is important to review in the following section the literature on expertise. In undertaking this review I am conscious that, in the literature explored in earlier subsections of this chapter, expertise is taken as a ‘thing’ that people do or do not have,

2 See Lankshear and Knobel (2003), and Goodson et al. (2002) for more discussion about the mindsets of insiders and outsiders.
a ‘thing’ that boys seem to acquire more than girls, and a ‘thing’ that girls need if they wish to be ‘successful’ in a computer mediated world. Whilst this literature acknowledges different levels of expertise, it rarely problematises the notion of expertise itself. In the following section, my aim is to identify the existence of literature that seeks to understand expertise in more complex ways. The key implication for this thesis is the identification of more robust approaches to conceptualising obtaining and the obtainment and performance of multiple forms of expertise.

2.4 Expertise

This section on expertise summarizes some of the general findings from the cognitive psychology field of expertise, which has covered diverse practices such as chess, memory performance, typing, and medical analysis. The studies are almost always positivist and quantitative. The texts referred to below describe how expertise is acquired. Some have attempted to design models from which they claim how expertise is performed through linear models, which describe decisions that have been made. This is fraught with limitations, as humans are not sequential and undeviating – especially adolescents (Rushkoff, 1997). Presenting the information below, which explains psychological ideas about the trajectory towards expertise, that is, stages, time commitment, natural ability, intelligence levels, etc., helps to illustrate the base of literature of how expertise is gained. This will help to inform the critique of this literature and the need to include sociocultural influences when discussing how expertise is obtained.

Ericsson and Smith (1991) stated that, “the study of expertise seeks to understand and account for what distinguishes outstanding individuals in a domain from less outstanding individuals in that domain, as well as from people in general” (p. 2). Ericsson and Smith (1991) claimed that experts do not only have an extensive knowledge base in comparison to non-experts, but that they are able to access that knowledge more easily and more quickly. They stated that in expertise literature attention is given to whether expertise was inherited or acquired, and if it was general expertise or specific expertise, that is, domain specific. Expertise (in the context of general literature in the psychological field) can refer to both nature and nurture, that is, the result of both genes and/or environments (Ceci, Barnett & Kanaya, 2003). Ceci et al. (2003) argued that, while some people may have genetic
advantages towards expertise in certain fields, they also must have a high level of
motivation to take advantage of the “relevant environmental factors” (p. 81)
associated with developing the skill in their field of competence. Notwithstanding,
Ceci et al. (2003) also mentioned that some people with limited natural ability have
reached expertise through sheer hard work, therein reinforcing the idea that
motivation is a necessary component of expertise.

Ackerman and Beier (2003) discussed Ericsson’s model of deliberate practice (c.
1993) where Ericsson claimed that skill was obtained by the accumulation of
deliberate practice over a period of time, for which one needs not only the time to
access these resources, but also needs the resources. The accumulation of training
and experience, skills, performance, and the ability to select correct actions comprise
expertise. Ericsson claimed that in this model, “The principal challenge for attaining
expert performance is that further improvements require continuously increased
challenges that raise the performance beyond its current level” (cited in Ackerman &
Beier, 2003, p. 116). In reference to this model, Ceci et al. (2003), stated,
“accumulated deliberate practice causes acquired skill and characteristics, which in
turn cause performance, and some of these characteristics increase the maximal
amounts of possible practice” (p. 83).

This model of deliberate practice is similar to Dreyfus and Dreyfus’ (1986) model of
the five stages of progress towards expertise described by Bereiter and Scardamalia
(1993, p. 17), presented below in Table 1.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Novice - where one rather blindly follows limited rules</td>
</tr>
<tr>
<td>2</td>
<td>More flexible and situationally sensitive rule use</td>
</tr>
<tr>
<td>3</td>
<td>Competence - one applies goal-directed plans and strategies</td>
</tr>
<tr>
<td>4</td>
<td>One has accumulated enough experience that one can often recognize what needs to be done and so have less need of planning and problem solving</td>
</tr>
<tr>
<td>5</td>
<td>Expertise - decision making becomes unnecessary and one just naturally does the right thing without having to think about it</td>
</tr>
</tbody>
</table>

Table 1 – Five Stages towards Expertise (Dreyfus & Dreyfus, 1986)

This table highlights how psychologists have focused on the linear progression of
humans towards expertise, arguing that it is simply a case of moving from novice
towards expert, starting with the application of some rules, then many rules, and
finally being able to operate without being conscious of the rules.

In their review of expertise research conducted since the 1970s, Chi, Glaser and Farr (1988) stated the research focused on knowledge-rich tasks, namely ones that require thousands of hours spent learning and experiencing within the field. Many of the studies in the Chi et al. (1988) book compared the performances of novices and experts. They claimed the results show a strong correlation between the acquisition of knowledge, and the ability to access that knowledge stored in one’s memory quickly (Johnson, 1988; Posner, 1988). Posner (1988) also referred to the motivation needed for a person to become an expert.

In their research on expertise, Bereiter and Scardamalia (1993) found that, in comparing novices and experts, experts would “work harder and do a great deal more thinking” (p. x) than novices. This is in contrast to previous studies (e.g., Glaser & Chi, 1988; Johnson, 1988; Posner, 1988), which found that experts were able to do more with less effort.

Bereiter and Scardamalia (1993) discussed some of the history of research in expertise and presented basic premises about the nature of expertise, including that many cognitive psychologists believe expertise comprises knowledge, that skill is viewed as a type of knowledge, and that it may take 10,000 hours or (an arbitrary figure of) ten years for a person to become an expert in a field. They argued for a method of expertise named progressive problem solving, which they believed constituted a process of expertise, rather than viewing expertise as a product (Gee, 2000; Gee & Lankshear, 1997). Whilst they acknowledged that some inherent abilities lack in those wishing to become experts (though natural ability or intelligence is not always an indicator of possible expertise), they argued that people need to “become expert in becoming experts” (Bereiter & Scardamalia, 1993, p. 2).

Bereiter and Scardamalia (1993) explained how a person can become an expert through the process of reinvesting in learning through seeking out more difficult problems and problem reduction, which they termed ‘progressive problem solving’. They argued that, through this process, fewer mental resources are needed to accomplish the same results because problems are reduced, so that agents can focus on bigger problems. This process of expertise is notable because it represents what
is done above and beyond the normal course of learning, that is, what novices do. By problems being reduced, more energy and focus are set aside for analysing and focusing on bigger problems.

2.4.1 Limitations from a sociological and critical perspective

Trying to use, design, and apply prescriptive models to how experts make decisions is awkward, as humans are non-linear, and not machine-like. Expertise is a phenomenon that involves complex humans, not cause-and-effect machines. Thus, any explanation of human expertise becomes limited if a quantitative, psychological analysis is employed. These descriptions of expertise do not include sociocultural elements such as the social constructions of class, gender, age, ethnicity, social stratification, the nexus between technology and power, extension of existing interests, the influence of other people on their expertise, and power relations. A sociological approach - in preference to a psychological approach (be it based in educational psychology or not) – will highlight some of the ways in which expertise is developed and performed within the gendered nature of technology and society.

The literature about expertise does not explain what expertise means to young adults, nor has it been examined in settings of youth culture and leisure. The previous sections show how expertise has been explained from adult notions of expertise and the field of psychology.

It is arguable that the psychological literature on expertise has little value to a thesis that is explicitly sociological. Wenger (1998) introduced and discussed communities of practice that focus on groups who identify with others that share enterprise and a repertoire of practice. In preference, Gee (2003) used the phrase “affinity group” to describe communities of practice. A community of practice is a sociological framework that focuses in one way on how expertise is developed, although it tends not to be called expertise within that framework. Hence, it remains that dominant models of expertise are those from the field of psychology. It was anticipated that this project would identify sites of expertise that have previously been ignored as sites of learning or neglected in other research projects, and describe the trajectory towards expertise within these sites. It was important to employ a sociological framework such as Pierre Bourdieu’s in order to focus on the multiple ways that
expertise is developed, instead of employing psychological frameworks that are focused on essentialist notions of expertise acquisition.

One of the few sociological references to expertise I have found was from Carmen Luke, who stated that, “the expert is the one who sees and seeks the connection among related pieces of information, not the one who has the bare decontextualised facts” (Luke, 1997, p. 11). It is this idea that I wished to explore, and argue that, while Luke’s statement is in keeping with the focus of my study, this statement needs to be substantiated by further research, an argument not only for this study, but for subsequent studies.

2.5 A brief summary of the literature review

Relations of power permeate society in that those who are powerful maintain social and economic inequality. Hegemonic masculinity is privileged because cultural processes work for it. The values of wealthy (white) males transcend through to the use and development of technology, computers, and gaming. Technologies “reflect and affect the surrounding social conditions” (Bromley, 1998, p. 4-5).

Home computer use is an important part in gaining efficacy when using computers (Downes 2002a, 2002b; Meredyth et al., 1999). More attention should be given to how children and adolescents utilize home computers, as the blurring of “play, practice, and performance” (Downes, 2002b, p. 21) raises pertinent issues regarding how traditional schooling caters for students of previous generations: digital insiders are not catered for in their preferred mode of learning and their preferred engagement with computers.

As gaming is now a “serious business” (de Castell & Bryson, 1998, p. 254), feminists and gaming industry entrepreneurs have developed the ‘girls’ games movement (Cassell & Jenkins, 1998). The literature above discusses complex perspectives on how equity might be obtained within gaming. It is the position of the author that equity should be achieved through games that “encourage new visions of equity itself” (Cassell & Jenkins, 1998, p. 5).

The literature on generations tends to assign an essentialist character to age groups of people and categorize them accordingly, though not all of the literature is essentialist.
The tendency is to try to identify common attributes of life worlds of those in a particular age group. Using generation type terms is a trend throughout literature, but nevertheless argue that there are distinct generational changes that have occurred with the advent of digital media – hence the focus on technology and its nexus with expertise in this study. This study will use the terms “digital insiders” and “digital newcomers” to reflect the division between adolescents who are digital insiders and adults who are digital newcomers. In this text, the word “generation” may be used, but will usually be in reference to this divide between digital insiders and digital newcomers because of the distinct changes that have occurred in recent history with the advent of digital media. It is my argument that some digital newcomers do not recognize, value, or legitimate the cultural capital of digital insiders specifically with regard to their understanding of expertise and of schooling (Lankshear & Knobel, 2003).

Much of the research conducted on expertise has been from a psychological approach, rather than a sociological one. This sociological study focuses on adolescents’ understanding of expertise, especially in relation to the attainment of their own technological expertise, and the many influences on their trajectories towards expertise. This study arguably fills a gap in the literature, though it will not close the gap. What it will draw attention to is the complexity of how expertise is performed by diverse people in diverse contexts, contributing to the anti-essentialist literature surrounding gender, girls, technology, and expertise.

In fact, it is clear that the eternal, in history, cannot be anything other than the product of a historical labour of externalization. It follows that, in order to escape completely from essentialism, one should not try to deny the permanences and the invariants, which are indisputably part of historical reality; but, rather, one must reconstruct . . . . the history of the continuous (p. 82) (re)creation of the objective and subjective structures of masculine domination (Bourdieu, 2001, p. 83).
3.0 Methodology

Thus, because habitus is, as its name suggests, a product of a history, the instruments of construction of the social that it [habitus] invests in practical knowledge of the world and in action are socially constructed, in other words structured by the world that they structure. It follows from this that practical knowledge is doubly informed by the world that it informs: it is constrained by the objective structure of the configuration of properties that the world presents to it; and it is also structured through the schemes, resulting from incorporation of the structures of the world, that it applies in selecting and constructing these objective properties (Bourdieu, 2000, p. 148).

This chapter introduces the conceptual framework and contains descriptions of my approach to the research. I will explain the study’s positioning within the critical theory paradigm and its particular connection to the writings of Bourdieu. I will highlight the logic of also drawing on particular dimensions of contemporary feminist thought to design and conduct the study. Through this explanation, the interrelationship between my research questions and the theoretical perspective will be framed and justified. The research design of this study is described in chapter four.

3.1 Research paradigm

This section will describe the research paradigm that frames this study and the various methodological choices I have made with regard to relevant literature. I use the term “research paradigm” after Kuhn (1970), to refer to what guides a researcher’s design and conduct of a research study; it includes the broader context of a researcher’s worldview. A paradigm has been described as a “basic set of beliefs that guides action” (Guba, 1990, p. 17), an “interpretive framework” (Denzin & Lincoln, 2000, p. 19), and “the articulation of the ways that scholars make sense of the research world they live in” (Dillard, 2006, p. 62). Dillard (2006) stated that paradigms were inherently attached to our notions of, use of, and abuse of power, valorised in our own cultures, which disguise and legitimate power (Moore, 2004). Patton (2002) stated,

Paradigms are really about epistemology, ontology, and philosophy of science. As such, paradigms are important theoretical constructs for illuminating fundamental assumptions about the nature of reality (p. 72).
In other words, one’s paradigm reflects what one considers as important, legitimate and reasonable with regard to reality – what it is and is not, and how it can be communicated – and knowledge – its construction, limits and political consequences. As the move from positivism to post-positivism became more evident, there was a shift from what can be considered as the grasping of objective reality to trying to discern partial reality. Lather (2006) and Dillard (2006) have both argued that academics should be welcoming diversity, that is, the proliferation of other paradigms, in order to reflect the rise in the understanding of subjectivity as multiple, and truth and reality as partial. Dillard (2006) claimed that the ‘Big Four’ paradigms (positivism, post-positivism, critical theory et al., and constructivism) were cultural constructions that were developed from a broader research community, approved by those in power, who “by design or by default” (p. 63) have been given that power. Lather (2006) argued that there should be encouragement of a thousand paradigms to usurp the four hegemonic paradigms, claiming that the influence of the hegemonic ‘Big Four’ should not be the be-all and end-all features of contemporary research design. The point made by Lather has been increasingly well recognised within contemporary research in the social sciences generally and more specifically in education. Indeed, within one of the most commonly cited reference texts relating to the discipline and practice of qualitative research, Denzin and Lincoln (2000) first rename the ‘big four’ as positivist and post-positivist, constructivist-interpretivist, critical (Marxist, emancipatory) and feminist post-structural. They then go on to acknowledge that each of these paradigms is itself broadly conceptualised and that it is possible to identify “multiple versions of feminism as well as specific ethnic, Marxist, and cultural studies paradigms” (p. 20). Indeed, they identify seven increasingly significant interpretative paradigms, including positivist, post-positivist, constructivist, feminist, ethnic, Marxist, cultural studies, and queer theory (p. 22).

The key point here is the fundamental connection between theoretical framings and interpretive framings. That is to say, the research one conducts, and the ways one makes sense of it, are fundamentally connected to the kinds of theoretical resources one depends upon. Because of this, the nature, understanding, and explanation of qualitative research differ from place to place and from researcher to researcher (see Demerath, 2006). The lines are blurred; distinctions are blurred; and the descriptions are arguable. In the following sections, I present my own definitions of key influences on the design of this research.
I define myself (moving beyond the limitations of the term “paradigm”) as a critical, feminist researcher, working within a cultural studies paradigm. This association is dependent upon certain epistemological and ontological beliefs that I explore in further detail below.

3.1.1 Introductory remarks on epistemology and ontology

In common with many feminist and critical scholars, I reject the possibility of objective methodologies and the associated connection with experimental or quasi-experimental methods, and use critical resources to focus not on the empirical world and what can be measured, but on the kind of research questions that become possible when one acknowledges that ways of knowing are culturally bound (Lather, 1995). Feminist and critical scholars working in a post-modern tradition take this further to suggest that there can never be any ultimate truth, merely perspectives on reality with validity for the person who constructs them.

From this standpoint, views of knowledge and reality are influenced by one’s pre-conceived beliefs, ideas, and experiences – and by the impact of race, class, gender and so on – which allows for multiple constructions of meaning depending upon the body one inhabits in any particular social and historical context (Patton, 2002). Understanding therefore always rests upon interpretative presuppositions that are historical and subjective in nature (Wicks, 2003); for example, one’s experience is filtered through one’s particular way of understanding, which is a result, not only of one’s gender, cultural background, sexuality, and so on, but also of one’s particular upbringing, and the social conventions and language that one has been exposed to (Ingram, 2003).

Consistent with the epistemological points outlined above it is important to acknowledge the ontological argument that reality is shaped historically by social, political, cultural, economic, ethnic, and gendered values – which is part of critical theory (Denzin & Lincoln, 2000). My view of the nature of knowledge is influenced by critical theory in that I believe reality is shaped by structural or historical insights (Abbott et al., 2005; Denzin & Lincoln, 2000). Denzin and Lincoln (2000) stated, “There are no objective observations, only observations socially situated in the worlds of – and between – the observer and the observed” (p. 19). Critical theorists
believe that findings are value-mediated (Denzin & Lincoln, 2000). My acceptance of a materialist-realist ontology is commensurate with feminist critical theory and feminist standpoint theory (Abbott et al., 2005) and elements of post-structuralism (Kenway & Willis, 1995, 1998).

I believe that social relations and constructions are the result of historically constructed power relations and dominance over the ‘Other’, such as women, non-white races, those in poverty, and those considered to be lower class (Abbott & Wallace, 1997; Bourdieu, 1984; Kenway & Willis, 1995, 1998; Reinharz, 1992). It is appropriate to take a moment to explain why I have used Bourdieu’s theory of practice.

3.2 Conceptual framework: the social theory of Pierre Bourdieu

I believe it depends on one’s *habitus* (Bourdieu, 1990) as to how one perceives truth and how one understands reality. Habitus focuses on what has been learnt from the “analysis of structures of symbolic systems (particularly language and myth) so as to arrive at the basic principle behind the efficacy of symbols, that is the structured structure which confers upon symbolic systems their structuring power” (Bourdieu, 1971, p. 1255). I explain habitus in more detail in section 3.2.1.

Grenfell and James (1998), Hodkinson (1998), Reay (1998), and Robbins (1998) argued that using Bourdieu’s theory to construct qualitative research and analyse data “offers insights and understandings not readily visible in other approaches” (Grenfell & James, 1998, p. 2). Grenfell and James (1998) posited that Bourdieu’s ideas offer “an epistemological and methodological third way” (p. 2), not available to the extremes of positivist objectivity and post-modernist subjectivity. Using Bourdieu’s theory of practice in my research is appropriate as it employs “theory which is robust enough to be objective and generalizable, and yet accounts for individual, subjective thought and action” (Grenfell & James, 1998, p. 10).

As Bourdieu’s philosophical roots led to his interest in anthropology and sociology, and his consequent use of ethnographic techniques, it is apt that I use qualitative, ethnographic methods in my research in education. This reasoning shall be discussed in detail in chapter four.
Bourdieu (1991) explained how he believed ideologies were constructed: 

Ideologies owe their structure and their most specific functions to the social conditions of their production and circulation, that is, first, to the functions they perform for specialists competing for a monopoly over the competence under consideration (religious, artistic, etc); and second, and as a by-product of this, to the functions they perform for non-specialists. We must remember that ideologies are always doubly determined, that they owe their most specific characteristics not only to the interests of the classes or class fractions they express (the function of sociodicy), but also to the specific interests of those who produce them and to the specific logic of the field of production (commonly transfigured into the form of an ideology of ‘creation’ and of the ‘creative artist’) (p. 169).

This highlights how dominant classes reproduce praxis that serves their specific interests. I now explain some of the theoretical work of Bourdieu who offers the specific theoretical resources that structure the research design and the analysis. The philosophical branch of phenomenology influenced Bourdieu’s epistemology, and his understanding of ontology and epistemology is explained through his conceptual theory. I now explain these aspects in Bourdieu’s theory so I am able to demonstrate that I have linked my approach to understanding with his.

Bourdieu discusses an individual’s construction of knowledge in the following way:

The agent engaged in practice knows the world but with a knowledge which, as Merleau-Ponty showed, is not set up in the relation of externality of a knowing consciousness. He [sic] knows it, in a sense, too well, without objectifying distance, takes it for granted, precisely (p. 142) because he is caught up in it, bound up with it; he inhabits it like a garment [un habit] or a familiar habitat. He feels at home in the world because the world is also in him, in the form of habitus, a virtue made of necessity which implies a form of love of necessity (Bourdieu, 2000, p. 143).

Bourdieu places the agent in a social world, which is the object of knowledge for those

. . . who belong to it and who, comprehended within it, comprehend it, and produce it, but from the point of view they occupy within it. One therefore cannot exclude the . . . knowing and the being-known, the recognizing and the being-recognized, which are the source of the struggles for recognition, and for symbolic power, that is, the power to impose the principles of division, knowledge and recognition. But nor can one ignore the fact that, in these truly political struggles to modify the world by
modifying the representations of the world, the agents take up positions which, far from being interchangeable, . . . always depend, in reality, on their position in the social world of which they are the product but which they help to produce (Bourdieu, 2000, p. 189).

This highlights that agents are products of symbolic representation, which they help to create. It shows how the struggle for recognition and for symbolic power depends on their position in the social world, of which they are placed, and which they have helped to create.

Grenfell and James (1998) stated that Bourdieu’s ontology comprised the “product of habitus and field and between habitus and field” (p. 16), which highlights how intertwined habitus and field are, and that habitus and field mutually constitute each other. Wacquant argued that Bourdieu’s ontology was based on,

. . . a non-Cartesian social ontology that refuses to split object and subject, intention and cause, materiality and symbolic representation, Bourdieu seeks to overcome the debilitating reduction of sociology to either an objectivist physics of material structures or a constructivist phenomenology of cognitive forms by means of a genetic structuralism capable of subsuming both (Wacquant, 1992, p. 5).

I will explore Bourdieu’s epistemology and ontology in more detail when I discuss the basic facets of his conceptual theory – habitus, capital, and field.

My commitment to identifying the ways in which experience is impacted on by widespread cultural and gender norms makes the incorporation of feminist perspectives into this project a logical move. Employing a feminist perspective fills out a possible gap in Bourdieu’s theory – that of a female standpoint (Harding, 1991). Bourdieu’s theory and feminism both come under the umbrella of critical research (Merriam, 1998) and both theories employ qualitative methods in a bid to go beyond the limitations and malestream nature of quantitative research (Abbott et al., 2005; Jayaratne & Stewart, 1995). The accepted sense of binary dichotomy has drawn much criticism from feminists, as the ‘either/or’ phenomenon presented in society is regarded as complete, regardless of the social constructions and power relations that place these perceived binaries in existence (Sprague & Kobrynowicz, 2004). One is encouraged to make sense of the world by categorizing and labelling ‘things’, usually in a pattern of opposition, for example: mind/body, public/private,
nature/nurture (Cassell & Jenkins, 1998; Sprague & Kobynowicsz, 2004; Stepulevage, 2001). The ‘either/or’ dichotomy does not allow for complexity evident within people or in social practice. Critical theory rejects the acceptance of binary dichotomies (Best & Kellner, 2003) and seeks to illuminate the possibilities inherent between the two ends of a continuum (Coker, 2003). The employment of feminist (critical) theory and Bourdieu’s social theory combine well as both of these theories are anti-dualistic (Adkins, 2004a).

In the design, conduct and analysis of this research I have drawn extensively on the many writings of Bourdieu whose theory of practice I seek to employ throughout this text, to reflect the complexities of social practice and that which it comprises. Bourdieu’s theory of practice offers insights and understandings not readily visible in other approaches (Grenfell & James, 2004). Though Bourdieu is commonly associated with analysis of class, his theory of practice can also be used to shape other kinds of research.

Bourdieu is particularly useful for allowing me to conceptualise the ‘problem’ of teenage technological expertise in a social/sociological context – the key gap in the literature – and for mapping the specific practices, dispositions and behaviours associated with the production and performance of technological expertise. In order to look in sufficient detail at my participants, I need also to attend to the issue of gender. To facilitate this, I will draw upon the work of feminist authors such as Lisa Adkins, Beverley Skeggs, Diane Reay, and Toril Moi, whose texts not only complement, but also extend Bourdieu’s writings. It is important therefore to begin with an introduction to the key concepts of Bourdieu that shape the design and analysis of this research project.

Bourdieu’s formula for studying social practice was written as “(Habitus x Capital) + Field = Practice” (Bourdieu, 1984). I will explain each of these terms in turn – *habitus*, *field*, and *capital*. After introducing these key terms, I will introduce some texts whose authors have employed Bourdieu’s social theories alongside feminism in order to outline the particular feminist lens that I have used to read the data of the thesis, given that feminism is itself a broad reaching, disputatious term.
3.2.1 Habitus

Habitus is that presence of the past in the present which makes possible the presence in the present of the forth-coming (Bourdieu, 2000, p. 210).

*Habitus* is a concept used to explain the dispositions that influence individuals to become who they are, and yet also includes the conditions of existence (Bourdieu, 1990) which are displayed everyday in their relations to society in and through individual activities. Habitus explains how the body is present in the social world as well as the social world being present in the body (Reay, 2004). While dispositions make up a person’s habitus (Bourdieu, 1998), habitus is also formed by an individual’s history. As Nash (1999) explained, habitus discloses the traces of its origins in practice (p. 176). Habitus encompasses how people act in a way that is reflective of social structures and their process of socialisation, which is in turn reproduced by their actions. Adkins (2004b) stated that habitus generates and shapes perceptions and actions.

Dispositions include habits, beliefs, values, tastes (Reed-Danahay, 2005), bodily postures, feelings, and thoughts that Bourdieu argued were socially constructed (Bourdieu, 2000). Dispositions are formed by history; they are made, not inherent, and they are inculcated from the past into the present (Bourdieu, 1990). By inherent and inculcated, I mean that the social agent’s dispositions are embodied and internalised in the social agent’s view of the world, and in ways of moving and acting in the world. The inculcation of dispositions (Bourdieu, 2001) happens throughout childhood as children watch and listen (and physically experience their surroundings, environment and relationships). Therefore the cultural capital of those they are surrounded by (predominantly their family) becomes part of their habitus. Lovell (2000) claimed that

Habitus names the characteristic dispositions of the social subject. It is indicated in the bearing of the body (‘hexis’), and in deeply ingrained habits of behaviour, feeling, thought (p. 12).

Bourdieu referred to the general nature of societal habitus, but as habitus is multi-layered (Reay, 2004) he claimed dispositions were more specific at the individual level.
As habitus is a product of history (Bourdieu, 2000), which in turn produces more history (Bourdieu, 1990), in addressing the key research questions, this thesis will examine the system of dispositions (Bourdieu, 1990) of each participant in the field of out-of-school leisure, which is where their expertise has been constructed, developed, and established.

In terms of understanding Bourdieu’s epistemology in reference to habitus, the following quotation demonstrates a relationship with the world and an exposure to the world that constitutes knowledge, which in turn enables an agent to be oriented towards that knowledge:

Habitus, a particular but constant way of entering into a relationship with the world which contains a knowledge enabling it to anticipate the course of the world, is immediately present, without any objectifying distance, in the world and the ‘forthcoming’ [l’a venir] that it contains (which distinguishes it from a mens momentanea without history). Exposed to the world, to sensation, feeling, suffering, etc. in other words engaged in the world, in play and at stake in the world, the body (well) disposed towards the world is, to the same extent, oriented towards the world and what immediately presents itself there to be seen, felt and expected: it is capable of mastering it by providing an adequate response, having a hold on it, using it (and not decoding it) as an instrument that is ‘well in hand’ (in the terms of Heidegger’s famous analysis) and which, never considered as such, is run through, as if it were transparent, by the task that it enables the agent to perform and towards which it is oriented (Bourdieu, 2000, p. 142).

It is pertinent that I explicate the importance of power to Bourdieu’s theory in the construct of habitus – something that Woodfield (2000) clearly described:

Habitus plays a significant part in the attempt by one group to gain, and/or maintain, power over another. It both produces and expresses hierarchical difference, and with expression comes reinforcement. Indeed, the manifestations of different dispositions are functions of symbolic power struggles between those occupying distinct social spaces and possessing concomitant sets of divergent interests; these symbolic struggles are in turn functions of struggles over material resources (p. 153).

Woodfield (2000) explained this outworking of habitus and power by the following example: when new members of a dominant group are socialized, an individual has either the ‘right’ disposition(s) or has been given the ‘right’ disposition(s) so that the new members appear to be selected because they already had the required qualities.
Habitus enables the social practice to be observed in one’s life trajectory (therefore what I have examined in the lives of the participants). Hodkinson (1998) relates how life trajectory and habitus interrelate:

From childhood, young people amass conceptual structures (schemata) which serve as tools for understanding aspects of their experiences (Rumelhart, 1980). A schema structures what a person knows of the world, by filtering out ‘irrelevances’ and allowing sense to be made of partial information. In this way, two lights seen from a car in the dark can be turned into a cat or an approaching vehicle. A repertoire of schemata contributes to the dispositions that make up habitus. As new experiences are gained, schemata are modified and developed and as they change so does what is recognized in the surrounding world. In this interactive way, the life history of the individual shapes and is shaped by his/her common sense experience. In choosing any action an individual uses his/her own dispositions. We finally conclude that no one can step outside such personal development and therefore decision-making can never be context free (p. 97).

An example of habitus is a churchgoer who through her church attendance learns the dispositions and practices of that church, and therefore in her acceptance of the “structured structures” (Bourdieu, 1990, p. 53) she becomes part of the “structuring structures” (Bourdieu, 1990, p. 53), all of which constitute the social practice considered appropriate by the church as a group. Bourdieu (1990) referred to the systematic social order that takes advantage of the body’s disposition to memorize states of being in great collective ceremonies and the like, which then can be reactivated through the body’s capacity to act in ways specific to such occasions. Therefore the social order recreates the social order. Though the field is likely to remain the same in each church, as a result of the similar negotiation of habitus and capital by those in the field, a comparable social practice would be exhibited.

For the purpose of this thesis I will define habitus as internalised principles resulting from one’s upbringing (structured structures) that result in an agent’s action and view of the world, comprising dispositions that reflect the ongoing construction of an agent’s social position (structuring structures). It is important to acknowledge, of course, that the concept of habitus has been subject to some critique, and I will look briefly at this in the next subsection.
3.2.1.1 Criticism of habitus

One critique of Bourdieu’s concept of habitus is that it appears to limit an individual to reproduce only what they know – reproduction being a limited and satisfying way of describing one’s ability to act on the world. In other words, the concept of habitus has been critiqued as being overly deterministic (Lovell, 2000), reflecting a lack of agency. Webb et al. (2002) defined agency as “the idea that individuals are equipped with the ability to understand and control their own actions, regardless of the circumstances of their lives” (p. ix). Reay (2004) challenged this criticism and argued:

While habitus reflects the social position in which it was constructed, it also carries within it the genesis of new creative responses that are capable of transcending the social conditions in which it was produced (p. 434-435).

Bourdieu himself grew up in a poor, rural, farming community (see Reed-Danahay, 2005), but was able to negotiate a new field of academe. However, problems resulted from this, as his former acquaintances rejected him because of his actions in moving out of what he knew and out of what they knew (peasant farming). He referred to himself as a “class defector” (Reed-Danahay, 2005, p. 27).

I acknowledge that the concept of habitus is contestable and still heavily debated in current academic circles (see Nash, 1999; Robbins, 1998). I present quotations from Reed-Danahay (2005) to illustrate this ongoing debate:

Bourdieu’s “formal rival in France, Alain Touraine (2002: 103; Reed-Danahay’s translation), wrote in an essay assessing Bourdieu’s work after his death that his strongest thesis, that of the habitus, ‘was on one of the great questions of philosophy and sociology: how can an individual have freedom while captured in multiple constraints and determinisms?’” (Reed-Danahay, 2005, p. 16).

Bourdieu was outraged at “those who did not understand that his theories could be liberating for those who seriously listened to them. He felt he had been misunderstood (by what he called ‘fast readings’ of his work) to imply that resistance was impossible and that social life is determined by the structures of domination; at the same time, he felt misunderstood by those, alternatively, who thought his work implied a theory of rational action, to which he was adamantly opposed” (Reed-Danahay, 2005, p. 17).
Michael Grenfell (2006, personal communication) claimed that, after habitus as a basic concept was first introduced in the 1950s, Bourdieu developed and extended the concept substantially, yet simplistic understandings seemed to prevail. This occurred despite the continuing maturation of his conceptual theory. This highlights that Bourdieu himself did not see the concept of habitus as deterministic, but more as a means for helping to understand and explain the logic of practice. As people continue to employ Bourdieu’s theory of practice in their writings and data analysis, it is arguable that, as with the feminist authors listed above, new texts continue to complement and extend Bourdieu’s theory.

The concept of habitus, as the above overview demonstrates, is clearly fundamentally connected to the field within which habitus is developed. Grenfell and James (1998) used the useful image of “fish in water” (p. 14) to describe the mutually constitutive nature of habitus and field. As the concepts are based on “identical generating principles and there are structural homologies between the two” (Grenfell & James, 1998, p. 16), it is appropriate that I explain next the concept of field.

3.2.2 Field

Bourdieu (1992) defined a field as a “configuration of relations between positions objectively defined, in their existence and in the determinations they impose upon the occupants, agents or institutions” (p. 72–73). A field is Bourdieu’s metaphor for representing sites of cultural practice (Webb et al., 2002). One example is the field of education, which encompasses everything relating to schooling of all ages. There are many smaller fields within this field such as tertiary education, vocational education, early childhood education, and educational policy. In addition, some fields have more power than other fields. In complete contrast, another example of a site of cultural practice is that of playing live music in clubs and pubs. Within this field, there are smaller fields or fields within the field such as being a DJ, being a sound engineer, and playing originals or covers in a rock band. One has to learn the terms of discourse, the accepted practice within the field, and how to behave (accepted or acceptable dispositions) in each field in order not to stand out like a sore thumb, colloquially speaking (unless of course, one’s desire is to stand out).
Habitus and field only function in relation to each other and can be described as a fish (habitus) in water (field) (Grenfell & James, 1998, 2004). To take this point further, Grenfell (1998) has argued that “Habitus brings with it field and field the notion of habitus” (p. 87). The conventions and organization within a field determine the appropriate discourses and activities that are used, which additionally determines what capital is valued. Within each field (social space), there is that which is excluded, and that which is included. These contexts (fields) shape and produce praxis.

The acceptable praxis in a field arises from the hierarchical ruling principles that govern a field. However,

It appears as if everyone is free to play, everything is negotiable. If it were not, the ‘rules’ of the games themselves would not be accepted. Everyone plays, but differential structures ensure that not everyone is equal. This misrecognition is an essential component of the legitimate and the social processes described (Grenfell & James, 1998, p. 25).

This notion of misrecognition of social practice will be addressed in chapter seven.

Bourdieu described the other factors that are present in a field:

The principle of vision and division and the mode of knowledge (religious, philosophical, juridical, scientific, artistic, etc.) which prevails in a field, in association with a specific form of expression, can only be known and understood in relation to the specific legality of that field as a social microcosm (Bourdieu, 2000, p. 99).

Each field can be part of a bigger field, but each field is delimited:

Like the artistic field, each scientific universe has its specific doxa, a set of inseparably cognitive and evaluative presuppositions whose acceptance is implied in membership itself. These include the major obligatory pairs of opposites which, paradoxically, unite those whom they divide, since agents have to share a common acceptance of them to be able to fight over them, or through them, and so to produce position-takings which are immediately recognized as pertinent and meaningful by the very agents whom they oppose and who are (p. 100) opposed to them. These pairs of specific opposites (epistemological, artistic, etc.) which are also social oppositions between complicit opponents within the field, define – in politics too – the space of legitimate discussion, excluding any attempt to produce an unforeseen position as absurd, eclectic or simply unthinkable (Bourdieu, 2000, p. 101).
Bourdieu likened knowledge of a field and its practices to knowing the “stakes of the game” (Bourdieu, 2000, p. 151) or knowing the “rules and principles of the game” (Grenfell & James, 1998, p. 20). From there, strategies that an agent may use to act on the world come from an agent’s ability to “play the game” (Reed-Danahay, 2005, p. 35) and/or take advantage of the opportunities that come his/her way. Bourdieu claimed that the code of culture (rules of the game) is not imposed and fixed as a way of being. Actions and ways of being can be generated, created, and invented, though they are limited within structuring mechanisms. Grenfell and James (1998) claimed that “many of the rules and principles of the game go on in a way that is not consciously held in the heads of those playing it. It is played out in terms of forces of supply and demand, of the ‘products’ of the field – the symbolic capital” (p. 20, emphasis in original).

The field that I will apply Bourdieu’s theory to is the field of teenagers’ out-of-school leisure. Bourdieu’s theory will help me to describe, understand, and investigate the social practice found in this field through the application of descriptions of capital and habitus within this field. Grenfell and James (2004) claimed that capital was both a “product and process within a field” (p. 510); hence the link between field and capital, and it is to this concept that I will now turn.

3.2.3 Capital

The term capital has multiple meanings within Bourdieu’s framework. Bourdieu uses economic capital as the basis for writing about and developing the concepts of other capitals, that is, cultural, social, and symbolic. Bourdieu (1986) described three types of capital in the following manner:

Capital can present itself in three fundamental guises: as economic capital, which is immediately and directly convertible into money and may be institutionalised in the form of property rights; as cultural capital, which is convertible, on certain conditions, into economic capital and may be institutionalised in the form of educational qualifications; and as social capital, made up of social obligations (‘connections’), which is convertible, in certain conditions, into economic capital and may be institutionalised in the form of a title of nobility (p. 47).

Each of the capitals that Bourdieu described is the product of an investment of an appropriate kind, from which an investment can be secured and returned (Moore,
2004), and is also symbolic, neither actually concrete nor physically present, though it is possible for physical representation of capital to exist, for example, having the ‘right’ accent in speech. To explain further the link between field and capital:

Bourdieu reasons that capital attracts capital, as like attracts like, and the various forms are, in many ways, inter-convertible. So, for example, high academic qualifications traditionally tend to ‘buy’ good jobs with good salaries. Yet, at the same time, as ‘players’ in the market acquire more capital, it becomes devalued. For example, there is qualification inflation, where over time a given level of certification no longer guarantees the same prestigious jobs. Capital exists in ever changing configurations in relation to the fields which generate it, and, the values of its three forms are constantly being renegotiated in implicit and explicit ways (Grenfell & James, 1998, p. 21).

In understanding capital, it is important to remember that capital is accumulated over time. In addition, forms of capital are intertwined in that most forms can be converted into other forms.

3.2.3.1 Economic capital

Capital in any form is recognised within Bourdieu’s framework as a valuable resource. In regard to economic capital, the valuable resource is money, and economic capital is interested in increasing monetary profit in contrast to the other types of capital. Money may be institutionalised through the titles to properties.

Bourdieu (1986) proposed that economic capital was at the root of the other types of capital, and that the other forms of capital were transposable and disguisable forms of economic capital. Indeed, there seems to be a strong link between the “having” of money and the acquisition of cultural, social, and symbolic capital – a point that shall be argued later. This suggests that one cannot have cultural capital without economic capital.

One of the main differences between economic capital and the other capitals is that money and property titles can be transmitted instantly through gift, trade, or purchase. Other forms of capital require economic capital and investment of time in order to be acquired. Moore (2004) claimed that economic capital translates into cultural capital, but economic capital still must be spent to acquire objectified cultural capital (material objects). A person who wins a lottery may have no previous cultural capital so, in order for the economic capital to be transubstantiated
to cultural capital, s/he must choose to spend his or her economic capital on cultural capital objects to begin with in order to obtain some cultural capital. Of course, not all forms of cultural capital (including those associated with ‘taste’) can be bought; it is worth pursuing the notion of cultural capital in more detail.

3.2.3.2 Cultural capital

Webb et al. (2002) defined cultural capital as “a form of value associated with culturally authorised tastes, consumption patterns, attributes, skills and awards” (p. x). If one has cultural capital, one has invested in cultural assets and embodied social attributes, which seems to be a natural occurrence - yet cultural capital is socially conferred (Moore, 2004). The cultural capital found in the habitus of one’s family and class becomes their cultural capital also.

Bourdieu related how he came to consider capital in his theorizing: “The notion of cultural capital initially presented itself to me, in the course of research, as a theoretical hypothesis which made it possible to explain the unequal scholastic achievement of children originating from the different social classes by relating academic success” (Bourdieu, 1986, p. 47). This highlights the fact that much of Bourdieu’s writings deal with issues of education (Grenfell, 2004).

Bourdieu (1986) claimed that cultural capital exists in three states – embodied, objectified and institutionalised. Table 2 explains these three states of cultural capital.
<table>
<thead>
<tr>
<th>Embodied state</th>
<th>Objectified state</th>
<th>Institutionalised state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispositions (temperaments) of the mind and body</td>
<td>Cultural goods (pictures, books, dictionaries, instruments, machines)</td>
<td>Educational qualifications</td>
</tr>
<tr>
<td>Character and virtues (morals)</td>
<td>Material objects</td>
<td>Certificates, Diplomas, Degrees</td>
</tr>
<tr>
<td>Cannot be transmitted, that is, given to, or bought by someone else</td>
<td>Through the purchase of fine art, the acquisition of a library, possessing high-tech equipment, one has bought cultural capital with economic capital</td>
<td>Qualifications can be used as a rate of conversion between cultural and economic capital, similar to ‘human capital’ whereby one gains a qualification, which then amounts to possessing more earning power</td>
</tr>
<tr>
<td>Quality of speech</td>
<td></td>
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<tr>
<td>Demeanour</td>
<td></td>
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<tr>
<td>Can be increased by investing time into self improvement</td>
<td>Quality of dress (clothing)</td>
<td>The pieces of paper confer cultural competence on the holder</td>
</tr>
<tr>
<td>Becomes a type of habitus</td>
<td></td>
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Table 2 - The States of Cultural Capital (Bourdieu, 1986)

This table and its definitions of the states of cultural capital will be drawn on in chapter five to analyse the capital of the participants.

Bourdieu asserts that ability and talent are both a product of the investment of time, which comes from possessing economic capital that affords agents to invest the time:

If the best measure of cultural capital is undoubtedly the amount of time devoted to acquiring it, this is because the transformation of economic capital into cultural capital presupposes an expenditure of time that is made possible by possession of economic capital. More precisely, it is because the cultural capital that is effectively transmitted within the family itself depends not only on the quantity of cultural capital, itself accumulated by spending time, that the domestic group possess, but also on the usable time (particularly in the form of the mother’s free time) available to it (by virtue of its economic capital, which enables it to purchase the time of others) to ensure the transmission of this capital and to delay entry into the labour market through prolonged schooling, a credit which pays off, if at all, only in the very long term (Bourdieu, 1986, p. 54).
The participants in this study acquired their cultural capital from being computer experts, owing to the amount of time they have been able to spend on the computer, which is a direct result of the economic capital of their families. As I have explained economic and cultural capital, I now turn to explaining social and symbolic capital in the next sub-subsection.

3.2.3.3 Social capital and symbolic capital

According to Bourdieu, a person with a title of nobility (e.g. duke, duchess, earl, lady) has a great deal of social capital. It is of course symbolic and cannot generally be earned; it is a credit that has been given because of a durable network (Bourdieu, 1986). Other titles of nobility such as Officers of the Order of Merit or being deemed the ‘Australian of the Year’ are examples of social capital conferred and awarded on the holders by others who have a great deal of social capital. While these constructed structures demonstrate social capital in the developed western world, it is arguable that a member of the British monarchy, for instance, may not have the same status in a communist country, as though s/he would retain his title, her/his position may not be as valued or esteemed.

Social capital and symbolic capital are closely linked. Bourdieu (1986) went as far as to say that any form of social capital is actually symbolic because it is so “totally governed by the logic of knowledge and acknowledgement” (p. 57). For example, symbolic capital, that is, implied capital, can be given only to those by those who recognize it. Capital is taken as natural, that is, a person’s attribute. Symbolic capital exists only through the esteem and recognition of those who believe in its existence; therefore social capital is seen as a tool for reproduction of the dominant class. The dominant class relies on the dominated class for the symbolic capital to be perpetuated. Bourdieu further explained the link between symbolic domination and habitus:

Domination, even when based on naked force, that of arms or money, always has a symbolic dimension, and acts of submission, of obedience, are acts of knowledge and recognition which, as such, implement cognitive structures capable of being applied to all the things of the world, and in particular to social structures. (Bourdieu, 2000, p. 172).

An example of this symbolic force could be in the form of a rich businessman (e.g. Donald Trump), who because of his wealth has a lot of influence in various areas
(most recently in television). Symbolically, power is associated with wealth therefore persons who comply with his initiatives recognise his power. Indeed, in some cases, some persons may be forced to concur with his will, because their symbolic capital is far less than his. Fidel Castro, in communist Cuba, has much symbolic capital in the form of arms, which of course ensures obedience to his initiatives and symbolic domination of the Cuban people. Of course, the use of arms would contribute to the physical domination of the Cuban people. But in both examples the belief in symbolic capital is reproduced for further generations.

Both social capital and symbolic capital conceal their relationship to economic capital, and cultural and social capital can never be completely reduced to an economic form. Therefore cultural capital cannot be a direct transubstantiation of economic capital (Moore, 2004). Each of these forms of capital evident in the lives of the participants will be highlighted throughout the data analysis chapters, in specific relation to the field of out-of-school leisure by technological experts, and in relation to the general and specific habitus of the participants in this study. Now I turn to focus on how habitus, capital, and field shape one another differently in respect to French and New Zealand societies.

3.2.4 The habitus of different societies and cultures

Because Pierre Bourdieu was French and wrote his theory of practice based on his experiences in France, it is important to reflect upon the relationship between and understanding of the application of concepts utilised in an arguably contrasting environment, that is, New Zealand. This highlights that I am aware of the need to reflect continually upon my habitus as a researcher, and the habitus of the researched, not to mention the capital that I value compared to the capital valued by the participants in this study. Therefore the thesis attends to the specific characteristics of habitus and field in the New Zealand context. As I am a New Zealander, the way I have conducted this research reflects my habitus within the field, which may be in contrast to researchers with other predispositions (habitus). Using Bourdieu’s theories to examine New Zealand society must be qualified by the fact that his views or values as a Frenchman may be in direct contrast to the views and values held by many New Zealanders, and New Zealand society as a construction. Examples of difference between France and New Zealand include the length of recorded history - that is, France has a long European history over many
centuries, whereas in the 1700s the British who are a traditional rival of France colonized New Zealand. The emphasis in France on academic tradition, intellectualism, and education (Bourdieu, 1986, 1990, 1991, 2000, 2001; Reed-Danahay, 2005) is of marked difference from New Zealand, where by contrast Law, Campbell and Dolan (1999) suggested that sport and sportspersons (especially male athletes) are highly valued. Brabazon (2000) highlighted the *symbolic tie* between the United Kingdom and New Zealand, and historically, as French and British relations have been noted to be antagonistic, it is with that in mind that I argue that Bourdieu’s theories are not authoritative (dogmatic), but provide an interesting lens through which to view society and sociocultural praxis.

James and Saville-Smith (1989) argued that New Zealand was a gendered culture:

That is, a culture in which the intimate and structural expressions of social life are divided according to gender. Notions of masculinity and femininity are a pervasive metaphor which shape not merely relations between the sexes, but are integral to the systematic maintenance of other structures of inequality as well. Inequalities of sex, race and class in New Zealand are tied together by and expressed at a cultural level through the organization of gender relations (p. 7).

James and Saville-Smith (1989) maintained that gender is the motif or preoccupation of New Zealand society. Indeed, Brabazon (2000) highlighted the gendered discourse that can be found within many New Zealand films. Because Bourdieu focused on class, and the power that results from class, it is important that I incorporate elements of feminism into this study, as gender relations are crucial in the construction of New Zealand’s culture, and consequently in its study. Because gender is not a primary focus in Bourdieu’s writings, I wish to draw upon recent feminist extensions of Bourdieu’s concepts to maximise the impact of my research. Adkins (2004a) argued that Bourdieu’s theoretical apparatus does have relevance for feminism; hence the next section demonstrates how feminism and Bourdieu’s theory of practice can be aligned.

### 3.3 Feminism and Bourdieu

One of Bourdieu’s reasons for the development of his social theory was to overcome dualisms present within society, that is, a fixation with binary oppositions and explanations, which causes understanding of phenomena to be over-simplistic, and
does not provide an apt framework to reflect the complexities found within society (McCall, 1992). I now focus on feminist readings of Bourdieu, that is, literature that has employed Bourdieu’s social theories alongside feminism.

As an opening move it is obviously important to acknowledge that feminism is a broad field and that there are many different versions of feminism in both the historical sense – including the variations among first, second and third waves of feminism – and in the immediate sense, where today ‘feminism’ relates to political positions associated with liberal, radical, Marxist, post-structural and post-colonial perspectives with an associated diversity of interests in factors such as sexuality, race, and disability. Olesen (2000) made the point that:

If any attribute could be said to characterise qualitative feminist research since the 1960s and the start of the so-called second phase (at least in the United States) of the women’s movement, it would be increasing complexity in the feminist research: the nature of research, the definition of, and relationship with those with whom research is done, the characteristics and location of the researcher, and the very creation and presentation of knowledge created in the research (p. 217).

She also emphasised that:

. . . the emergent complexities moved feminist research from justly deserved criticisms of academic disciplines (Stacey & Thorne, 1985, 1996) and social institutions, and of the lack of or flawed attention to women’s lives and experiences, to debate and discussion of critical epistemological issues. Paramount among these has been a growing recognition of the differentiation of persons with whom the research is done, the concomitant fading of the concept of a universalised ‘woman’ or ‘women’, and concerns about the researchers’ own characteristics. Major strands within contemporary feminist research have fuelled these growing and now mostly accepted awarenesses (p. 220).

A key point here is that much of the work of early, third wave feminists was focused on differentiating themselves from earlier feminists. These efforts have produced a kind of feminist research tradition where many of the most hotly debated issues of the 1980s and 1990s (including the euro-centric nature of much early feminist writing) have become well accepted. This means, among other things, that to align oneself with broadly feminist research within sociology or critical theory or cultural studies – as I am doing in this thesis – is to accept the key points of feminist writing in this era over the past fifteen years. Specifically, in this thesis I am acknowledging
the emphasis within the contemporary feminist research – in the broadly post-modern tradition – on such factors as diversity of the category ‘woman’, the impact of social structures on identity formations, the fluid nature of identity, the associated value of multiple forms of data collection, and a recognition that meaning is culturally and historically produced.

Authors such as Adkins (2004a, 2004b) and Skeggs (1997, 2004) have not only used Bourdieu’s social theory, but also critically extended and developed it to address issues relevant to contemporary feminists, including the nexus among between class, gender and sexuality. These authors attest to the “powerful tools” (Adkins, 2004a, p. 3) found in Bourdieu’s social theory that are offered to contemporary feminist theory, which Adkins alluded to in this quotation:

Feminism itself no longer posits the sex/gender distinction as one of its key objects, a social theory which does not place the concept of gender as central to its vision of the social – and particularly one which has at its core a critique of idealist thinking – precisely opens itself out to contemporary feminism (Adkins, 2004a, p. 4).

Bourdieu has been criticized for his “androcentric treatment of gender in the formation of social structural positions (via forms of capital) and dispositions (habitus)” (McCall, 1992, p. 839, emphasis in original). However, because both Bourdieu and feminists embrace reflexivity (Lovell, 2000), feminists can use Bourdieu’s theories to uncover elements of androcentric bias (McCall, 1992), and develop areas of contention. Specifically in relation to how gender is viewed, Adkins offered an explanation based on how Moi employed Bourdieu in her writings:

Focusing on the object of gender and especially the question of whether or not gender can be understood as a (Bourdieuian defined) field of action, Moi argued that rather than a specific, autonomous field, gender is far better conceptualised as part of a field. This field is not one of Bourdieu’s autonomous fields (such as the legal or educational field) but is Bourdieu’s general social field. Gender is best conceptualised in this way, Moi argued, since gender is extraordinarily relational, with a chameleon-like flexibility, shifting in importance, value and effects from context to context or from field to field. Thus, much as Bourdieu himself defined social class as structuring social fields, Moi suggested that gender should also be understood in these terms, that is as dispersed across the social field and deeply structuring of the social field. Such a conceptualisation leads to an understanding of gender not as an autonomous system but as a ‘particularly combinatory social category, one that infiltrates and influences
From this perspective, gender is not ‘a’ field, but a social category that affects every other category and field; this includes how gender is viewed in the fields of technology and expertise. While gender may not be an all determining factor of one’s life trajectory, it still influences, shapes and pervades every other category and field.

For Bourdieu, and for those feminists who draw on Bourdieu, it is argued that femininity can be viewed as a form of cultural capital (Skeggs, 1997). However, Skeggs stated that:

Each kind of capital can only exist in the interrelationships of social positions; they bring with them access to or limitation on which capitals are available to certain positions. They become gendered through being lived, through circulation, just as they become classed, raced and sexed: they become simultaneously processed. The social relations of capitals into which we are born and move have been constructed historically through struggles over assets and space. Gender, class and race are not capitals as such, rather than provide the relations in which capitals come to be organized and valued. Masculinity and Whiteness, for instance, are valued (and normalized) forms of cultural capital (Skeggs, 1997, p. 9).

Skeggs (1997) argued that femininity is not a strong form of cultural capital that can be traded and capitalized upon, compared to masculinity which is dominant, legitimate, profitable (McCall, 1992), and has unlimited power:

For girls it can only offer a limited form of capital if they conform to gender normacy. For boys it offers masculine power, institutionalised in the school as a form of symbolic capital that (as with the family) represents accumulated privilege in other fields (Skeggs, 2004, p. 22).

McCall (1992) argued that gendered forms of embodied cultural capital, that is, that of bodily appearance (size, beauty), are valued in certain social spaces, because they are symbolic of masculine hegemony. If gender is a category that is present amongst all fields, and if habitus and the field are mutually constituting (Grenfell & James, 1998), or “deeply interdependent” (Moi, 1991, p. 1020), it is also fitting that . . . the habitus thus produces enduring (although not entirely fixed) orientations to action. But while the habitus structures and organizes action it is also generative. Specifically, the habitus is
productive of individual and collective practices; practices which themselves are constitutive of the dispositions of the habitus (Adkins, 2004b, p. 193).

Therefore gender has been generated through the interrelation of habitus, field, and capital. Gender is a ‘lived’ social relation (McNay, 2004) that is centrally normalized and naturalized through the family as a fabrication and social artefact (Skeggs, 2004) - a premise agreed on by both contemporary feminists and Bourdieu. Finally, Moi argued against a hierarchy or privileging of class over gender and vice versa:

My own tentative view is that we may try to see both class and gender as belonging to the ‘whole social field’ without specifying a fixed and unchangeable hierarchy between them. The advantage of such an approach is that it enables us to escape a futile dogmatism which would declare the absolute primacy of class over gender or of gender over class (Moi, 1991, p. 1035).

This premise, coupled with the general consensus of feminism and Bourdieuan views to be anti-essentialist (Moi, 1991), demonstrates how these two approaches can be brought together to address the questions at the heart of the research.

3.4 Summary of methodology
This chapter explained some of the epistemological and ontological issues surrounding the researcher and the conduct of this research project. The social theory of Pierre Bourdieu was introduced and his key concepts of habitus, field and capital were explained. The value of taking a broadly feminist approach in the application of Bourdieu’s theory was also explored. The next chapter explains the research aims, questions and methods of data collection and analysis employed in the study.
4.0 Research Design

Social facts are objects which are also the object of knowledge within reality itself because human beings make meaningful the world which makes them (Wacquant, 1992, p. 7).

This chapter discusses the methods and techniques I used in this study, illustrating how Bourdieu’s social theory and feminist theory shaped the design of this research. It outlines and justifies the research design and illuminates the connection between theory and employed methods. It includes a description of the data collection techniques and the data analysis techniques as well as explaining details regarding the sampling of participants, the period and type of engagement, issues of rigor, ethical considerations, and limitations of the study. The chapter concludes with an introduction to the eight participants involved in the study, and a brief summary of this chapter.

Research methodology refers to the ideology or reasoning used to conduct research (Gale, 1998; Harding, 1987, cited in Holland, Blair & Sheldon, 1995). The research methodology and consequent research methods are influenced by the research paradigm, the social theory one ascribes to, and the epistemology that underlies the theoretical framework which was elucidated in chapter three. Research methods refer to the data collection and data analysis techniques employed to gather evidence (Harding, 1987, in Holland et al., 1995).

4.1 Research aims and methods

The following three research questions guided and focused the study.

1. In the field of out-of-school leisure, how is expertise obtained, constructed and performed by a group of New Zealand teenagers?
2. How does the habitus of this group challenge and/or agree with traditional/adult notions of expertise?
3. In what ways is the teenagers’ cultural and social capital recognized and valued at home and at school?

Bourdieu’s notions of field, capital, and habitus are included in each chapter as these components of his social theory intertwine and do not stand-alone. However, chapter five focuses on describing the field, dispositions within the field, and forms of capital within the field. Chapter six focuses more on the habitus while chapter seven
discusses how the capital of the teenagers is (mis)recognized and valued at home and at school.

4.1.1 Why qualitative methods?
As Bourdieu was influenced by phenomenology (e.g., Merleau-Ponty [1962] and Heidegger [1978, 2000], who both drew on the theories of Edmund Husserl), and as “qualitative research draws from the philosophy of phenomenology in its emphasis on experience and interpretation” (Merriam, 1998, p. 15), it is appropriate that I use qualitative research methods. Both phenomenology and qualitative research methods focus on the essence or basic structure of experience, which is arguably part of Bourdieu’s theory of practice. Bourdieu himself was an anthropologist and conducted ethnographic studies on the traditional society of Kabyla (the French colony of Algeria) and of rural France. Ethnographic studies entail observations and interviews, which Bourdieu wrote much about; hence the sole use of qualitative methods fits with my theoretical perspectives.

Qualitative research and methods focus on the nature of a thing (Kirk & Miller, 1986). The employment of qualitative methods for data collection and fieldwork strategies is for the purpose of making observations that yield “detailed, thick description; inquiry in depth”, and “careful document review” (Patton, 2002, p. 40). McCracken (1988) outlined the differences between quantitative and qualitative research:

The quantitative researcher uses a lens that brings a narrow strip of the field of vision into very precise focus. The qualitative researcher uses a lens that permits a much less precise vision of a much broader strip (p. 16).

He added that quantitative and qualitative research observes different realities, or different aspects of the same reality (p. 18), but that qualitative research is more intensive than extensive in its objectives.

As stated earlier, quantitative research is more often than not associated with positivism and mainstream research (Abbott et al., 2005). Although it is important not to fall into stereotypical or caricatured representations of either quantitative or qualitative research, for the kind of research that this study aimed to undertake, qualitative research methods are appropriate in that they seek to capture complexity,
and illumination of assumptions and categories, rather than acquire quantity and precision of data (Jayaratne & Stewart, 1995). The purpose of some qualitative research is to understand the world from the perspective of those people being observed, and their construction of reality (Merriam, 1998).

The study used a range of qualitative data collection techniques to address the key research questions. These techniques reflect the broadly sociological and anthropological interests of Bourdieu.

4.2 Snowball sampling

Participants were selected through what is known as snowball sampling (Patton, 2002), where participants recommended others who fitted certain criteria, and who were beyond the range of people whom I knew personally. In this study, the phenomenon of interest – the teenage experts – was selected because they were in some sense unique (Merriam, 1998).

As my aims did not include obtaining a representative sample, it was fitting that I used this form of purposeful sampling (Patton, 2002), where information-rich cases were selected for in-depth study. Patton (2002) described this approach as a strategy whereby “cases for study (e.g., people, organizations, communities, cultures, events, critical incidences) [sic] are selected because they are ‘information rich’ and illuminative, that is, they offer useful manifestations of the phenomenon of interest; sampling, then, is aimed at insight about the phenomenon, not empirical generalization from a sample to a population” (p. 40). Therefore, in light of the aims of this study, this type of sampling is appropriate, especially as the selection of illuminative case studies stems from my desire to choose case studies from which the most learning can occur (Patton, 2002).

I have two stepdaughters (aged 18 and 13 at the time of the study) and my first official meeting that commenced the fieldwork was with them to find out what they thought experts were and if they could recommend anyone whom they considered to be a teenage technological expert. My stepdaughters were unable to suggest anyone who they thought was an expert, and was also a teenager. My stepdaughters were excited as well and pleased to be involved, and though it was not an auspicious beginning, starting with family was a comfortable and safe place to begin. It was a
strategic and appropriate start to the fieldwork as I was excited about beginning the project and nervous about asking the initial questions.

Next, I asked a friend of mine if I could speak with her two daughters (aged 14 and 11). After scheduling a meeting at a convenient time, I met her daughters and asked them the same questions I had asked my stepdaughters. The elder one suggested Jake (pseudonyms are used throughout this thesis). I asked her to get in touch with him to see if he would be happy for me to contact him. This happened and I met Jake about a month later.

One afternoon, some friends of ours visited our home, and we got to talk about Charli who was with my youngest stepdaughter in another room, whom her parents considered to be a computer expert. I immediately went out of the room to go and talk to Charli and give her a plain language statement and consent form, and asked her to think about participating. After giving her a week or so to think it over, I rang her mother and then spoke to Charli, after which she agreed to participate.

My next meeting was with my husband’s work colleague’s stepdaughter (aged 14). I e-mailed the father and arranged to meet with the daughter. She was unable to suggest anyone whom she knew well enough to speak with first before I contacted them. By this I mean that she knew of teenage technological experts but did not know them personally.

As I was teaching guitar part-time, I asked five of my teenaged guitar students if they knew of anyone whom they could recommend as a teenage technological expert. These proved fruitful as one boy recommended his friend Chris and another boy recommended his friend Joe.

When I was at my tennis club one Saturday afternoon, one of the other players asked me what my PhD was about. I replied, “teenage technological experts”, and then he related that he had four of them – his sons. This led to finding Tom, one of the four brothers. Two were ineligible to participate, and the youngest one declined to participate.

Charli and Tom were able to suggest two more possible participants – Lisa and Tim
respectively.

The last participant Anne was found through a former teaching acquaintance who had had a lot to do with young adolescents interested in computers. This teacher recommended Anne, and through contact with her younger sister (who was in the teacher’s current class) I was able to meet Anne and inform her of what the project involved.

With each of the initial contacts (who were not actual participants), I kept a list of what they considered to be an expert, that is, the descriptors they gave of a technological expert, and I have included their comments in chapter five. I did not audiotape these initial meetings. I did not ask my guitar students what they thought was a technological expert as I focused on teaching them guitar, and not taking up their time that they had paid for guitar tuition with my research.

When talking with each possible participant, I stated and reiterated that they were under no compulsion to participate, and I believe that I did not coerce any of the participants to be involved. I thanked each one of the initial contacts for their involvement and for their contribution, and stressed their anonymity, especially as they were not actual participants.

4.3 Data collection methods
The thesis was developed across two stages – the first being the literature review that established the background to the research. The second stage was the research project, which used a qualitative inquiry approach. Often aligned with case study techniques, the qualitative inquiry approach was used to explore the habitus and capital surrounding the acquisition of computer expertise in the out-of-school field of leisure.

In this study, the use of ethnographic techniques (Merriam, 1998), that is, interviews and observations, is not only part of qualitative research methodology, but also part of Bourdieu’s anthropological roots. The employment of ethnographic techniques is also part of feminism’s focus on using post-positivist methods as a way to challenge androcentric, positivist science (Harding, 1991).
I focused on examining particular phenomena, understanding the phenomena in depth, and from that analysing the data phenomenologically (using Bourdieu’s theories) with a feminist lens. I did not seek to obtain findings that I could generalize.

According to Merriam (1998), humans are the best instruments for examining human data, especially phenomena in sociocultural contexts (Schwandt, 1990). The qualitative data collection methods employed the researcher as the data collection instrument, and involved observations, interviews and the researcher’s research journal. These will now be explained in turn.

4.3.1 Observations

The data gathered for the qualitative study were collected through employing ethnographic techniques. Initially, I conducted an observation with each participant. The observations were approximately an hour long each, and consisted of me observing the teenagers using a computer in a manner that they described as typical of their use on any given day. During the observation, I recorded what they did, and how they did it, and recorded most of what was said to me. I kept a detailed record of events in order to be credible and trustworthy, to ensure that the thick descriptions were incontestable in the final report. Sometimes I asked questions to clarify what it was they were doing and why. To demonstrate me seeking this clarification, here is an example from an observation with Tom:

Both computers were positioned in the room, and both times I have been there, both he and one of his brothers were playing on them. I asked whose room it was and what it was like having another brother coming in all the time. Tom said it was fine, just not when they came in early in the morning (observation excerpt, 25/5/2005).

Another example was when I observed Joe:

Joe will usually go on the internet for an hour, after which he gets “fed up” and will take a break, do something else, then come back to the computer. I asked him about this and he said, “Well if I don’t find anything interesting, or there’s no one to talk to [on MSN], I get fed up”. I asked him who made up that rule/guideline, and it seems to be self-imposed, but he admitted that he is allowed to spend more time on the weekend on the computer, yet weekdays is when he does his homework.

The second session was an interview. The third session usually combined an
observation and an interview. It should be noted that I was not a participant observer; I was in fact a detached observer (Olson, n.d.).

4.3.2 Interviews

Many authors argue that interviews are a pertinent and effective research method within social science (Agar, 1985; Bauer & Gaskel, 2000; Bourdieu, 1999; McCracken, 1988; Patton, 2002; Punch, 1986; Reinhartz, 1992). Using interview techniques enables a researcher to achieve vital objectives within a manageable methodological context (McCracken, 1988); that is, participants are able to have a voice within the context of the study and the technique makes this manageable. Open-ended interviews allow the opportunity for clarification and discussion and maximize discovery and description (Reinhartz, 1992). Interviewing offers researchers access to people’s ideas, thoughts, and memories in their own words rather than in the words of the researcher (Bourdieu, 1999; Patton, 2002). This enables the interview to be of benefit to the interviewee, and lessens the influence of the interviewer on the thoughts and words of the interviewee.

Open-ended interviews are a research technique used by both feminists and non-feminist scholars (Hesse-Biber, Leavy & Yaiser, 2004). The first objective in using such an interview is to allow respondents to tell their own story in their own terms (Bourdieu, 1999). The interview “aims at a true conversion of the way we look at other people in the ordinary circumstances of life” (Bourdieu, 1999, p. 614). During the interview, Bourdieu advocated that one needs to “perceive and monitor on the spot, as the interview is actually taking place, the effects of the social structure within which it is occurring” (Bourdieu, 1999, p. 608, emphasis in original). Furthermore, the interview encourages the social processes of talking and listening to achieve the goal of understanding.

Structured interviews are those which are conducted with a list of predetermined questions (Merriam, 1998). Though the interviews I conducted were of the formal nature of structured interviews, they were somewhat informal as I did not ask only the questions on the list; sometimes I did not ask all of the listed questions, nor did I ask them in the same order. I employed the use of open-ended questions so that in the answers the interviewee could answer how s/he wished. Before and during each interview, I stressed to the participants that they did not have to answer any question
they did not wish to, and that included questions that I asked on the spot. I did however, have a list of questions that I wished to ask participants and gave them the list of the questions before the interview, so that a) they had a chance to think about the questions, and b) they could make a choice about what questions to answer and not answer.

Through the use of these semi-structured, open-ended, semi-formal interviews, I encouraged participants to explain their perceptions, experiences, and attitudes. I hoped that this explanation would lead to the participants obtaining further self-knowledge and an awareness of how social arrangements may be oppressive (Schwandt, 1990). The concept was that, through using ‘grand tour’ questions (open-ended), the interviewee could select the words s/he wished to use, without using words (discourse) that I may have suggested (McCracken, 1988). This enabled the interviewees to respond in their own words without feeling inadequate to the task (Reinharz, 1992). Initially, questions were asked about the individual’s demographics in order to put the interviewee at ease, as arguably the answers are well known and comfortable to disclose (McCracken, 1988; Reinharz, 1992).

In order to illustrate how feminist theory and Bourdieu’s social theory influenced the questions I asked I now list questions that were asked in my interviews with participants (though it should be mentioned that not all of the following questions were asked of every participant). In brackets, I have written whether the question pertains specifically to feminism or to Bourdieu’s concepts (multiple concepts could be addressed in each question, but I have simply listed the most likely concept).

- Could you give me a general explanation of the technological things you do and are interested in? (field)
- How would you describe a technological expert? (field)
- Do you consider yourself to be a technological expert? (field)
- If so, how do you think you became an expert? (habitus)
- Do you think other people might become an expert in the same way you did? (field)
- What first interested you in computers? (habitus)
- When did you first use a computer? Why? (habitus/capital)
- Who taught you how to use a computer? (habitus)
- How do you learn new things now? (field/capital)
• Why do you think your parents first bought a computer for your use at home? (habitus)
• How relevant is school for you in comparison to what you wish to do in the future? (habitus)
• How does your confidence in your computer skills affect your attitude towards school? (habitus)
• Does your confidence in technological things affect anything else in your life? Like your attitude towards things out of school? (habitus)
• Some people say that boys are the usual computer experts, not girls. What do you think about that? (feminist)
• Most of the people I’m working with in my research are boys/males. What do you think about that? (feminist)
• Are there many girls/women in the fields that you are interested in? (feminist)
• Have you got an idea of what you would like to do in the future for a job or career? (habitus)
• How much time a day do you spend on a computer? (capital)
• Is your expertise in technology a significant part of your identity? (habitus)

I now turn to describing how a research journal was utilized in the data collection methods.

4.3.3 Research journal

Bourdieu was a philosopher, anthropologist, and sociologist (Grenfell, 2004), and believed reflexivity was a necessary part of the field of sociology (Kenway & McLeod, 2004). Adkins (2004b) argued for a situated reflexivity with regard to the use of Bourdieu’s social theory, which she described as:

. . . a reflexivity which is not separated from the everyday but is intrinsically linked to the (unconscious) categories of habit which shape action (p. 195).

This statement ties in well with Bourdieu’s assertion that reflexivity is linked to the interrelationship between habitus and field, the researcher’s position within the field, and the dispositions of the researcher. Kenway and McLeod (2004) described Bourdieu’s focus on reflexivity as the “practice of reflexively situating and historicizing the space of one's point of view as a scholar and a sociologist” (p. 527). Bourdieu argued the researcher’s position within the academic field may and can create a false sense of authority because historically academe has insisted on its

I used a research journal to record all findings, thoughts, directions, evidence, and ideas, as the research was conducted. As I am a human being with limitations and biased perceptions, I wrote up the study from that perspective, including my personal experiences and reflections (Reinharz, 1992). This validated my approaches and allowed the readers of the thesis to know and ‘get inside’ my head or, as Hesse-Biber and Leckenby (2004) put it, “express and interrogate the researcher’s positionality” (p. 220). This helped to detect social assumptions (subjectivity) that in the end will help to build up objectivity (Harding 1992, in Hesse-Biber & Leckenby 2004, p. 219). By recording the process I used, and my thoughts, this helped to draw attention to any limitations in the study.

As I worked through the project, overt and covert limitations were discovered which were recorded in the research journal. A reflexive approach was used during my data collection and analysis and the writing of results. I used a research journal to record my thoughts, perceptions, attitudes, progress, and the like, in order to give me a voice within the final written text. Many feminist authors (Hesse-Biber & Leckenby, 2004; Naples, 2004; Reinharz, 1992) employ particular examples of reflexivity in research in order to illuminate the assumptions/values that researchers bring to their project and how that impacts on the process of their research. Of course this is not just a principle for feminist researchers, but it allows for honest reflection and self-critique of ‘what is going on’, for example, ‘what I did and why’.

Here is an excerpt from the research journal to offer an example:

Met with ‘Charli’ today. We chatted socially before and after the audio taped interview. She mentioned that she was called a ‘net freak’ when I said I was a ‘geek’. My comment on today was not about the content, but about the line between being friendly and being a professional, formal researcher. I want the participant to be comfortable, but I don’t want to be so ‘buddy buddy’ that it is unethical. However, I do feel that no coercion took place, and that she had complete control of whether to answer questions or not, and that I had provided an understanding and accepting environment of her, and whatever she said, whether I agreed with it or not.
Charli and I are similar in that we both like similar music and being on the computer, and are happy to be by ourselves. She mentioned that she wasn’t ‘normal’ in that others would probably be out sunbathing on the beach, but that she was going to go into a dark hall, onto the Internet, and listen to loud music. (I replied that I would do something similar because I like loud music and being on the computer). Of course, this is quite normal teenage behaviour, but I think that perhaps because I am interviewing her about her expertise and interests, that she may see herself as ‘apart’ from others, not quite like everyone else. I hope that the interview and the attention she is getting from me actually is a positive thing to affirm her expertise (Researcher journal, 19/6/2005).

Having a reflexive approach during the data collection and analysis helped identify any possible dilemmas, and clarify contextual, subjective issues as it helped me to assess honestly what I learned about myself (Reinharz, 1992) and about the project. As Patton (2002) argued, “Reflexivity reminds the qualitative inquirer to be attentive to and conscious of the cultural, political, social, linguistic, and ideological origins of one’s own perspective and voice as well as the perspective and voices of those one interviews and those to whom one reports” (p. 65). I believe the use of reflexivity helped to enhance the credibility of this text, rather than lessen the possible objectivity (as believed by positivists) (Denzin & Lincoln, 2000). The design of this study and the use of reflection enabled me to address inconsistencies in an ongoing manner during the research study (Bauer & Gaskel, 2000).

A record of the processes of reflection and analysis in which I engaged was recorded in the research journal. This consequent analysis of the research journal helped determine categories, relationships, and assumptions that have informed the interviewee’s perspective (McCracken, 1988) on technology, expertise and learning within their fields of practice. It enabled me to construct the interviewee’s perceptions of the topic in relation to the findings reported in the academic literature.

**4.4 Period and type of engagement**

After I obtained permission from the Deakin University Ethics Sub-Committee (May 2005), I began making contacts and seeking possible participants. I conducted two to three sessions with each of the eight participants throughout June to August, and collected all the signed interview transcripts by the end of August 2005. Much of the time was spent making the initial contact, following up phone calls, meeting with the participants and their parents to discuss the project, collecting the signed consent
forms, and then organizing a time to collect the signed transcripts after the interviews had been conducted. I did provide self-addressed, stamped envelopes for some of the participants to enable them to mail me their signed transcripts. Each session was approximately one hour in length, though some sessions were shorter owing to a short list of interview questions, and some sessions were longer owing to an extended observation period (1.5 hours for example).

4.5 Data analysis methods

The content of the qualitative data collected was analysed according to the key themes raised within Bourdieu’s social theory. I employed content analysis to pursue the key themes of habitus, field, and capital in the qualitative data. Merriam (1998) argued that content analysis could be used in any qualitative research that employs an inductive approach, as the content of collected data is analysed qualitatively. Findings from the content analysis are presented in a thematic form in the findings/data chapters, complete with examples of narratives that illustrate points I wish to make.

The following qualitative methods were used to analyse the data: reports, content analysis, and a research journal. Through the use of these techniques, I aimed to document each participant’s praxis in his or her field. Here I describe what I actually did to analyse the data, and especially how I employed Bourdieu’s notions of field, capital, and habitus.

4.5.1 Content analysis of textual data

The textual data that were analysed with Bourdieu’s framework included the transcribed verbatim interviews, the observations, and the researcher’s research journal. Searches were made for patterns, themes, and categories. Patton (2002) claimed the aim of such an analysis was to determine patterns, inter-theme consistency or convergence, and contradiction, or heterogeneity (Patton, 2002).

The reports include excerpts from interviews and from the researcher’s journal, findings from the phenomenological analysis, and possible inferences of what had not been said, or what was not present in the text. These will now be explained.

As mentioned previously, when analysing the interview data, I coded statements
according to Bourdieu’s social theory, and from a feminist perspective. I was specifically interested in the participants’ present capital in their field, and the habitus of their family and of their youth culture and of their gender. Through the coding and categorization of themes, one produces a framework that can be used to describe the collected data (Patton, 2002). The framework that I mainly used to analyse the content was Bourdieu’s theory of practice.

Bourdieu (1999) claimed that the usefulness and the success of the interview questions would be determined if the researcher was enabled to see the world of his or her participants as they saw it. Therefore the focus on conducting the interviews was to try to gain some understanding of the world of the youth I observed, and their praxis present in the field of out-of-school leisure. I am unable to claim that I reached complete understanding, yet I am able to state that I have developed a way of understanding the phenomenon in the field using Bourdieu’s theory of practice.

As stated previously, during the observations, I recorded the teenagers’ use of their computers, in that I wrote down what they did, when they did it, and if possible, why they were doing it. I asked questions during the observations to query things I did not understand or know about. The detail in these observations was analysed again using Bourdieu’s theory of practice. I combined the texts of the interviews and observations into one document for each participant before analysing the text using the qualitative analysis software program Hyper Research™. Each document was considered a case within the software program. Hyper Research™ provides tutorials to learn to use the program and it also has a website that helps with troubleshooting. I made use of both of these features.

After I entered all the text from the observations, interviews, and my notes from after the observations into the program, I proceeded to code sentences, paragraphs, words, and sections of the texts. First, I went through each participant’s case study and coded the content, repeating this process three to four times. Upon obtaining the master code list, which is naturally produced in the Hyper Research™ program, I checked my codes alongside the same codes in the other cases to ensure similarity (authenticity) in my coding. Once satisfied with that process, I made ‘reports’ on each code, grouping the text from each case associated with that code and placing it into one report. From the basic state of that report, I was able to flesh out each
report, according to my perspective, and discuss the nuances found in each report.

I employed feminist theory and Bourdieu’s social theory in my coding, as I categorized statements according to perceptions such as 'boys are better than girls at computers’, ‘boys are the usual computer experts’, ‘boys are not better than girls at using computers’, and ‘gender interest in computing’. With regard to Bourdieu, I used the terms ‘habitus’, ‘field’, ‘symbolic capital’, and ‘cultural capital’, amongst other codes, to group thematic phenomena. The three data chapters focus on mapping the participants’ trajectories towards expertise, and present the data thematically.

4.5.2 Research journal

In my research journal, I recorded the chronological order of events, and what happened on each day, if anything. I recorded when I had spoken to participants or their parents, when meetings were to be arranged, if they were held or not, and what resulted from each meeting. I recorded my thoughts on why I had made changes to interview questions, or focused in a specific direction, especially if it was different from what was previously recorded or intended. I recorded when I had received e-mails from participants, and when I had sent transcripts to participants for their confirmation signature. Lastly, I recorded conceptual inclinations and questions, and areas of further exploration, whether they were for this research project, or for further research in other projects. The research journal was treated as qualitative data for analysis. The research journal was analysed according to Bourdieu’s theory of practice, and it was intended that its findings were to be presented throughout the data chapters to position my reflexive exploration of the study and my values in conducting the study. It should be noted that few references to and excerpts from the research journal are included in the data chapters as it was deemed unnecessary.

I now turn to explaining issues concerning the design of the research project and the actual conduct of the research. This includes addressing issues of subjectivity in the conduct of qualitative research.

4.6 Additional factors influencing the project design and conduct

Every research project is subject to scrutiny relating to questions of validity, transferability, rigor and so on. Whilst many of these terms can be critiqued or
interrogated and whilst they are understood or represented in different ways depending upon the paradigm one operates within, it is important nevertheless to be explicit about the way these terms are understood within the context of this particular research project. In the following subsections, therefore, I will engage with some key terms of rigor, and illustrate explicitly how my definitions of the terms have been reflected in the conduct of the research.

McCutcheon (1990) argued that terms of rigor such as validity, reliability, and objectivity originate from positivism. Qualitative researchers argue that validity and reliability are not terms that adhere to the objectives of qualitative inquiry (Lincoln & Guba, 1985; Merriam, 1998). Merriam (1998) stated that internal validity was measured by whether the study’s findings matched reality, but that, because reality is changing, unfixed, and multidimensional, that, “Assessing the isomorphism between data collected and the reality from which they were derived is thus an inappropriate determinant of validity” (p. 202). Instead, in a post-modern climate, the positivist terms of rigor (validity, reliability, and objectivity) are replaced by other terms that have been suggested as follows: accuracy, precision, and breadth (Becker, in press); relevance (Lincoln, 1990; Popkewitz, 1990); significance (McCutcheon, 1990); trustworthiness and authenticity (Patton, 2002); and credibility and trustworthiness (Caulley & Lindsay, 2001).

Wolcott (1994) preferred to seek understanding rather than validity. All of these terms suit the purposes of qualitative inquiry (Demerath, 2006). Bourdieu (1999) also sought understanding when he focused on the process of interviewing, and being enabled to view the world as his participant(s) viewed it. I maintain that the value and legitimacy of a research project come from within in terms of its ability to meet the kinds of objectives it sets up for itself – be it collecting particular points of view on a problem or problematising traditional notions of a key term, etc. I now focus on the terms “credibility”, “trustworthiness”, and “relevance” in order to assert the quality of this qualitative research.

4.6.1 Credibility and trustworthiness

It should be noted that I emphatically reject positivist and post-positivist claims that research can be objective and valid. It is appropriate that I focus on credibility and trustworthiness (Denzin & Lincoln, 2000) in presenting value-mediated findings -
that is, “virtual reality shaped by social, political, cultural, economic, ethnic, and gender values; crystallized over time” (p. 165). Patton (2002) stated:

The credibility of qualitative inquiry depends on three distinct but related inquiry elements:
1. Rigorous methods for doing fieldwork that yield high-quality data that are systematically analysed with attention to issues of credibility;
2. The credibility of the researcher, which is dependent on training, experience, track record, status, and presentation of self; and,
3. Philosophical belief in the value of qualitative inquiry, that is, a fundamental appreciation of naturalistic inquiry, qualitative methods, inductive analysis, purposeful sampling, and holistic thinking (p. 552-553).

These three elements have been described and continue to be explained in this chapter.

My education, previous research studies, experience, and track record display a commitment to qualitative research, a commitment to excellence, and a collection of high marks/grades from all my postgraduate assignments and projects. Additionally, the coherence of the research questions, the theoretical framework, and the data collation and analysis (Lather, 1991) arguably increases the credibility and trustworthiness of the study and of me as the researcher. I believe this thesis is explained coherently, which enhances my credibility and trustworthiness.

For Bourdieu, when he was conducting research, it was imperative to make . . . explicit the intentions and the procedural principles that we put into practice in the research project whose findings we present here. The reader will thus be able to reproduce in the reading of the texts the work of both construction and understanding that produced them (Bourdieu, 1999, p. 607).

Hence, the data chapters present enough of the data that were collected, so that, if my biases or analysis of the data are disputable, other readers can make their own analysis of the data.

As “every reading is already, if not constrained, then at least oriented, by the interpretative schemas employed” (Bourdieu, 1999, p. 624), it is important that I acknowledge my personal biases, which may be a limitation of the research. Merriam (1998) outlined that explaining one’s biases as a researcher include
clarifying the researcher’s worldview, and explaining his or her theoretical orientation at the outset of the study. Merriam (1998) also suggested asking colleagues to comment on findings as they emerge – which she termed “peer examination” (p. 204) – as another way to enhance credibility or internal reliability. I did this through e-mailing my field notes and interview transcripts to my supervisor. This was done as soon as possible after completing a session. Dr Rowan then commented on my findings, and suggested ideas, and additionally, when I e-mailed her my analyses, she queried and clarified the analyses, which made my study accountable, and has led to further coherence and trustworthiness. This demonstrates my commitment to obtaining and generating data that are trustworthy and reliable, while also being transparent about the biases and various factors that have influenced what I observed in my fieldwork, and what I present in my data analysis. As I explored the participants’ trajectory/trajectories towards expertise in the interviews and observed the praxis in the delimited field, I noted that the activities were similar, and the responses homogeneous within the field, specifically analogous to gender. Therefore, by submitting these data to scrutiny, I am claiming it is credible, and that I obtained a reliable, citable picture of the participants’ expertise.

4.6.2 Relevance
The relevance of this study has been justified in the introduction chapter and the literature review chapter, which stated why this study is relevant and why it should have been completed - that is, in order to address the construction of technological expertise in out-of-school sites.

The multiple sources of data that make up the qualitative data for each participant help to negotiate and triangulate the interpretation of meaning, which is also reinforced by member checking (discussed below), and by my commitment to transparency of researcher biases and trustworthiness of data. Furthermore, the collated data are relevant to the lives and praxis of the participants.

4.6.3 Member checking
Interviews were audio taped and after each interview I provided each participant with a written verbatim transcript of his/her interview, which they were asked to read, edit as they wish, and sign for approval to be used in the project. This is known as member checking or member validation (Schwandt, 1990; Stake, 1995). This
enabled the participants to remain secure in their responses, knowing that if they were unsure of something they had said during the interview, they had the right to and were enabled to add, correct, change, or delete any part of the interview they liked. Participants were able to use this means as a way to check that what they said was what they intended to say, especially upon reflection after the actual interview. Lather (1995) claimed that the use of member checking contributes to a “growing sense of collaboration” (p. 299) between the researcher and the researched.

Some of the participants did make minor changes to their transcripts; some did not. I believe that the use of member checking increased the credibility and relevance of the research and the credibility and trustworthiness of the researcher.

4.6.4 Interpretation and presentation

With regard to issues of interpretation and presentation, I have tried to present as much as possible of what I have interpreted so that the various aspects of this study can be open to question, be clarified to determine whether I have been over-subjective, and be questioned on the inaccuracy of any point. I have tried to adhere to the following ‘epistemological virtues’:

1. Make your position, stakes, values presuppositions, explicit;
2. Subject yourself to internal and external criticism;
3. Take the chance of being mistaken;
4. Make findings public; and,

When I made inferences and suggestions about what the participants were doing and why, I drew on my own personal experience, especially with negotiating computer interfaces, in order to make sense of what and why phenomena were happening.

There are a number of key issues that researchers need to be aware of, before, during and after the conduct of the research when working with human participants. It is expected that researchers adhere to generally accepted moral and scientific principles which include such areas as the procedure for obtaining informed consent of participants, how one sources and samples participants, and how one protects the collected data and the privacy of the participants. Other issues include assessing the risk to participants, assessing the possible repercussion of events, and establishing what boundaries one has during the conduct of interviews - that is, how hard one
may push for data (Patton, 2002). I now address and explain some of these ethical considerations.

### 4.7 Ethical considerations

Participants were contacted by phone in the first instance, then I arranged a physical meeting at their home to introduce myself, explain what I was doing and give them the plain language statement form and the consent form for perusal. After a week, I followed up with a phone call to determine their further involvement. Upon receipt of the signed consent form, I made a mutually convenient time for the first observation in order to explore their praxis of expertise. The venue was where they used the home computer they used most often. In many of the participants’ homes, there was more than one computer. All observations were completed beside their computer, while they were using it. One observation of Jake was completed as he prepared and conducted a sound and lighting gig.

Interviews were conducted at their home, sometimes beside their computer, but usually in a place of personal comfort for the participants, like the dining table, family room, bedroom, or lounge.

It was important that I gained informed consent from all participants before engaging in a form of observation (Christians, 2000). Contemporary approaches to ethics emphasize the importance of informed consent that does not deceive the participants, and ensures privacy and confidentiality (Christians, 2000). It was important that I was able to verbalize what I wished to research and my interest in their activities in a manner that was easy to understand, so they were not bewildered about my intentions or my study. In my commitment to ethical research, I believed I adequately informed each participant about the purposes and the methods that would be used in the fieldwork, and that I did not misrepresent the purpose of the study (Christians, 2000).

Participants were informed that, in the reporting of the findings of this research, the participants’ identities would be kept confidential through the use of pseudonyms and the omission or disguise of any details that might reasonably be expected to identify them, so what they said and who they are is protected. As it is difficult to achieve anonymity in qualitative research (Merriam, 1998), one can only guarantee
confidentiality (Christians, 2000). I have endeavoured not to include any details in this thesis (or any further publications) that may lead to the identification of any participant, in a bid to encourage anonymity.

Participants were informed that findings of the research were mainly to be documented in this doctoral thesis, but that they may also be published in articles in academic journals, presented at conferences, or written in books. If participants or their parents were interested in the results of this research, they were informed of the results upon conclusion.

It is possible that participants may have felt coerced into participation, especially if they believed that I was in a position of power over them. I think that in hindsight all participants were comfortable and were not in any way coerced into participation, but this is really an unknown assumption. It was emphasized with participants that their participation was voluntary and optional, and that they were free to withdraw from the study at any time. This adheres to moral principles of “maximising good, minimising harm, pursuing the truth, and respecting persons” (Clark, 1995, n.p.).

Though there was no direct benefit to participants through being interviewed, a therapeutic effect may have occurred through the interviewee achieving further self-knowledge and self-reflection, which Schwandt (1990) argued might lead to a cognitive, affective, and practical transformation towards autonomy and responsibility. McCracken (1988) suggested that there were benefits for interviewees through participation in a qualitative interview - namely that through an interview one has the opportunity to be the complete centre of another’s attention (who will find whatever you say interesting), state their own case from their perspective, be actively listened to, and engage in a cathartic process of self-scrutiny, and perhaps societal scrutiny.

I provided a list of the questions before the interview. This enabled participants to preview the questions, and think about their answers if they chose to. This also gave them security about what the interview involved, and helped them to ‘jog their memory’ about their early experiences of using computers. The provision of questions also provided an additional element to the meaning of ‘informed consent’. Participants knew exactly what the interview was about, with no surprises, so this
enabled them to accurately estimate if they wished to continue their involvement. It was explained that participants could choose not to answer questions.

Parents of minors (children under 18 years of age) were asked for permission for their child to take part in this research (through a plain language statement and written consent form). As all the participants were under the age of 18, all parents gave permission and signed a consent form permitting their child to participate.

4.7.1 Issues and risks

This section demonstrates the commitment of the researcher to the welfare of the research participants - that is, the researcher’s moral priorities. As stated above, on identification as an ‘expert’, a potential participant may have felt coerced to be involved. After I explained my interest and position in them, I asked them if I could meet them to introduce myself and give them a brief proposal (the plain language statement) in order to think about whether they would like to be involved. With almost every participant, I gave them a week to think upon the information before asking them whether they were interested. I then phoned them. Upon a receipt of ‘yes’ or ‘no’, I took the appropriate pathway of either asking them to sign the consent form and arrange the time for the first observation, or leaving them alone. Every effort was made to preserve their rights not to be involved.

Participants may have felt intimidated by the situation or by me. Participants may have felt that I was judging them. As I was 29 years of age at the time of the study, and as I sometimes used the language found in youth culture, this and other aspects (casual dress, etc.) helped to lessen any intimidation or feelings of judgment. For example, I wore jeans, and a hooded sweatshirt, with little makeup, except when I first met the participants and their parents where I attempted to look professional. This illustrates my alignment with the differences in value of parents and teenagers in their different fields, and also my commitment to endeavour to make the atmosphere relaxed when observing and interviewing teenagers.

Participants may have felt uneasy, alienated, or uncomfortable when I was ‘sitting in’ as a non-participatory observer of their personal computer use. It was important for me to maintain a friendly, accepting, affirming manner for whatever occurred in the setting. After a short time observing them, I was sure that participants were fairly
relaxed with my attendance. I gave them the option to discontinue their involvement in the study at regular intervals, so they would have the option to ‘opt out’, without them feeling they had to ‘bring it up’. This demonstrated my commitment to professional integrity. During the observations, I reassured them by stating that everything was confidential (in that I would not tell their parents especially), and encouraged them to ‘just do what you normally do’. I hoped to lessen these risks, possible intimidation, and possible feelings of inadequacies, through providing an accurate plain language statement, and clear descriptions of the research process and what was involved.

When one-on-one interviews were conducted, the interviewees may have had concerns regarding feeling inadequate to the task or intimidated by the situation, or by the researcher. In a few instances, the interviewees did not understand the questions or the words that I used. Some asked for me to explain the question or the word, and some students just replied with “I dunno” or responses that implied that they were unsure. On two occasions, an interviewee asked, “Was that the right answer?” or “Is that what you wanted?” I reassured them that I was seeking their thoughts on the question, and not looking for a “right” answer. We had plenty of time to answer all questions in each interview. None of the interviews were rushed.

I hoped to lessen these risks, possible intimidation, and possible feelings of inadequacies, through providing an accurate plain language statement, clear descriptions of the research process and what was involved, as well as a list of the main questions that I was to ask in the interview. This provided participants with the opportunity to view the questions, think about their answers, and prepare for the interview before it occurred. So this gave them time to think about the questions that asked them to recall their experiences. They also were able to choose not to answer any question for any reason.

I stressed to each participant that this was exploratory research, and that there was no ‘correct’ answer. I was interested in their experiences, and to whatever depth or extent that may have been; therefore whatever they said was accepted. Once interviews had been transcribed, participants were given a transcript where they had at least one week to check and edit their answers to ascertain if that was what they wanted to approve to be included in the research. Interview transcripts were used
only if the participant had signed the transcript. Maintaining a relaxed and somewhat informal atmosphere lessened the possibility for the participant to be intimidated by the research technique or by the researcher, as did the use of their home venue.

Merriam (1998) advocated using an “audit trail”, whereby “independent judges can authenticate the findings of a study by following the trail of the researcher” (p. 207). I have endeavoured to do that in this study in my commitment to the intellectual integrity of this project, and outline what I have done, why I did it, and what happened as a result of it. This form of open inquiry is important to display my ethical integrity as a researcher.

4.7.2 Limitations and delimitations of the study

Clearly it is important to acknowledge the limits of any research project. These limits relate not only to the scope and size of a project but to other limits such as the ability of any researcher to analyse data in a way that would accurately reflect the interpretations/intentions of research participants. Researcher bias cannot be denied, as one’s perception of the world is value laden (Guba, 1990). This cannot be separated from who I am, and affects any type of qualitative research. However, researcher ‘bias’ makes interpretation possible. I aimed to record everything I saw in my field notes. Researcher error in my observations was possible. Other limitations of the research were time constraints, the subjectivity of my research (especially being the only researcher), minimal comment from the participants, and difficulty in contacting the participants in order to meet with them.

Bourdieu’s social theory has been criticized by various authors, as mentioned above, and using his theory is only one way of analysing the data – other ways of analysing the data may produce a different reading of the data.

Patton (2002) argued, that there was

. . . little flexibility in relating the interview to particular individuals and circumstances; standardized wording of questions may constrain and limit naturalness and relevance of questions and answers (p. 349).

This is a limitation of the interview, and also another reason for employing observations of the participants, in a way to check what they said matched up with
their practice.

When I first met potential participants, I was nervous and anxious whether I would be ethical, they would be comfortable with me and the process, and I would ask the ‘right’ questions and probes, and not put words in their mouths, etc. There may also be limitations in the situations that were sampled, that is, critical events or occurrences may not have been observed; limitations owing to the time periods that observations took place; and limitations based on the selectivity of people who were chosen for the case studies and/or interviews (Patton, 2002). It must be stated that in the provincial city (population c. 100,000) where this research took place it was not difficult to find eight teenaged technological experts.

Further limitations include that I was unable to find out the stanine level of the children, which is one indicator of their intelligence. I wondered if their intelligence was in any way linked with their expertise. Therefore I was unable to determine if their intellectual ability had any influence on the development of their expertise. If I had been able to obtain the IQ levels of the participants, this may or may not be a link towards expertise. If their intellectual ability was high, I wondered whether this was a predisposition towards obtaining expertise. I did record what types of grades/marks they said they received, but did not obtain any written documents stating the fact. This is an area for further exploration.

As I did not interview the parents, I was not able to find out any details regarding their (the parents’) personal history (habitus), which has a direct influence on the habitus and capital of the participants. I also wondered about the level of education that the parents had which would be indicative of their intelligence to a certain point.

I did not explore the participants’ notion of class. I did not try to classify the participants in a class, but I was able to gain an opinion of the level of their parents’ income through being present in their homes. As was discussed in chapter three, Bourdieu’s background regarding French schooling is very different from the current climate of New Zealand. It is possible that classism is not as important for New Zealanders as it was for Bourdieu and as it is for the people of France, but it is impossible to be definitive about this interpretation.
Each of the five boys attended the same co-educational secondary school. Three of the boys had previously attended the same primary school. Two of the girls attended the same secondary school (different from the boys’ one), while the third attended a public girls secondary school. Participants were not selected on the school they attended. So, while the sample is limited in that only three different secondary schools were represented, and admittedly there may have been more rich data resulting from having eight different schools in the sample, it was not a purpose of the study to obtain a representative sample.

4.7.2.1 Repeating the study

I believe that this research was conducted within the scope of the study. If I repeated the study, I cannot think of changes I would make, or things I would do differently. I am interested in obtaining more data from participants that would reflect a representative sample, and consolidating the meaning of a sociological trajectory towards technological expertise.

4.7.3 Researcher biases

Another limitation, and arguably a researcher bias, has to do with white centricity, which has been criticized by African-American writers such as bell hooks (1989) and Cynthia Dillard (2006). I am white-centric because I am white. I cannot be other than that; being white is who I am. If I had other researchers working with me, they would probably have been white too (as are my supervisors). I acknowledge that, if I was African-American or Asian (for example), that this study may have been conducted differently, and that I would probably have read the literature from a different lens. I cannot sufficiently say that this research covers perspectives from other races or ethnicities, because I am white.

I grew up in New Zealand where I believe I have a close affinity with Maori – the Indigenous people of New Zealand. Their term for white people is ‘Pakeha’ (pronounced pah-kee-hah), and I am comfortable with that term to define myself, as I have used that term to define myself as a white person in New Zealand for all of my life. I have used that term more than the terms ‘white’, ‘Caucasian’, or ‘European’. However, the term ‘pakeha’ is used both as a noun and as an adjective. Hence I define myself as a white-centric, feminist Pakeha who is a social science researcher. My awareness of the limitations of the white-centric perspective will be addressed
throughout the findings chapters (five, six, and seven).

As I am a woman, I cannot conduct this research from a man’s perspective or position. Gender identity is embodied and as a young, white, able body interacting with other people different people read me in different ways. Those people in turn offer to me a version of themselves of how they wish to be read by me, which of course may be read differently by me because of my perspective/s. This prejudice or position may have limited my understanding (Ingram, 2003), and also limited how the participants interacted with me.

The last part of this chapter introduces the eight, teenaged technological experts.

### 4.8 Introducing the participants

Before I introduce the participants, I briefly summarize their personal details in Table 3. The computer location and type of Internet access is with regard to their home.

<table>
<thead>
<tr>
<th>Name</th>
<th>Sex</th>
<th>Age</th>
<th>Location of computer</th>
<th>Type of internet access</th>
<th>Year</th>
<th>Grades/ Marks/etc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anne</td>
<td>F</td>
<td>14 – 15*</td>
<td>Kids’ wing</td>
<td>Broad-band wireless</td>
<td>10</td>
<td>Average to above</td>
</tr>
<tr>
<td>Charli</td>
<td>F</td>
<td>13 – 14*</td>
<td>Hall</td>
<td>Dial-up</td>
<td>10</td>
<td>Average to above</td>
</tr>
<tr>
<td>Chris</td>
<td>M</td>
<td>13</td>
<td>Dining room</td>
<td>Dial-up</td>
<td>9</td>
<td>Above average</td>
</tr>
<tr>
<td>Jake</td>
<td>M</td>
<td>16 – 17*</td>
<td>Kids’ wing</td>
<td>Broad-band</td>
<td>12</td>
<td>Above average</td>
</tr>
<tr>
<td>Joe</td>
<td>M</td>
<td>14</td>
<td>Dining room</td>
<td>Dial-up</td>
<td>10</td>
<td>Average to above</td>
</tr>
<tr>
<td>Lisa</td>
<td>F</td>
<td>15 – 16*</td>
<td>Lounge</td>
<td>Dial-up</td>
<td>11</td>
<td>Average to above</td>
</tr>
<tr>
<td>Tom</td>
<td>M</td>
<td>16 – 17*</td>
<td>Bedroom</td>
<td>Broad-band</td>
<td>12</td>
<td>Average</td>
</tr>
<tr>
<td>Tim</td>
<td>M</td>
<td>16</td>
<td>Bedroom</td>
<td>Broad-band</td>
<td>12</td>
<td>Average</td>
</tr>
</tbody>
</table>

Table 3 – Summary of Participants

To introduce the participants, I now present a brief description of each participant, grouping them by their gender.

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3 An asterisk indicates the participant had his or her birthday during the research period.
4 New Zealand year 10 is equivalent to Australia/USA grade [year] 9. New Zealand has thirteen year levels and students are typically schooled from ages 5 – 18.
4.8.1 Anne, Charli and Lisa

Anne lives with her younger sister, mother and father. In the “kids’ wing” (observation excerpt, 15/7/2005) where the PC computer she mainly uses is situated, there is a small living area, two bedrooms, and a bathroom (for hers and her sister’s use). The living area has a computer (sitting on a desk with a chair alongside), TV, and beanbags to sit on.

Her younger sister has an Apple iBook laptop computer that Anne does not use very often. However, this computer used to be Anne’s when Anne attended the same school that her younger sister is now attending. For Years 7 and 8, Anne was in a classroom where each child had her or his own laptop. Her younger sister is now in the same program at the same school. Anne does not use the computers at her current school very often and does not attend any computing class. She is adamant that the computer classes for the first two years at her high school were very easy, and were far too simple for her level of expertise. Her strengths at school include mathematics and science. She is considering a career in computers but is not sure as she expects she will find computer programming boring.

Charli lives with her mother and stepfather and is an only child. Charli’s parents own a business at which they both work. Her mother does the office administration on the business computer.

Charli is a member of an online community, whose members write poetry and prose to share with one another. People are able to view different genres of poems in this community and write comments on others’ poems. Charli first posted an original poem two or three years ago and was “quite proud that I'd done something myself and I knew everything about how to do it” (interview excerpt, 19/4/2005). Charli met many people through that site and from there was recommended another website that allows people to create their own websites, from which she created her own. Many of her associated friends from the poetry site also have their own website with this other community. Charli has spent a lot of time creating her own website. Charli has friends whom she has met online whom she calls her “friends overseas” (interview excerpts, 19/4/2005, 7/6/2005). “Yeah, I love my friends overseas. I love them. Sometimes like I think I’m closer to them than I am like with people here, just
because they’re that, like I just have that much more space, cause I love, I need my personal space” (interview excerpt, 7/6/2005).

Lisa lives with her mother and younger brother. Lisa spends approximately four nights per week at her dad’s house. Lisa maintains that her parents do not really take any notice or care about her computer expertise.

Lisa has had a computer for about three years (since year eight). She said she is usually on the computer from 4 to 6pm, then her brother has a turn, then her mum, and then “some time later” (observation excerpt, 30/6/2005) she will get back on. With regard to weekend use, if she is at her dad’s, she will check her e-mails, but she said she did not really use the computer on the weekends because she was too busy with other activities.

Lisa has taught friends and family about how to use the Internet, use sites, make sites, download music, and make (burn) CDs. Lisa has played an important role in others’ lives through recommending sites and showing people how to use the computer for different purposes. She does not seem to have a role model or someone who has shown or taught her things on the computer. She has her own way of learning new things on the computer: “Um, probably like, go round the very edges of it first and then just see what happens and then just keep moving in further, to what’s like in the centre, or something. Yeah [laughs]. Like working round the idea of something” (interview excerpt, 11/7/2005). Lisa believes she is learning from herself when she is on the computer.

Charli and Lisa created their own personal websites using “Piczo” (http://info.piczo.com/piczo/home/piczoAbout.html), which allows users to create comprehensive personal websites that do not require html code. Arguably, it is more difficult to use than ‘MySpace’ or ‘Blogger’, and has bigger scope in variety in designing multiple web pages on a website. Lisa and Charli are close friends and Lisa first introduced Charli to Piczo and to the poetry community.
4.8.2 Chris, Jake, Joe, Tom and Tim

A description of each of the five boys is presented below. They each attended the same secondary school, though apart from Tom and Tim (who are good friends) they were unknown to one another.

Chris was born in England and moved to New Zealand at the age of three. His mother said that Chris was using a computer at two years old. Chris has been labelled a “really bright kid” (interview excerpt, 8/7/2005).

Chris spends a lot of time playing video/computer games, but this is usually on his PlayStation 2™ machine. He views his computer learning and use as fun. Chris believes he is a computer expert, but that currently this has been ignored and somewhat discouraged at his school. He lists many software programs that he believes he is skilled at using. The school he formerly attended played a significant role in the development and encouragement of his expertise.

Chris mentions that his friends find his computer skills useful, and that one of them didn’t enjoy working with computers, “which is understandable” (interview excerpt, 8/7/2005). It is important to Chris to be able to help others using his computer expertise.

Jake is the network administrator for his secondary school and is responsible for 140-networked computers. Sometimes he gets paid for the out-of-school work he does for his school through managing their hall/auditorium. Jake does sound and lighting at a church with a modern sound and lighting system, and for his secondary school which is known as a mini-concert venue in the local area. He also works for another large, local concert venue once or twice a month and has learnt a lot from the employees of that venue. He does video work, including the “editing and running” (interview excerpt, 9/5/2005) of videos. He is also the official sound and lighting person for his church’s youth band. Jake is also the manager for the local branch of a lighting company that is based in a bigger city in New Zealand, and provides a service to non-profit organizations by charging them only small amounts to do shows and events. He is extremely busy, saying “yes” to all requests for his expertise. His technical knowledge gives him a sense of value. Jake spends about six hours a day
in front of a computer, two hours a day behind a lighting desk, and about nine hours a week behind a sound desk.

Joe was born in India but moved to New Zealand with his family at the age of 3 years. He lives with his father, younger sister, and mother. Joe sees computer expertise as invaluable and inseparable from his potential career interests. He wants to be an astronomer. Joe did not want to have the Indian pseudonym I suggested, preferring the name ‘Joe’.

Joe has many interests and he researches them on the Internet. They include space and flight (www.nasa.gov), cricket (www.cricinfo.com), soccer (www.soccerespn.com), music (www.music.yahoo.com), current events (www.xtramsn.co.nz), the latest games (www.gamesman.co.nz), and scientific learning sites. He also visits sites about The Da Vinci Code (authored by Dan Brown), and has an interest in art and art history, weather, climate change, and astronomy (planetarium website and Cyber Sky™). He also checks on details for the latest ring tones, and information on his favourite bands. He reads widely, especially science fiction as he believes sci-fi “extends your imagination” (interview excerpt, 14/7/2005).

Tom lives with his mother, father, and younger brother. Currently one of Tom’s older brothers and his wife also live in the same house.

Tom spends most of his time online playing the game, World of Warcraft (WOW™). WOW™ is a massive multi-player online role-playing game (MMORPG). WOW™ is a continuation of Warcraft™ I, II, and III, but they were formerly real time strategy games (RTS). He originally played first person shooter (FPS) games. Tom’s time on the computer is divided into 70 per cent games, 10 per cent homework and 20 percent web design (“maybe, yeah”, interview excerpt, 1/6/2005). If Tom is at home, he is usually on his computer.

Tom has forty-five websites (on his record) that he has designed since the age of ten or eleven. He used Macromedia Dreamweaver™ to design the pages, though he knows HTML (a computer programming language). He mainly designed websites to promote Counterstrike™ gamers (another online game) but had also designed them
to develop his portfolio and gain experience.

Tim lives with his mother, father, and younger brother. Tim lives in a well-appointed, new home in a wealthy suburb. Tim spends two to three hours per weekday on the computer, and approximately seven hours per weekend day and seven hours per day in the school holidays. Tim has had broadband Internet access since January 2005. Tim has a paper run from which he earns money to pay for things such as his WOW™ subscription. Tim has no idea of what he wants to do when he leaves school and does not seem to be involved in many things other than computers. He has not looked at what he could do to make the most of any opportunities that come his way, even with regard to computers: “I don’t really take, like use the skills that I’ve got on the computer anywhere else” (Tim, interview excerpt, 3/8/2005).

Tim and Tom have been good friends since they first went to school together. Tom recommended Tim to me, as someone who was happy to be involved in the research, and someone whom Tom considered to be an expert. Like Tom, Tim spends most of his time online playing the game, WOW™. Tim believes that the characters in the WOW™ game are equally matched between genders. However, each race has different strengths. He said, “I chose female cause they look better than the males” (Tim, interview excerpt, 3/8/2005). Within the rogues and hunters found within a race, both Tim and Tom informed me that the females have the same attributes and skills as the males.

4.8.3 More general information

I now explain some general information that describes the group.

- All of the participants live in a provincial city in New Zealand of approximately 100,000 people.
- Anne, Charli, and Chris are all learning foreign languages.
- None of the students appear to take music lessons of any sort. Chris does do some singing in stage shows. Charli takes weekly drama lessons.
- Anne, Chris, and Tim were born in England. Tom was born in South Africa. Joe was born in India. The other participants were born in New Zealand. All
of them could be considered ‘White of European Descent’ except Joe, and Lisa, whose father is Maori (Indigenous people of New Zealand).

Both parents of each of the children work. Two of the mothers and one of the fathers may not work full-time but this is something I am unsure of.

Other than both of Anne’s parents, it is not known if any of the other parents have post-graduate degrees. Chris’ mother is currently studying for a Masters degree.

I present Table 4 below that states which subjects the participants were taught in 2005 at their respective secondary schools.

<table>
<thead>
<tr>
<th>Name</th>
<th>Subjects in 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anne</td>
<td>English, Science, Mathematics, Social Studies, German, Enterprise, Drama</td>
</tr>
<tr>
<td>Charli</td>
<td>French, Food Technology, Mathematics, English, Health, Science, Social Studies</td>
</tr>
<tr>
<td>Jake</td>
<td>Geography, English, Drama</td>
</tr>
<tr>
<td>Joe</td>
<td>Graphics and Computers, Science, English, Mathematics, Geography, History</td>
</tr>
<tr>
<td>Lisa</td>
<td>Geography, Mathematics, English, Recreation, Sports Science, Human Biology</td>
</tr>
<tr>
<td>Tim</td>
<td>Mathematics, English, Physics, Geography, Business, Computers</td>
</tr>
</tbody>
</table>

Table 4 – Subjects Taken in 2005

4.9 Summary of research design

This chapter explained the design of the study, including the research questions and the methods employed to collect and analyse the qualitative data. The procedures of the participant sampling and conduct during the research were explained. Attention was given to explaining the various factors that influenced the project design. Ethical issues were also considered, as were the limitations of the study. Finally, this chapter introduced the eight teenaged participants and described some elements of their backgrounds as a whole and as individuals. I now turn to the first of the three data analysis chapters, which explores the field of out-of-school leisure of the teenaged technological experts in this study.
5.0 The Field of Out-of-School Leisure for Some Teenage Technological Experts

It is in the relationship between habitus and the field, between the feel for the game and the game itself, that the stakes of the game are generated and ends are constituted which are not posited as such, objective potentialities which, although they do not exist outside that relationship, impose themselves, within it, with absolute necessity and self-evidence. The game presents itself to someone caught up in it, absorbed in it, as a transcendent universe, imposing its own ends and norms unconditionally (Bourdieu, 2000, p. 151).

Previous chapters have set the scene for the presentation of the thematic data discussed in this chapter (five), and the subsequent chapters (six, seven, and the conclusion). This chapter addresses the following research question: In the field of out-of-school leisure, how is expertise obtained, constructed and performed by a group of New Zealand teenagers? This chapter begins with a description of the field, its structures, and what it is that the teenagers do within the field. I describe how expertise is constructed and performed from the viewpoint of the teenage experts and explain the multiplicity of the performances of expertise. As their expertise is mapped, I highlight how trajectories towards expertise are diverse and how gendered elements are included in these trajectories. I also compare the field to other fields of power, and finally describe the forms of capital present and valued in the field. This chapter moves beyond traditional discussions about expertise to demonstrate that, although economics and gender shape the acquisition and display of capital, there is still variation in how expertise is obtained, constructed and performed. A summary concludes the chapter.

5.1 Describing the field

The field that I am focused on is the field of out-of-school leisure of teenage experts. When one speaks about a field, one includes the institutions, rules, rituals, conventions, categories, and structured contexts that make up the hierarchy of accepted processes and practices, all of which is where capital is determined (Facer et al., 2003). Here, I explain these elements and focus on the structure of the field in terms of the relations between those involved (Grenfell, 2004), and who those actors are, and the out workings of embodied relationships, including cyber-relations. When one focuses on who is involved in this field of out-of-school leisure of teenage
experts, one needs to include cyber-relations, that is, those who are not seen, but whom the participant communicates with. Some of those with whom the participants interact also exist in face-to-face friendships, but many other interactions do not take place in person, nor are they personified. These cyber-relations the teenage experts have consist of some or all of the following relations:

- With other technological experts;
- With other online gamers;
- With others online;
- With the global village (Levinson, 1999; McLuhan & Powers, 1989);
- With their own computer, as a personal extension (Cuthell, 2002) of themselves (an argument of medium theory); and
- With others who are economically privileged.

Now I move to identifying what it is that teenagers do within this field, which includes face-to-face and cyber friendships.

5.2 Activities in the field

The participants described activities that I did not observe, and they included spending time on the computer with their friends and family, sharing a task or project, playing a game, or exploring a topic together. The activities I observed participants engaged in were as follows:

- MSN™ and other forms of instant chat/messaging (iChat™);
- Surfing (browsing) the web;
- Checking and sending e-mail;
- Homework tasks including research;
- Web site design*;
- Research of popular culture (e.g. television shows, celebrities, products)*;
- Game playing – online and offline;
- Configuring their own preferences for the computer;
- Downloading music for their MP3 players*; and
- Writing compact discs of music downloaded from the Internet*.

Not all the participants engaged in the activities marked with an asterisk, in that I did not observe these activities with every participant. The activity of research almost always involved the use of the Internet search engine Google™.
While the first four activities were sometimes completed also at school, or at other computers at various locations, all of the activities were conducted at home on the computer that they used. Jake, Tom, Tim, and Charli basically had exclusive use of a home computer. Jake, Tom, and Tim had bought or had been given their computer for their exclusive use. Anne’s computer was shared with her younger sister, though her sister had her own additional iBook™ for her school and personal use. Chris had his own laptop at his father’s house for his exclusive use, but had to share one desktop computer with his mother and sister at his mother’s house. Joe shared the home computer with his sister, but was the main user (his father had another computer for his exclusive use in his bedroom). Lisa shared the home computer with her brother and mother, but also was the main user.

All of the participants used a PC computer at home, but only Anne had the PC platform at her school as well. The other seven participants used Apple Macintoshes™ at their schools. While Jake enjoyed being able to work with both platforms and network systems, Tim, Tom, and Charli expressed disgruntlement with using Macs for various reasons. Tim said, “They’re a bit different to Windows as well so I don’t know exactly what I’m doing. But I know how to use them” (interview excerpt, 29/6/2005). Charli said she found them frustrating because she did not know them as well as her PC.

As Joe’s various research activities went beyond what many of the other participants did, I now explain his particular activities. He sometimes uses Britannica software to research information. He copies information, pictures, and diagrams into Word, and then prints it. He uses PowerPoint for school presentations. He uses Excel to record his cricket scores, which he has been doing for the last three years. When not on the Internet, he will use the computer to play games, listen to music, sort files, or watch DVDs.

Within this field of home computer use by teenage experts, the practice involves schoolwork, leisure, personal development, and personal expression. The last three areas inherently involve the participants’ alignment with consumer media culture (Kenway & Bullen, 2001), and technological activities associated with being digital insiders. I now explain in detail these three areas of practice.
Regarding the practice of leisure, I suggest that the boys are more involved in the field with various enterprises and foci, whereas the girls have other, additional fields that they are involved in and focused on that perhaps the boys are involved in but may not be focused on. Arguably, the girls have developed and/or accumulated their capital in various fields over and above the main field I am discussing, whereas the boys have their capital focused on the field of home computer use by teenage experts and the fields within that field. To explain further, Anne is involved extensively in her chosen sports of netball and rowing. Joe is involved in seasonal sports (cricket and soccer), but not extensively. Charli and Chris both have drama lessons. Lisa plays in two soccer teams and has interests and involvement in her Maori culture. Lisa separates her schooling from her leisure activities on the computer, but has other interests and hardly uses the computer on the weekends because she is “busy” (observation excerpt, 30/6/2005). Tim has a paper run that takes him half an hour to do each day. Tom plays soccer once a week. Charli, Tim, Tom, and Jake are almost always on their computer. Jake is hardly ever at home because he is involved in his technological activities, and claims that he probably spends at least 6 hours a day behind a computer.

In the field of computer use for leisure, game playing could be considered another field. Tim and Tom are the most avid game players in that my observation time with them almost always included watching them play online games (WOW™). For the three girls, game playing took up only a small percentage of their time. Tim, Tom, and Jake all mentioned that they had used discussion boards. Tim and Tom used discussion boards for consultation regarding games and the like, and Jake for help with running the Macintosh™ network for his school. Joe belonged to a number of e-mail subscription lists that sent him e-mails about topics and brands he was interested in knowing about. The girls did not mention any of these aspects.

With regard to personal development, I believe that their interest in various topics ties in with this field. Lisa’s main preoccupation in this area was finding and downloading music. Joe’s research into scientific topics, especially astronomy, Jake’s vocations with sound, lighting, and the school network, and Tom’s website design may all lead to possible professional vocations.

Personal expression is important for both Lisa and Charli in the construction of their
websites, but more so for Charli, who also uses poetry for personal expression, and could be described as having a troubled disposition; therefore the need for personal expression can be argued as being important to her.

In a field . . . it is only established through the practical strategies of agents endowed with different habitus and quantities of specific capital, and therefore with unequal mastery of the specific forces of production bequeathed by all the previous generations and capable of perceiving the space of positions as more or less wide spaces of possibles in which the things that offer themselves to them as to be done present themselves more or less compellingly (Bourdieu, 2000, p. 151).

5.3 The performance of expertise
With regard to how expertise is performed in this field within the parameters of the activities mentioned above, participants perform their expertise as individuals, and it is normally a private practice, though sometimes it is shared face-to-face with friends who may sit beside them while they ‘play’ on the computer together. Arguably, their performance of expertise is more often shared with others, that is, peers, who are online, and most of that practice is synchronous. The only instance of asynchronous practice happened when they sent electronic mail.

Anne believes she has expertise in certain programs, and thinks expertise is program-specific. She said she was not an expert of “the whole computer” (interview excerpt, 19/7/2005).

Tom seemed to believe that he was “just normal” (interview excerpt, 29/6/2005) and that his expertise simply comprised the necessary skills for the field/career he was interested in. The status of expertise with other participants is not as valued as with Tom. Perhaps Tom believes his skill is routine – run of the mill – whereas a generation older than him believes that he and all others of that age are technological experts. This is similar to the belief that it once was routine for all older women to be able to sew and mend clothes – an embodied form of social capital that was arguably valued and somewhat necessary up until the 1980s, from when it became cheaper to purchase clothes already made, and buy new clothes instead of repairing old ones. This notion about the value of expertise will be returned to later in the text.
It seems that this field establishes and enforces a distinct general difference between digital newcomers and digital insiders (Goodson et al., 2002). However, the way that these social agents act and interact with one another and learn from one another, that is, their habitus, is reflective of the way at least some teenagers go about finding out about the latest fashion, fad, or trend, and how this is shared discursively with their friends online and face-to-face. Let me give three specific examples.

First, the perpetuation of “What is the latest?” dictates that agents need to be interested to keep up with the play, and continue their friendships and develop their networks. Questions such as “What kind of cell phone do you have?” or “How long have you had your iPod?” or “I was talking to so-and-so on MSN the other day” not only make the world a global village (Levinson, 1999; McLuhan & Powers, 1989), but are a perpetuation of conventions such as “Do you know how to do . . . ?” “What does that mean?”, “Oh, cool!” and “Have a look at this [web] site.” The time involved to be able to ask and answer all these things dictates that these teenagers are reliant on technology in a way like never before. This has influenced their attentiveness to whatever is the ‘latest’. Of course, to keep up with the ‘latest’, one requires economic capital to purchase commodities and update software preferences. Those who are without will always struggle to exist and compete with agents who ‘have’. So, having a computer and MSN™ and access to the Internet requires economic capital, and being able to negotiate with these interfaces is a form of capital in this field. The attainment of expertise in this field represents a higher form of capital in this field. This can be argued to be part of the habitus of digital insiders.

Experience has been gained in this field through continuing interaction in order to learn the “stakes of the game” (Bourdieu, 2000, p. 151). For example, phrases such as “Hey, what have you got?”, “What are you doing?”, “How do you do that?” and, “What’s that for?” are common expressions of discourse which encourage learning, in order to be seen as up with the play, and in some ways in order to be included as part of the group. This can be referred to as ‘doxic’ praxis. Doxa and doxic refer to what is the accepted way of thinking and acting in a field (Grenfell, 2004; Lovell, 2000). By accepting the doxic praxis of finding out what others are doing, and incorporating that practice into their own practice, they become agents within this field and within others, which further perpetuates the acceptable and similar practices of others. As Moi (1991) claimed, “all agents in the field to some extent share the
same habitus” (p. 1022).

Within this field, the teenagers are, to some extent, under the authority of their parents, though few seem to monitor what their child does, and how much time s/he spends on it. However, the field is structured such that the parents can remove the computer or Internet access if they decide to do so. While I have focused on the computer activity at home, one would presume that the computer activities at school are also under the authority of the school, especially in light of the many policies schools have prepared for both children and parents to sign regarding the acceptable use of computers and the Internet. As will be discussed later in this chapter, the boundaries set by the parents and by the school may be transgressed as part of the *jouissance* practice in this field.

These previous sections have identified and outlined the feel of the game (describing the field and associated activities) within the field of out-of-school leisure by teenage technological experts. As Bourdieu stated (see introductory quotation for this chapter), “the game presents itself to someone caught up in it, absorbed in it, as a transcendent universe, imposing its own ends and norms unconditionally” (Bourdieu, 2000, p. 151). I now turn to discussing the multiplicity of participants’ understanding of the construction and performance of expertise, as agents who are ‘caught up’ and ‘absorbed’ in the game.

**5.4 Understanding expertise**

The participants were chosen through snowball sampling where someone had recommended them because that someone had thought s/he was an expert. All of them said they were an expert, except Joe who thought he was on his way to becoming an expert. When the participants were asked to rate themselves on a scale of one to five, each of the participants rated herself/himself as at least a three. It was explained to the participants that one was a ‘great’ expert and five was a ‘good’ expert. Table 5 presents the participants’ rating of themselves as an expert on a scale from one to five.
<table>
<thead>
<tr>
<th>Participant</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anne</td>
<td>3</td>
</tr>
<tr>
<td>Jake</td>
<td>3 for computers, between 1 and 2 for sound, and between 1 and 2 for lighting</td>
</tr>
<tr>
<td>Charli</td>
<td>3</td>
</tr>
<tr>
<td>Chris</td>
<td>2.5</td>
</tr>
<tr>
<td>Joe</td>
<td>2</td>
</tr>
<tr>
<td>Lisa</td>
<td>2 or 3</td>
</tr>
<tr>
<td>Tom</td>
<td>2.5 or 3</td>
</tr>
<tr>
<td>Tim</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 5 – Participants’ Personal Rating of Expertise

As the New Zealand culture can tend to be self-effacing, it may be that the teenagers felt awkward or immodest about admitting a high level of expertise, and may have been uncomfortable with even being labelled an ‘expert’. For example, Joe said, “I can't say a one [rating], yeah, because there's still heaps I can potentially learn” (interview excerpt, 22/6/2005). Joe was not comfortable with calling himself an expert, but did state he would like to be. His numerical rating and his verbal rating appear to conflict.

Lisa explained her personal rating of expertise: “Cause, um, with like other technology, I can always end up working it out as well. Yeah, it just happens. It's quite strange [we both laugh]. I always get something working” (interview excerpt, 11/7/2005).

However, all of the participants viewed themselves as experts. The next subsections explain what the participants understood about the terms ‘expert’ and ‘expertise’ and how some participants believed that expertise was age-related. It is necessary to explain their understanding of expertise as a reflection of their habitus that constitutes understanding in relation to this field.

5.4.1 Clear ideas of expertise

Joe used the dictionary to research answers to the interview questions I had sent him. He had copied the definitions for ‘expert’ and ‘expertise’ out of the dictionary and read them to me when I asked the questions: “A technological expert. I think it's a person who understands a particular field and is skilful at it” (interview excerpt, 22/6/2005). He answered expertise with, “A great skill or knowledge in a particular
field” (interview excerpt, 22/6/2005). This could be argued to be a clear idea of expertise (or a clear idea of how to get to know what expertise means), or an unclear idea of expertise, as he did not want to define it in his own words, or an attempt to display the behaviour that he considered would be valued in the field of university research. This datum is significant because it demonstrates that expertise is understood in multiple ways.

Tim described a technological expert as “someone that probably knows more than the average person” (interview excerpt, 20/7/2005) and that compared to most people, that is, the average user, he was a computer expert. Tim defined expertise as:

Knowledge, experience, yeah like, oh just, I guess using, if you use something a lot, and you know a lot about it, and then done it for a long time, I guess, that's, you'd probably be an expert at it, yeah (interview excerpt, 3/8/2005).

Tim agreed that there were different levels of expertise, exemplified in this sentence:

Yeah like if you own your own business or something, and then you’re good at that, whatever it is you want to do, like plumber or whatever, and you have an apprentice or something like that, they'll probably still be an expert, but not as expert as the person that is teaching them, yeah (Tim, interview excerpt, 3/8/2005).

Chris agreed that there were levels of expertise:

In any subject, there are many levels of expertise cause I mean, I think I've got expertise, a lot of people above me have more, and more advanced knowledge of how to do things, so they've got better expertise. Even people below me, they've still got a little bit of knowledge, so they've still got expertise in them (interview excerpt, 8/7/2005).

Chris seemed to equate expertise with knowledge, compared to Tim and Tom, for example, who associated expertise with skill.

Tom definitely thought there were different levels of expertise and related this to the following:

Like you could be an expert at what you do but you still do things like the old way, or the new way of coming in comes in you like have to learn how to do that and it's faster and stuff like that (interview excerpt, 1/6/2005).
Chris and Jake also thought there were levels of expertise. Lisa agreed by saying there were “heaps of different levels” (interview excerpt, 11/7/2005) of expertise. Anne said there were levels of expertise from the “very advanced or basic” (interview excerpt, 1/8/2005). The participants are not uniform in their understanding of expertise. There is a lot of variation in terms of what they do or do not associate with expertise. Part of this is evidenced by how easy or how difficult they found it to answer the questions posed by the researcher.

While some of the participants were clear in their ideas about levels of expertise, some were unsure about the general performance of expertise.

5.4.2 Uncertain ideas of expertise

Some of the participants used the questions to explore verbally their own understandings of what a technological expert was.

Charli defined a technological expert as:

Charli: Somebody that is confident with knowing their way around and stuff” (interview excerpt, 19/4/2005).
Charli: I think that it's just someone that's confident, and they feel like they know enough about what they do to like maybe show other people, guide other people. You know like, confident with trying new things on the computer and stuff. Me [giggles] (interview excerpt, 19/4/2005).
Charli: I used to think that an expert was somebody that knows everything, but it's not really. I just think it is somebody that's confident (interview excerpt, 19/4/2005).

Chris’ definition of an expert was expressed as “one of those people who can work with computers, and can do a wide range of things with them” (interview excerpt, 8/7/2005). For Chris, knowing how and why things work was very important (“I want to look into things because I really want to learn”, interview excerpt, 8/7/2005), so it is likely that has led to depth of understanding with regard to computers.

Jake initially stated that expertise was, “knowing everything” (interview excerpt, 9/5/2005), but admitted that there was always new stuff to learn, especially as new technologies develop. He then changed his description of expertise to “having a fair idea of most stuff” (interview excerpt, 9/5/2005).

Tom said, “I dunno” (interview excerpt, 1/6/2005) when asked what he thought
expertise was. He acknowledged that part of being an expert was being part of an ongoing process of learning. Tom thought that a technological expert was someone who was competent in something.

Lisa was not initially sure of what a technological expert was. She said, “Um, an expert in technology? [laughs] Yeah, I don't really know” (interview excerpt, 11/7/2005). However, when she was asked how she would describe her expertise in computers, she replied, “Just like knowing how the computer works really, and knowing what I want to do on the computer, and get it done, yeah” (interview excerpt, 11/7/2005).

The preceding two subsections show that participants struggled with some aspects of expertise, and participants negotiated the meaning of expertise and where the participants positioned themselves. Many of the comments from the same people were coded as clear and some comments were coded as unsure; that is, some participants had both clear and unsure ideas about expertise. There was general agreement amongst the participants that there were different levels of expertise. These subsections demonstrate that the notion of ‘expert’ is diverse. Taken together, these two subsections outlining students’ definite and indecisive understandings of expertise help to demonstrate that the field of out-of-school leisure for some teenage technological experts is a diverse one. Not only are there multiple ways in which expertise is demonstrated, but there are equally multiple (and contradictory) ways in which expertise is defined by those who seem (to an outsider, or newcomer at the least) to ‘have’ it. This draws attention to the ways in which fields are experienced differently by those within them and by those studying them. One needs to recognize what is at stake in the game, and determine whether one allows participants to define expertise in their own way, or whether traditional, dominant perceptions will prevail.

5.4.3 A good expert for my age

Four of the participants (Tom, Lisa, Jake, Joe) thought their expertise was at a good level for their age.

When asked, “So would you consider yourself to be an expert in your areas of interest?” Tom replied, “Um, I've gotta a lot to learn still, but yeah, for my age, I'd
probably be pretty competent” (interview excerpt, 1/6/2005).

Jake was not entirely comfortable with calling himself an expert, but was happy to call himself an expert “for my age” (interview excerpt, 9/5/2005).

Joe said that perhaps he was an expert for his age: “My age, um, maybe, but compared to other students, well there's a couple who are like really good, so I've got something to aim at, so I don't think I'm an expert yet, no” (interview excerpt, 22/6/2005).

Lisa did consider herself to be an expert but only for her age group; however she cautioned it by saying, “There are other brainier people in my age group that would be a total whiz on the computer [giggles]. But yeah, but I'm pretty average” (interview excerpt, 11/7/2005).

In analysing these perspectives, it is possible that because of their young ages (13 to 17) they may equate expertise with experience, that is, a number of years of involvement. Do they believe they have achieved expertise, or do they believe they have achieved only a level of expertise that corresponds with their young age? Because this expertise has been achieved in a relatively short time, are they not sure of its credibility? I believed they were comparing themselves with older people in other fields who are computer experts; however, it could be that they were also comparing themselves with younger and older people in the same field.

As stated earlier, it was interesting that some of the experts tried to distance themselves from the label of expert. While the participants in this study mostly liked being an expert and enjoyed the social capital that accompanied it, it is arguable that some of them were sheepish about calling themselves an expert. Is it possible that they were uncomfortable with calling themselves an expert because their expertise was not conferred in a formal, schooling setting, where it ‘really counts’? Or is the term ‘expert’ at symbolic odds with what is valued in the field of out-of-school leisure? Is the use of the term ‘expert’ so school-like that it is therefore not part of the discourse and accepted praxis of out-of-school leisure?

Examples such as these demonstrate multiplicity of understanding of what it is that
constitutes expertise. This multiplicity is vital to recognise in a context where teenagers’ particular relationship with the field of technologically mediated leisure is generally regarded as an unproblematic, almost natural one. By showing multiple understandings of expertise and the diverse trajectories towards expertise, it is possible to fracture the assumption that an accident of birth automatically confers desirable cultural capital, and in fact that capital is obtained in different ways by different children.

5.5 A gendered trajectory towards expertise

As part of an overall goal of deconstructing the idea of the unified or homogeneous category ‘teenage technological expert’, it is appropriate that I identify influences on each participant’s trajectory towards expertise. Stereotypical understandings of gender and what is constructed as gender-appropriate behaviour came through in the discourse of the participants, and that is what I now highlight, along with the certain discrepancies that challenge certain stereotypes.

5.5.1 Male and female competence

I asked Jake and Joe whether they thought boys were better at using computers. Jake thought the boys were in fact worse than the girls:

Half the guys at college [high school] are useless, ‘Look, it's not working! Why won't it work? And they start whacking it, and there's this little button that says 'on'. [laughs] Sorry, I'm just sick of people that don't know how to . . . I've had like half the computer room - and like the girls have sussed it out, no problem! The guys are sitting there – ‘this thing's not working’, they're starting to whack the screen, getting really abusive. And I say, ‘there is an on button on the screen’. [They reply] ‘Oh really?’ (Jake, interview excerpt, 4/7/2005).

By contrast, Joe agreed with the question and stated:

Joe: Yeah I find that's true because in class, I frequently see the girls asking more questions when we're in the computer room and I don't know if that's wrong or right, but yeah, that's what I feel they are.
R: So they're asking more for help.
Joe: Yeah, more for help. I mean there are guys who are, but more of girls are which I see, ask for help, and yeah. Some girls find it really easy and get through but the majority don't, yep (interview excerpt, 14/7/2005).
Chris operated in a role as an expert in his primary school and taught his peers computer skills. He said:

> Once I'd learned all my skills, I was actually told to go out and teach a few people, and I mostly focused on girls because I knew that they weren't learning that much on computers (interview excerpt, 22/7/2005).

As Chris was 13 years old at the time of the study and the youngest participant, this may reflect the differences in age and interest level of early teenagers, or it may indicate that boys do ask for help, but girls need the help. It raises issues about who is comfortable in asking for help and why. It is possible to argue that the data presented here demonstrate the persistence of patterns associated with the performance of technological competence identified in many earlier research projects. These patterns position women in the ‘natural’ role of a student needing help, whilst for boys these roles can be a more uncomfortable fit with dominant versions of masculine identity. In this context, whether one asks for help or figures it out not only reflects one’s gendered positioning within a field but also helps to constitute that field. In this case the “stakes of the game” referred to by Bourdieu (2000, p. 151) are not only the construction of expertise, but also include access to particular ways of interacting with peers and teachers.

Because of the construction of identity and gender and how we are discursively positioned and read to perform certain roles, being an expert at computers may be a positive thing for a male body, but not as positive for a female body. Despite the fact that the pathways were gendered, they were still pathways: gender did not stop the attainment of expertise. Cultural capital never exists in a vacuum – it always depends on the body that carries it. Bullen and Kenway (2002) advocated going beyond the thinking that situates technology as instrumental or enabling, and instead position technology as ‘pleasurable’, and as an enjoyable part of building one’s (gendered) identity. For the three girls in this study, technology was ‘pleasurable’ for them and was an enjoyable part of their identity. This was not only evident with the girls.
5.6 Summarising expertise

As explained in the literature review, expertise and its attainment have been thoroughly explored from the field of psychology, that is, a psychological approach to the attainment of expertise. Various and numerous theories have been put forth to explain the stages from novice to expert, and the differences between novice and expert. Much literature has been published on different types of expertise, namely expertise in chess, memory recall, typewriting, musical prowess and mathematical computation, to name a few. What I have sought to do is show how dominant or traditional definitions of expertise (and the habits/dispositions they assume) might or might not be adequate for making sense of how today’s teenagers conceptualise their own computer practices.

Over the course of the fieldwork, I kept a written record from informal meetings with my stepdaughters and daughters of friends (those I talked with before contacting the participants). When they were asked what they thought a technological (computer) expert was, they replied an expert is someone who:

- Is good at working out new stuff;
- Doesn’t need to ask for help;
- Doesn’t need to be told;
- If there is a problem, they can fix it;
- Knows how the computer works;
- Can fix it quickly;
- Has a high level of skill;
- Can explain clearly what they are doing;
- Knows what they are doing;
- Knows a lot about stuff;
- Is smart or brainy;
- Is good at science;
- Is good at what they are an expert in;
- Is interested in what they are doing;
- Likes doing it or likes it;
- Knows their way about computers; and
- Basically can do anything on a computer.
Female adolescents aged between 13 and 18 years made these comments.

In keeping with stereotypical understandings, I wondered whether the participants distanced themselves from the label of ‘computer expert’ because of the stereotypical association with ‘geek’ or ‘nerd’.

5.6.1 Are you a geek?

Woodfield (2000) described a geek as someone who is obsessive, stays inside, is anti-social, and loves technology (a technophiliac). She claimed that this picture of a computer geek is “unappealing to females” (p. 17). In the same vein, Webster (1996) claimed there was “no socially acceptable role of female nerd, so women gain no social status from joining a nerd group” (p. 41). From this literature, a female who seeks to stay within the realm of accepted behaviour for a field would not necessarily seek to become a geek as the image of geek is in opposition to the image of ‘woman’ (Webster, 1996). I did not focus on the term of ‘geek’ in the interview questions, except when I questioned Tim about it, as I had completed my interviews with Tom and Chris and they both had mentioned the term ‘geek’. In their answers to questions, the boys introduced the term. I did not use the term unless they used it. The girls did not use the term in their discourse.

Enrolled in a co-ed school, Chris commented on the lack of boys in his computer classroom. He said, “I think it’s cause a few boys might be embarrassed to be called a computer geek, just going into the classroom. I’m not sure, but I think that might be it” (interview excerpt, 22/7/2005). From this, Chris is suggesting that, while the girls were comfortable to be in the computer suite, the boys were not, because of the association of geeks and computers.

In the interviews, I tried to gain a sense of how the participants constructed their identity generally, and as well as asking them to describe themselves I asked how their friends would describe them. Chris answered:

My friend Grayson [pseudonym], he would describe me as almost the way I'd describe myself, but a little bit, he would describe me as small, and not particularly geekish, but just different from everyone else which is the way I like to be. He'd say, I think he'd say that I'm very good with computers. He's tried working with computers before - he just didn't enjoy it as much. Which is understandable.
Elizabeth [pseudonym], who I've known for much longer, almost six years of my life, she [pause], I'd say that she's almost finished with me, but not finished, cause she's still my friend, but she just doesn't find me, it's a bit like an overused toy, she doesn't find me that fun anymore. Which is not nice, but yeah. She would be the one that would describe me as a geek and very different from everyone else, and um, but she has also found my computing skills useful, shall I say [smiles, researcher laughs]. So yeah, that's how my friends would describe me (interview excerpt, 8/7/2005).

Picking up on the word ‘geek’ which Chris used twice, I asked him, “Do you consider the phrase 'computer geek' to be a positive or negative thing?”

Chris replied,

It gets on my nerves that people can describe me as a computer geek, but if I'm in the right mood I think of it as one of those good things that just show me, that almost stand me out as one of those people who can work with computers, and can do a wide range of things with them. And yet sometimes, it's - when I'm walking about - it's not that good because you get picked on, being able to do all those things. I normally ignore it though (interview excerpt, 8/7/2005).

Earlier, Chris had intimated that he had been bullied at his current school and, as he is of small stature, wears glasses, and likes computers, one could argue that some students would stereotype him as a geek.

Tom stated that he was sometimes called a geek – “Um, probably like, my friends that don't play on computers, probably would call me a computer geek or something, but that's about it, I think” (interview excerpt, 29/6/2005). Tom said that the type of music he liked was dance/trance which none of his friends liked. This suggests that Tom did not really mind what his friends thought of him, that is, he is strong enough not to worry about being called a geek because he likes computers and he likes trance music. Therefore if others thought negatively of these activities it did not matter to him.

I interviewed Tim shortly after interviewing Chris, so I specifically asked him if he was called a computer geek. Tim replied, “Oh yeah, just jokingly though, like from other computer geeks, like Tom [we both laugh]”, (interview excerpt, 3/8/2005).

I asked Tim whether the term ‘computer geek’ was a positive or negative thing.
Tim: I don't think it's any, just a joking sort of thing. Like it doesn't affect me.
R: So would you say many of your friends are similar in that you could joke around with them that they're computer geeks?
Tim: Yeah. Like we don't like mean it or anything, it's just, cause everyone's geeks and like all my friends [smiles]. So calling them a geek it's not like, it's not really, not offensive or anything, cause I'm a geek as well, so I'm saying it to them [we both laugh] (interview excerpt, 3/8/2005).

Tim’s comment reflects an understanding between geeks, or experts of a similar habitus.

I probed Tim’s thoughts a bit with the following question – trying to determine whether it was in fact a putdown.

R: What about if someone called a girl a computer geek? Like I'm assuming your friends are guys.
Tim: Yeah. Oh, I dunno. I don't think it matters whether they are a guy or a girl, you can call yourself a geek [smiles], if you wanted to be.
R: [laughs] But would it be a put-down if you called a girl a geek, a computer geek?
Tim: I dunno. It depends if they're serious or not [smiles]. It depends if they're your friend or not. I dunno (interview excerpt, 3/8/2005).

From this we can say that it is okay to be called a geek by other geeks, or to be called something usually negative if it comes from a trusted friend, regardless of gender.

What is significant is that, even though the term ‘geek’ has a dominant meaning in some aspects of adult culture, this meaning is problematically transferred or conferred, and certainly is not always or automatically legitimated in another field. This can mean, among other things, that one of the most powerful explanatory devices we have for making sense of keenness or reluctance to engage with technology may not be as helpful or as natural as much as it is often represented. Indeed, ‘geek’ has become one of those stereotypes that are possibly more to do with a fiction than a reality. None of the teenagers seemed to believe that the term is a reflection of their reality or that it even particularly encourages or discourages engagement with technology.
This whole area warrants further research, as does whether females think the word ‘geek’ is a putdown or an apt descriptor of those who are technological experts. Charli did use the phrase ‘net freak’ to describe herself, but not the term ‘geek’. Lisa did use the term ‘freak’ to describe herself. As Charli and Lisa attended the same school, it indicates that ‘freak’ may be part of an acceptable discourse.

Only recourse to depositions . . . can account for the immediate understanding that agents obtain of the world by applying to it forms of knowledge derived from the history and structure of the very world to which they apply them (Bourdieu, 2000, p. 155–156).

I now turn to examining the “stakes of the game” (Bourdieu, 2000, p. 151) within this field in comparison with other fields.

5.7 The field in comparison with other fields of power

Within this field (of out-of-school leisure by teenage experts), there are other fields, and this field itself is placed within other fields. While leisure may be seen as the overall field, the sub-field of out-of-school leisure is home computer use by teenage experts. The learning that takes place within this sub-field positions the field as important within the broader field of leisure. Some of the teenagers realize that they are learning; some do not think they are learning all the time, but some do not believe that their everyday engagement with digital media constitutes learning. For example, one of the participants didn’t think what they were doing had or could have any link to their schoolwork (Lisa), and some did not have much idea of how their interest and expertise could be linked to future careers (Tim, Lisa, Charli). So perhaps it is difficult for some of the participants to link their learning to school-like notions of learning.

This field can be considered to be a young field, which is neither a traditional field of leisure nor a traditional field of expertise or learning. Therefore the field, the capital within the field, and those positioned within the field are not valued by those who are not within the field. As esteem (or respect or admiration) is given to someone or something only if it is recognized or identified (Bourdieu, 1986, 1990, 2001), it is arguable that this field is neither valued nor esteemed and therefore those within the field have little power.
Presentation of the data demonstrates the heterogeneity of this group. The participants navigate the field of out-of-school leisure in different ways, yet the actual practice of computer use for leisure is arguably similar. They each have different priorities for their leisure, and for their activities that they do on the computer, but the similarity between maintaining friendships through instant chat and e-mail and searching out topics of interest is notable. These sections have demonstrated that the pathways or trajectories towards expertise are also diverse.

When Bourdieu’s theories are used, it is important to define what is powerful in a field, namely what is the capital within the field that is accumulated and increased owing to certain activities. As Skeggs (1997) said:

> Each kind of capital can only exist in the interrelationships of social positions; they bring with them access to or limitation on which capitals are available to certain positions. They become gendered through being lived, through circulation, just as they become classed, raced and sexed: they become simultaneously processed. The social relations of capitals into which we are born and move have been constructed historically through struggles over assets and space. Gender, class and race are not capitals as such, rather they provide the relations in which capitals come to be organized and valued. Masculinity and Whiteness, for instance, are valued (and normalized) forms of cultural capital. Our social locations influence our movement and relations to other social positions and hence our ability to capitalize further on the assets we already have (p. 9).

The forms of capital that are obtained and developed in this field will now be discussed.

**5.8 The forms of capital evident in obtaining expertise**

This section focuses on the capital of each participant and the capital in the field of out-of-school leisure of teenage experts in order to demonstrate how expertise is constructed and performed. Many of these data were collated during the observations, and through asking closed questions about biographical details and facts. Therefore there are few quotations utilised in this section because of the nature of the answers, that is, they are matter-of-fact, e.g. “I moved to New Zealand at the age of 3”.

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Forms of capital were introduced in chapter three, namely economic capital, social capital, and the three forms of cultural capital. Traditional explanations of teenager technological activity have tended to focus on economic issues whilst downplaying other forms of capital. I list and explain in that order the forms of capital in this field that are valued by the participants who are positioned in the field.

Regarding ‘economic’ capital, all of the participants have been provided with equipment including a computer and accompanying hardware and software, along with unlimited Internet access. Tom mentioned that once he exceeded his Internet limit the WOW™ game would play more slowly than usual. None of the participants mentioned that they had a limit of Internet hours per month, though Joe and Charli mentioned limitations that they had on how much time they spent using the computer.

Anne’s family has a lot of economic capital and objectified cultural capital, and it is expected by Anne’s parents and by the girls that they both will attend university. Examples of their economic capital follow. Anne’s family emigrated from England when Anne was 3 years old. Anne has had a computer in the house since the age of 2. Anne is aware that she is privileged and for example has a rowing machine in her bedroom. All of her friends were “disadvantaged in the technology department” (interview excerpt, 1/8/2005) as they only had dial-up Internet, not wireless like herself, and did not have the “newest computers” (interview excerpt, 1/8/2005). Anne has been provided with no limitation as to the amount and type of computer use.

Charli has exclusive use of the computer owing to being an only child and her parents prefer to use their business computer, rather than use the home computer. Both these aspects are an important part of her trajectory towards expertise. Charli referred to people who did not have home computers as “deprived” (interview excerpt, 19/4/2005).

At Chris’ mother’s house, they have dial-up Internet for one desktop PC. Both Chris and his younger sister have their own personal laptops and broadband (DSL/DHL) Internet at their dad’s house, which they are at for a week at a time before returning to their mother’s house (week and week about). He tends to spend more time on the
computer at his father’s place than at his mother’s because of the ease of broadband and because he has fewer restrictions. Chris makes comments about how slow computers are at school and at his mother’s, especially compared to his father’s place. He is careful not to say that what he has at his father’s is better, acknowledging that it is different there compared to his mother’s where playing on computers and Playstation™ is “kept to a minimum” (interview excerpt, 8/7/2005).

Tim and his family also possess a high level of economic capital, illustrated in the following statements. Tim’s PC desktop computer is situated in Tim’s double bedroom which also has a TV, double wardrobe, a chest of drawers, single bed, bedside cabinet and double wardrobe (fitted into the wall). His computer desk is a complete set-up (like Tom’s), but (unlike Tom) he has an expensive office chair. Tim has a Sharp Hi-Fi™ stereo on the top of the computer cabinet from which the stereo sound from the game comes through. Tim has had his computer for three years and it was his parents’ old one. He has bought new parts for it to make it better. His brother (aged 14) got his halfway through last year (unknown if it was bought by him or given to him). His parents have another desktop computer in their office.

It is arguable that Tom’s family does not have a high level of economic capital, but the economic capital is still present. Tom’s bed is along one wall of his single bedroom while his desktop PC computer and his elder brother’s computer sit along the other side. He bought his computer from his elder brother, but it is one of many in the house (estimated as another five computers). Compared to Tim, Tom lives in a small, modest house. However, the exclusive use of his own computer and the unlimited access to the Internet are significant contributions to his economic capital and his objectified cultural capital.

Lisa does not see any link between what could possibly be done and linked with school computer use and what she does at home with her computer. Her computer use at home is for leisure. She views the computer as having limitations for her education; her example was that she could not “do a practical [for sport science] on the computer” (interview excerpt, 21/7/2005). Lisa does not see that her computer usage and expertise will be of benefit to her for her schooling and future career. With this in mind, it seems that Lisa attains various states of cultural capital and her
social capital from other fields. She arguably has a low level of economic capital, though still adheres to the description of economic capital described above and the description of the objectified cultural capital, which all the participants possess.

Regarding ‘social’ capital, as a result of their expertise and their status of being experts, their standing amongst peers gives them importance, specifically with regard to the field of leisure. Their ability to play games well or do other leisure activities that are valued within the field gives them status and distinguishes them from others. By being good at a form of entertainment, they are esteemed because of the value of leisure. It is possible that leisure and entertainment are the most highly valued form of capital in youth culture. Their home computers give the participants access to kinds of activities that constitute social capital – for example, being able to play online games is a marker of ‘cool’, and hence esteem.

Lisa seemed not to value the social capital of being an expert, and was unsure of its relevance to her, but for the others the social capital they had was valued, because it was socially conferred that they were knowledgeable and skilful. They had status amongst their peers and within their family.

I now identify the three forms of cultural capital (Skeggs, 1997). In order, I discuss the embodied state, the institutionalised state, and the objectified state, which highlight elements of the participants’ trajectories towards the construction of expertise.

For ease of reference for the reader, I insert the table from Chapter 3.
<table>
<thead>
<tr>
<th>Embodied state</th>
<th>Objectified state</th>
<th>Institutionalised state</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispositions (temperaments) of the mind and</td>
<td>Cultural goods (pictures, books, dictionaries, instruments, machines)</td>
<td>Educational qualifications</td>
</tr>
<tr>
<td>body</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Character and virtues (morals)</td>
<td>Material objects</td>
<td>Certificates, Diplomas, Degrees</td>
</tr>
<tr>
<td>Cannot be transmitted, that is, given to, or</td>
<td>For example, through the purchase of fine art, the acquisition of a library, possessing high-tech equipment, one has bought cultural capital with economic capital</td>
<td>Qualifications can be used as a rate of conversion between cultural and economic capital, similar to ‘human capital’ whereby one gains a qualification, which then amounts to possessing more earning power?</td>
</tr>
<tr>
<td>Quality of speech</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demeanour</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can be increased by investing time into self</td>
<td>Quality of dress (clothing)</td>
<td>The pieces of paper confer cultural competence on the holder</td>
</tr>
<tr>
<td>improvement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Becomes a type of habitus</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6 - The States of Cultural Capital (Bourdieu, 1986)

Regarding the ‘embodied’ state of cultural capital, McCall (1992) stated that, “embodied cultural capital actually manifests itself in dispositions, or put another way certain types of dispositions are themselves forms of capital” (p. 843). I suggest that the development of computer expertise, or a disposition towards using computers, comes under this category. The belief they have in their expertise is only sustainable and on-going if this expertise is increasing. This gives them self-perpetuating cultural capital as they seek further expertise. Part of the expertise involves being able to negotiate with interfaces that are ever-changing within new fields, as well as to negotiate more quickly with interfaces because they become more comfortable with the practice. Since birth, these children have had to negotiate with multi-media and make complex decisions and choices regarding information (Luke, 1999).

All of the participants share the disposition of ‘experimenting’ and engaging with the computer. This generalisation has been generated from my observations of the participants.
With regard to the ‘institutionalised’ form of cultural capital, that is, attaining a qualification in computing, none of the participants had attained a formal qualification in computers, but all of them had taken computers as a subject in their secondary schooling years (except Anne, who was expecting to take it in the following year, missing the first two years of computers as a subject in her secondary schooling). Tom had advertisements of computer courses on his bedroom walls. Jake and Joe both discussed their desire to take a tertiary course, but Jake more so in lighting and sound, whereas Joe was interested in a computer programming course, in which he hoped to enrol part-time in the following year (2006). Anne had thought about doing a computing degree at university, but expected to find computer programming boring. She had asked a young adult male about his job opportunities since obtaining a computer science degree, and was disappointed in his response when he said he had not got a job and there were few jobs to apply for.

The ‘objectified’ form of cultural capital relates closely to economic capital. The participants own computers, corresponding hardware and various types of software, MP3 players, and the agency to buy and download music, and burn CDs. However, they also have access to an infinite base of knowledge, in the form of the Internet, which is like possessing an infinite number of *Encyclopaedias Britannica™*, as well as unlimited access to ‘information’ that might not be included in an authorised encyclopaedia, such as entertainment gossip, etc. Because the encyclopaedias are not material objects *per se*, the Internet as a resource equivalent to numerous encyclopaedias is a symbolic form of objectified cultural capital. All of these items cannot be attained unless one has economic capital to purchase them. One could argue that, because the World Wide Web tends to be freely available in certain public places such as local libraries, for instance, one could develop expertise by frequenting the library and using the available computers. However, it is a characteristic of the participants that, because the computer (and consequently the World Wide Web) is readily accessible, and almost always available for use at almost all hours of the day (and night), they are indeed advantaged because of the location and availability of their home computer. Because the participants have a home computer and Internet access, it not only is classified as an objectified form of cultural capital, but also constitutes economic capital.
All of the participants possess the forms of economic capital, social capital, embodied cultural capital, and objectified cultural capital that have been described above. Each of the participants is able to access the “right kind of knowledge” (Skeggs, 1997, p. 90) that allows them to perform the role of ‘expert’ in the manner legitimated within their field because of their economic capital and the resulting capital from having economic capital in the first place. However, because other ‘powerful fields’ arguably do not esteem this field, and the practice in the field is therefore devalued or misrecognized, it is questionable whether the cultural capital they have obtained, that is, their expertise, is in fact the ‘right’ cultural capital. Skeggs (1997) argued that, “it takes a considerable amount of schooling and extracurricular work to impart the ‘right’ cultural capital” (p. 90), but it is these “very personal dispositions, their affections, which generate evaluations and regulations of themselves” (Skeggs, 1997, p. 90).

I repeat a quotation from Bourdieu (1986), printed earlier in this thesis, to reiterate my mapping of teenage technological expertise, which matches well with Bourdieu’s theory:

If the best measure of cultural capital is undoubtedly the amount of time devoted to acquiring it, this is because the transformation of economic capital into cultural capital presupposes an expenditure of time that is made possible by possession of economic capital. More precisely, it is because the cultural capital that is effectively transmitted within the family itself depends not only on the quantity of cultural capital, itself accumulated by spending time, that the domestic group possess, but also on the usable time (particularly in the form of the mother’s free time) available to it (by virtue of its economic capital, which enables it to purchase the time of others) to ensure the transmission of this capital and to delay entry into the labour market through prolonged schooling, a credit which pays off, if at all, only in the very long term (p. 54).

These teenagers have developed their cultural and social capital through becoming computer experts, which is directly related to the amount of time they have been able to spend on the computer, which is a direct result of the economic capital of their families. To put it another way, it is possible that the participants became experts because of their environment, in the same way that athletes become experts because of the provision of lessons, equipment, travel, costs associated with their sport, etc. Through the provision of manuals, software, hardware, opportunities to explore, and unlimited opportunity to do, is this not creating the way for expertise to occur, and
that those who do not have this opportunity will not be technological experts? Money and provision of equipment are components of the ability to acquire expertise.

In relation to Bourdieu’s theory, habitus and cultural capital are fundamentally tied to the notion of expertise. A computer expert must have a computer (and dial-up or broadband Internet) at home that they are able to access in order to accumulate the time required to become an expert. These computer experts did not need school to help them become an expert in this area.

Capital, which, in its objectified or embodied forms, takes time to accumulate and which, as a potential capacity to produce profits and to reproduce itself in identical or expanded form, contains a tendency to persist in its being is a force inscribed in the objectivity of things so that everything is not equally possible or impossible (Bourdieu, 1986, p. 46).

The next subsection is devoted to the importance of computer expertise as a form of cultural capital in this field.

5.8.1 The importance of computer expertise as a form of capital

For the participants, the computer or expertise on the computer was important to them, and this aspect of their habitus could be argued as being a form of social capital in this field.

Anne did not mention the importance of computer expertise, other than saying she “couldn’t live without it [the computer]” (interview excerpt, 19/7/2005).

Charli often mentioned the importance of her computer expertise. It gave her agency with leisure, in her youth culture, and online community:

R (researcher): So is your computer use - even though you haven't really been using it much [recently] - is it still a positive thing for you?
Charli: It is, it is, because that's like the sort of thing that you choose everything that you do. And it's cool . . . . Like the Internet, it's got your own restrictions sort of, you can choose what you want to do and you can choose how much you want to do of it, and you give yourself the limits and restrictions (interview excerpt, 11/7/2005).
After Charli had been banned from the Internet, she realized how important computer access and skill was to her. For example, I asked, “How important is it to you to be an expert computer user?”

Charli: I think it's quite important now like, I went on yesterday, this is probably not really irrelevant [sic], but I went online yesterday to do some homework and I wasn't allowed to do anything else, but then I had to type something. Well I reckon like, it amazed me how like out of practice I was with my typing and I was so like bad, and I felt so horrible about it because I had that feeling of being an expert or whatever, that now I felt like it had been taken away from me and that really upset me.

R: So when it was first suggested to you not to use the Internet, how did you feel?

Charli: I wanted to shoot somebody [giggles], literally, like they saw the anger in my eyes, I had just gone from like just getting calm to like 'oh my god!', cause he has no idea how like, what it, it's like how else can I talk to my friends overseas, it's like my main thing, and yeah (interview excerpt, 7/6/2005).

The strong emotion Charli felt about this topic was also reflected in this excerpt when I asked her during an interview, “Has your account been suspended?”

Charli: Not mine. I'd kill myself if it was mine (interview excerpt, 7/6/2006).

When asked, “How important is it to you to be an expert computer user?” Chris said, “It is extremely important to me to be an expert in something in your life. Computing just turned out to be my strong point really” (interview excerpt, 8/7/2005). His expertise gives him social capital (status) as he had been given responsibility amongst his peers to help them with computer problems because the recognition of his expertise has enabled him to do so. His expertise has also given him confidence to work with other new technological items that he comes across in life.

Jake’s identity was considerably comprised of his technological expertise illustrated in the following example:

R: Ok, so your expertise in technology, is that a significant part of who you are?

Jake: Yeah, pretty much. If I lost, like if I got brain damaged or something and lost all my technical information, I'd basically would be no one, because I'm known for my technical stuff (interview excerpt, 4/7/2005).
Unlike Charli and Jake, Joe did not portray strong emotion about the importance of his computer expertise, but he conveyed its importance to his future career path:

Joe: Because what I want to be is an astronomer and computers is one of the main things, creating new programs, and writing them, and using them. Computers is one of the important, is an important thing for my career path, so I need it, yeah (interview excerpt, 22/6/2005).

Joe: For astronomy, you need to be able to design your own computer program and analyse data and everything like that. It's all in computers, even controlling like, for instance, telescopes and stuff, computerized telescopes, you need to be able to use computers (interview excerpt, 22/6/2005).

Lisa concluded that computer use was important to her though she began by expressing her doubts about its importance:

R: How important is it to you to be an expert computer user?
Lisa: Um, I don't think it's that important, but it's always good having some knowledge of computers or technology. Cause we're not left in the dark. Yeah.
R: So what if you didn't have your computer at all?
Lisa: I'd probably be a couch potato [we both laugh]. I'd try and do some sport, yeah.
R: So you'd fill your life up with other stuff? It wouldn't worry you too much?
Lisa: It might, cause it's like where I get everything from (interview excerpt, 11/7/2005).

Tim and Tom did not mention anything that allowed me to code their statements as ‘importance of computer expertise’, but the amount of time they each spend on the Internet suggests that maintaining and developing their computer expertise was important for each of them, as it maintained and developed their social capital amongst others positioned in the field.

Because the computer is important to the participants, and because computer expertise is important to them, the importance of computer expertise becomes a type of social capital as status is socially conferred owing to ‘being up with the play’, which arguably leads to their desire to obtain more expertise by using and experimenting more with the computer. The use of, experimentation with, and progressive nature of obtaining more expertise constitute this site of skill and knowledge.
Digital newcomers tend to talk about computer use by children or digital insiders as something that is optional or a simple matter of personal choice, that is, it is something they can do without if they were motivated to engage in other activities (Goodson et al., 2002). However, in the current age, Internet access is so fundamentally tied to access to knowledge (both formal and social) and leisure that it seems somewhat strange to think about engagement with computers as an unwelcome departure from the norm of traditional childhood play and leisure. This raises some questions about whether digital newcomers are able to conceptualise pathways to teenage technological expertise if they see the use of certain technologies as problematic. However, in order to gain expertise in the use of computers, the everyday association and engagement with computers is a necessity. I now discuss how the participants moved towards obtaining expertise, that is, their trajectory towards expertise, as a consequence of their economic, cultural, and social capital.

5.8.2 The trajectory towards expertise and the role of capital

Within the context of this research, using the term trajectory is preferable to using the term ‘pathway’ as trajectory encompasses the various parts and the different steps that may be taken, which does not correlate to a linear or singular pathway. Bourdieu was critical of the idea that life history was linear (Reed-Danahay, 2005), preferring to use the term ‘trajectory’, which suggests the inclusion of multiple conventions and structures that influence the agent, or in other words the inclusion of the many fields acted in by the agent.

To find out about each participant’s life trajectory towards expertise, I asked a series of questions of each participant. I asked them to define what they thought a technological expert was, and if needed I specified ‘a computer expert’ if they were not sure of what I was asking. I also asked them what they thought expertise was to determine whether the concepts were similar and derived from one another or otherwise. Next I asked them how they thought they became an expert, and how they thought other people could become experts. Some believed other people could become experts in exactly the same way that they had.

Anne believed one could become an expert through taking lessons, figuring out how to work the computer, and knowing everything about it. She stated that, as one
becomes more experienced, one becomes an expert. She described a technological expert as “One that's good on the computer, [giggles] or good with their technology thing that they do.” (interview excerpt, 19/7/2005).

With regard to how to become an expert, Joe thought that it was “Just by fully understanding something, y'know, but um, and who is like really confident at doing particular things and things like that, yeah” (interview excerpt, 22/6/2005).

Charli agreed with me when I suggested that both positive experiences with computers and the opportunity to do it would help with the development of expertise. She had previously explained that she had never really had a negative experience with computers.

Chris believed a technological expert was made through the following:

You have to pick up the right skills, you have to search for those skills, search for the right people who are going to give you those skills, and sometimes it can just come out of the air by pure luck. But if you try and just try and make yourself shown, different people can recognize you and you will be able to pick up a few of those skills - thanks to them (interview excerpt, 8/7/2005).

Chris credited a lot to others helping him along his way, though he also stated his natural inclination to find out ‘why’ and ‘how’ things worked was also significant.

Lisa believed that her computer expertise was obtained by “just really fiddling around on the computer and just learning from that, yeah” (interview excerpt, 11/7/2005), and that she had spent “heaps” (observation excerpt, 30/6/2005) of time, and “a very long time” (interview excerpt, 11/7/2005) on the computer:

Lisa: Yeah, I used to come home every day [from school] and would play on the computer, and listen to some music, mmm, about three years.
R: Oh ok. So it's something that basically every weekday you've done for a long time, for a couple of hours at least?
Lisa: Yeah, 2 hours (interview excerpt, 11/7/2005).

The social capital Charli had gained can be exemplified in the following illustration: Charli explained that one of her friends had called her “professional” (interview excerpt, 7/6/2005) in reference to her competence at using her computer. She also said:
Some of them [her friends] just think I'm just normal cause like this generation is getting up with the computer technology, like with MSN and big things like that. But then others think that I'm kind of a computer whiz, if you like, and stuff (interview excerpt, 7/6/2005).

Because of the economic capital of his family, Chris’ trajectory towards expertise has included the attainment of social capital (status), and embodied cultural capital (type of habitus) in how he works through things. For Chris, his dad had a significant role in teaching him how to use computers, how to play games, providing equipment to use, and giving Chris the opportunity to watch him (his dad) use the computer. He also mentioned the teachers at his primary school who had encouraged him to gain expertise. Chris began his trajectory to expertise through playing games and then learning programs like *Word* and *Excel*, and then moving on to graphic programs (e.g. *Flash 5*).

The influence of people on Tim confirms his social capital. Tim believed he became an expert from “using it so much, and having friends that know all about it as well, to ask and get things from, yeah” (interview excerpt, 20/7/2005). He thought that other people could become an expert in this way and elaborated by stating: “Like if they've got friends or parents that can teach them, yeah. Or if they want to find out themselves, there are things on the Internet that you can learn, yeah” (interview excerpt, 20/7/2005).

Jake has a high level of social capital exemplified in the status he has as an expert who is constantly asked for help with the computers at school or the equipment in the school hall. He uses *MSN™* and *iChat™* to communicate. Text (SMS) messages he receives on his cell phone/s also request help. Jake seeks out sources for help and is also a source of help. Jake is aware of the need to empower and enable others to do his job, in the sense that he will often set things up to work properly, check that they are, and then leave a novice to “push that button there” (interview excerpt, 4/7/2005) when needed. He discussed how others have helped him to learn technical things, and so consequently tries to provide opportunities for others to learn and do, which also frees him up to do other required activities.

Joe places a lot of value on traditional ways of learning, and the attainment of academic qualifications. He strongly values one of the types of cultural capital, that
is, institutionalised cultural capital. Through attaining more of institutionalised cultural capital, he will be pursuing the career path he wishes to take (astronomer), by investing in that form of capital.

Joe’s research on scientific topics for homework and for exam preparation ties in well with his natural interest in sciences. He admits that most of his Internet use is for homework research. A site named [www.howstuffworks.com](http://www.howstuffworks.com) is very interesting for him and he initially used it for a school assignment. Technical things of all types are explained, ranging from the ‘Sith’ in *Star Wars*, to lock picking, to how PlayStations™ work, to how GPS works. He said that his friends use it to find out about PlayStation™ and XBOX™. These are all examples of the social capital he possesses which is conferred by others as he gains status and esteem from the knowledge he has attained and continues to pursue.

Are these teenagers aware of the link between their economic capital and the development of expertise and the development of their identity? If they are unaware, they have fallen into it (their parents have chosen it for them through their economic and cultural capital), but they like being ‘expert’. They value the capital that expertise gives them, and the position and space they occupy within this field. This suggests the agents may value the social capital of being an expert (apart from Lisa), but not necessarily the label of expert as they are unsure of its implications.

### 5.9 Summary

In defining the field and its practice, it has been shown that forms of capital delineate both the field and the power constructs within the field. As McCall (1992) stated, “The concept of capital is central, if not most central, to Bourdieu's construction of social space” (p. 841). For each of the participants, the social capital represented in their computer expertise is an important part of their life. Being an expert, and maintaining or increasing their level of expertise is important to each of the teenage technological experts in this study.

It is important to remember that for these students the act of performing and practising their expertise is vital for them to not only develop their expert skills but in order to believe in themselves as continuing experts, therefore confirming that expertise is a process for these participants: “Belief is an inherent part of belonging
to a field” (Bourdieu, 1990, p. 167). The praxis evident in this field of out-of-school leisure of teenage experts constitutes an embodied way of life for these digital insiders.

Moi (1991) argued that “The capital at stake is always the symbolic capital relevant for the specific field under examination” (p. 1036). As I have examined the specific field and the capital relevant in the field, it can be stated that the cultural capitals have different values depending on the field that legitimates and determines the tradable value (Skeggs, 1997). This suggests that, while social, cultural and economic capital – as defined by Bourdieu – is the same for both adults and adolescents, adolescents (especially these digital insiders) value capitals different from those which adults value, or to put it another way, their “cultural capitals have different values” (Skeggs, 1997, p. 29). The forms of capital I have identified in this field are valuable to the participants because they are in the field, they determine what is valued, they determine what is at stake for that capital to be valued, and they determine what is doxic practice (Moi, 1991). In turn, the discourses they have access to are constituted by their cultural capital (Skeggs, 1997). The participants have determined what is the ‘right’ capital and this is arguably different from what adults or digital newcomers value, especially those who are not situated within this field. They have identified and laid claim to the “stakes of the game” (Bourdieu, 2000, p. 151).

The Matthew effect (Ceci et al., 2003) states that the rich get richer and the poor get poorer: if the participants gain basic computer literacy skills through the economic capital of their families, that is, provision of computer/s and Internet access, it then means that the participants are set up to develop higher levels of expertise, or attain higher levels of skill. Another way to put this in Bourdieuan terms is to say that the agent’s habitus makes decisions that are advantageous for the agent. The habitus of the parent/s is passed on to the children, though the habitus of youth culture is distinct from the previous generation. Economic capital and a certain type of habitus are required in order for expertise to be obtained and performed by digital insiders.

The structured structures in the lives of the participants lead to further structuring structures which presents the inevitable, that is, that any child who is exposed to these forms of capital and has this type of Western youth habitus is likely to develop
a level of expertise, be it on the computer or in another field. Part of this habitus comprises ‘keeping up’ with their friends (aka the teenage Joneses), that is, being familiar with a variety of media texts in order to communicate and socialize with their peers. Instant messaging and e-mail (and arguably use of a cell phone, though this study did not focus on this) have become the doxic praxis in this field and possibly in the larger field of leisure, and arguably can be constituted as a structure that perpetuates itself in the lives of these teenagers.

Finally, it is evident that the concept of ‘expert’ is disputable, and that trajectories towards expertise are diverse. Gender does not confer expertise, and neither does age. This chapter has demonstrated that there is no particular ‘essence’ about the experts in their performance of expertise and that an ‘expert’ is an unqualified term.

The task of sociology, according to Pierre Bourdieu (1989a: 7), is ‘to uncover the most profoundly buried structures of the various social worlds which constitute the social universe, as well as the ‘mechanisms’ which tend to ensure their reproduction or their transformation’ (Wacquant, 1992, p. 7).

The next chapter highlights how the habitus of the participants shapes the performance of expertise in this field.
6.0 Generational Differences in Beliefs About Expertise

The principle of the differences between individual habitus lies in the singularity of their social trajectories, to which there correspond series of chronologically ordered determinations that are mutually irreducible to one another. The habitus which, at every moment, structures new experiences in accordance with the structures produced by past experiences, which are modified by the new experiences within the limits defined by their power of selection, brings about a unique integration, dominated by the earliest experiences, of the experiences statistically common to members of the same class (Bourdieu, 1990, p. 60).

The previous chapter (five) delineated the field that I focused on, discussed some forms of capital in the field, and explained general dispositions found in the habitus of these teenage technological experts. This chapter will answer the second research question: *How does the habitus of this group (of New Zealand teenagers) challenge and/or agree with traditional/adult notions of expertise?*

This chapter will identify further similarities and differences between digital insiders and digital newcomers (Goodson *et al.*, 2002), especially with regard to issues of gender in this field. It seeks to explain how the habitus of this heterogeneous group of New Zealand teenagers disagrees with traditional notions of expertise, but sometimes aligns itself with adult notions of expertise. It highlights and explains four dispositions that comprise the habitus of the participants in this field. One area of contention between participants and their parents is addiction, which many of the participants mentioned. This is with regard to the amount of time spent using computers, which as stated in chapter five, is a doxic practice within this field, but arguably is a concern for some parents and/or considered to be a societal concern.

What is important to remember is that this chapter focuses on what the participants say about their beliefs, and also what they say about their parents’ beliefs. The gap in this understanding is what I draw attention to. I did not interview parents about their beliefs. Bourdieu (2000) discussed how a gap in understanding could be attributed to and dependent on habitus. He maintained that the “principle of the transformation of habitus lies in the gap, experienced as a positive or negative surprise between expectations and experience, one must suppose that the extent of this gap and the significance attributed to it depend on habitus” (p. 149).
Habitus will be used to explain the socially produced dispositions and ways of being in the field of out-of-school leisure of teenage experts. I argue that the participants’ attained computer expertise can be attributed to the habitus of the participants that has generated and shaped the action in the field. Special focus is then given to the dispositions (habitus) generally found with the participants. The habitus of the teenagers is described because of the intertwining nature of field and habitus. The field structures the habitus and the habitus constructs the field as meaningful (Grenfell, 2004).

The last section of this chapter focuses on issues of gender surrounding the differences in perception between generations. As outlined previously, when I use the term ‘generation’ or ‘generational’, I am specifically referring to comparisons between digital insiders and digital newcomers rather than ageist, simplistic notions of differences inherent in the words ‘generation/al’.

As an opening move it is important to identify the way the notion of the field of home computer use changes when it is considered as a site involving adult and teenage interpretations of practice. It is to this point that I now turn.

6.1 Habitus (dispositions) in the field

Through the data gathering and analysis process, I have found four key dispositions in this field of expertise that every participant adheres to in their praxis. As Bourdieu (1998) maintained, dispositions make up one’s habitus.

Habitus change constantly in response to new experiences. Dispositions are subject to a kind of permanent revision but one which is never radical, because it works on the basis of the premises established in the previous state (Bourdieu, 2000, p. 161).

The four key dispositions are:

1. Spending time;
2. Experimentation;
3. Motivation, plaisir and jouissance; and

These are the accepted ways of thinking and acting in this field; that is to say, these are the doxic practices in this field (Grenfell, 2004; Lovell, 2000). These
dispositions arguably shape the performance of expertise in this field.

What follows in the description of each disposition is what can be accredited to each and every participant as helping them to become experts.

6.1.1 Time

The praxis in the field of out-of-school leisure is identified by the time spent experimenting with computers.

All of the participants have referred to the amount of time needed to become an expert. The following statements illustrate how participants believed they became experts through the cumulative effects of spending time on the computer. Spending time on the computer is a doxic practice in this field. In order to become an expert, one has to “become more and more experienced” (Anne, interview excerpt, 19/7/2005) from using computers since an early age (Chris), or spending a lot of time per day on the computer (Jake). Tim was pragmatic about gaining expertise and stated “. . . if you use something a lot, and you know a lot about it, and then done it for a long time . . . ” (Tim, interview excerpt, 3/8/2005).

Charli explained that she became an expert over time from exploring and learning from experience: “It was over time really, just from like going onto the other links and sites and stuff and exploring really. Yeah, just exploring. And you learn with experiences” (interview excerpt, 19/4/2005).

When I asked Joe about his current level of expertise, and how he got to that level, he replied, “By probably spending time, by spending time reading things and getting other people to help me, for example, my dad, just spending time on the computer . . . It's just time, yeah, and just dedication, sort of, yeah” (interview excerpt, 22/6/2005). Though Joe does not claim to be an expert yet, he demonstrates much desire to be an expert.

Tom was asked, “So it's about having time?” He replied, “Yeah, having the time and patience to read” (interview excerpt, 1/6/2005). He thought that other people could become an expert in the same way he did, and said, “Um yeah, it's not that hard. Just do it on the [Inter]net” (interview excerpt, 1/6/2005).
Dispositions are inseparable from the structures (…) that produce and reproduce them (Bourdieu, 2001, p. 42).

Indeed, all of the participants have spent a significant amount of time using computers, and this is possibly an inherent part of being digital insiders - that is, as they have always been exposed to screens, media, technology, and computers, is it feasible to state that these digital insiders are so used to technology and media being part of their everyday life that they do not think twice about spending a lot of time using a technological artefact? Their lives are infused, indeed permeated with technologies and their everyday use, especially the computer. It is not only an accepted way of thinking and acting in the field (to spend a lot of time on the computer), but it is an embodied way of life.

6.1.2 Experimentation

With regard to what the participants do while being ‘on’ the computer and spending time using the computer, all the teenagers referred to terms like “mucking around” (Jake interview excerpt, 9/5/2005) or “fiddling around” (Lisa, interview excerpt, 11/7/2005) in order to learn, and in order to gain expertise. This could be represented in use of the term ‘bricolage’ (Turkle & Papert, 1992) or ‘tinkering’, or the term I would prefer to use – that of experimentation. In keeping with Bourdieu, life trajectory is about the bits that make up the whole, not just one, singular pathway towards a goal. This approach could comprise the concept of experimentation. This seems the most apt term to describe generally what all of the participants do, despite the different ways they describe how they go about learning (more of which will be discussed in chapter seven).

When I asked the participants about how they went about learning new things on the computer, they answered by giving examples of their experimentation in practice:

- Anne: ‘Oh, what does this button do? Oh, look!’ And that sort of thing, or by accident (interview excerpt, 19/7/2005).
- Charli: When I stuff up . . . I know like okay, I'll go back and do this thing cause this is sort of what I do . . . and what most people do, and I'll always try that. Like I sort of have like an idea of what to do with everything (interview excerpt, 19/4/2005).
• Joe: Y’know, just browsing along and trying new things, and yeah, exploring, yep (interview excerpt, 22/6/2005).
• Tim: I just try things and figure it out, and just try it, just keep trying until you get it right, yeah (interview excerpt, 20/7/2005).

While Jake has attended some courses in his three areas of expertise, and has also learnt from others, he has spent much of his time learning things by trial-and-error. He says of others: “I knew a couple of people who’ve learnt by just mucking around and seeing what it sounds like, without any proper training or anything like that” (Jake, interview excerpt, 9/5/2005). This would also apply to many instances of Jake’s learning.

Tom said he learnt through playing, trying different things, and asking other people who were playing online.

All of the participants use experimentation as their main way of learning and solving problems, or through trying to achieve something when they are using a computer. Another commonality found throughout the discourse and the practice of the participants is the fun or enjoyment the participants have when using and experimenting with the computer. I now focus on the motivation inherent in and resulting from the pleasure of this engagement and experimentation.

6.1.3 Motivation, plaisir and jouissance

This study suggests that computer use provides students not only with computer expertise, but also with pleasure, and with motivation. Leisure is the primary purpose in using computers for these participants. It is an important part of their trajectory towards expertise. The fun they have with their computer is a great motivator for further use.

The participants all mentioned fun. Their computer use is arguably their main form of leisure, except perhaps Anne. Though she does use her computer predominantly for leisure, she has other avenues of leisure that she spends more time on. Bourdieu (2000) discussed enjoyment in the sense of an agent being recognized or legitimated.

Many of the participants mentioned the use of games as part of their trajectory
towards expertise. While I have found game-playing to be more frustrating than fun, I think the participants' use of games is a form of play, which can be grouped under the umbrella of leisure and fun. These are all examples of *plaisir*.

*Plaisir* is a French word directly translated to the English word ‘pleasure’, or can mean the synonym ‘enjoyment’ (Grace & Tobin, 1998). *Jouissance* is a French word that accompanies *plaisir* but describes a different type of pleasure, of which English has no word for, so the word *jouissance* is untranslated from French. Kristeva, the feminist influenced by Barthes (1975), amongst others, used psychoanalysis to discuss *jouissance* in the transgression of pleasures of the abject (Kristeva, 1982). The transgression of boundaries that parents have set could be considered to provide moments of *jouissance*. Through enjoying what computers and cyberspace offer, participants are able to transgress the boundaries that have been placed on them by their parents and by the authoritative figures in their school.

Though *plaisir* and *jouissance* are not terms that have originated from Bourdieu’s social theory, I have employed them to discuss the types of leisure inherent in the participants’ praxis because these terms fit well with the notion of digital insiders, the advent of consumer-media culture, and the participants’ use of computers as a positive form of both leisure and learning. These terms have been discussed previously in this thesis. As Kenway and Bullen (2001) argued:

> Aspects of today’s consumer-media culture, evokes *jouissance* in children. Children and youth are encouraged to delight in the impertinent and the forbidden, to transgress adult codes, to live only in the present (p. 70–71).

As teenagers find their way in the world, they are still subject to the authority of school and their parent/s. The pleasure obtained from their immersion in technology consists of *plaisir*, especially in their first experiences owing to being a digital insider, and being involved in something that is completely natural to them. In addition, because the participants are experts in this area, they are the authorities on the medium and sometimes the subject matter. They are no longer dependent nor reliant on parents or teachers or schooling structures as the authority for which they explore and construct knowledge. Indeed, the traditional, behaviourist notion of adult teachers being the experts who fill the heads of younger students is undeniably challenged – these students are in some cases more expert than their teachers in both
technological knowledge and skill; therefore they arguably have more power than their peers and their teachers because of the social capital they possess. Their social capital has been increased because of their attainment of technological expertise.

Through this form of play or leisure, they explore the unknown, and create their own knowledge as part of an adventure, similar to going for a bike ride to an unknown place. By exploring what is not real, what is imaginary, what is part of a fantasy world, the participants are empowered to resist dominant ideologies and explore constructions of gender and identity in a safe space. The cyber-relations they are each involved in can provide safe spaces for students to construct identities in part of the development of themselves as people.

_Jouissance_ can also refer to the transcendent bliss (see Grace & Tobin, 1998), which arguably is closely aligned with flow (Csikszentmihalyi & Csikszentmihalyi, 1988), as explained in the next subsection.

6.1.4 Flow

Bereiter and Scardamalia (1993) presented the term ‘flow’ (Csikszentmihalyi & Csikszentmihalyi, 1988) to “refer to an experience of sustained pleasure that he found to be reported by artists of all kinds, athletes, scientists, mountain climbers, and many others, when they were absorbed in an activity that sounds to us very much like the process of expertise” (Bereiter & Scardamalia, 1993, p. 102).

Though flow comes from a psychological field and initially presents itself as an unlikely fit with Bourdieu’s theory of practice and with sociology in general, I use it because it aptly describes the praxis and performance of expertise in this field. Psychological notions of expertise dominate in society; therefore I needed to review the literature about this phenomenon to identify the gap that this thesis would address. I found the concept of flow to fit very well in my analysis of the teenagers’ praxis, in spite of it originating from the field of psychology. However, flow does not describe how expertise is obtained; it describes a phenomenon that artists, athletes, and scientists experience when they are absorbed in an activity that proves to be progressive in nature, and which provides sustained pleasure (Bereiter & Scardamalia, 1993). I suggest that ‘flow’ is a disposition of the participants in this field.
Bereiter and Scardamalia (1993) described common characteristics of the flow experience, which are listed below:

- Total absorption in the activity;
- A feeling of being in control;
- A loss of self-consciousness (“which Csikszentmihalyi attributes to all mental resources being invested in the activity, so that none are available for self-reflection” p. 102);
- A loss of the sense of time;
- A balance between ability and challenge (so that there is neither too much anxiety and frustration, nor too much boredom);
- Too much repetition means it gets too easy resulting in boredom, so the nature of flow means that the task will be progressive, that is, increasingly more difficult; and
- Sustained pleasure, which becomes a motivator for more flow, which could result in the feeling of enjoyable addiction (p. 102–103).

The common characteristics of the flow experience can be attributed to each one of the participants in their praxis within this field, and I argue that it is actually a disposition that constitutes their everyday engagement with computers and associated technologies. The nature of their practice is ever-increasing and progressive, so of course the loss of sense of time, and the loss of self-consciousness - both of which could be seen as addictive practices by parents - can be justified as part of the praxis in the field. The sustained pleasure, or fun, that results from the balance between ability and challenge means that their practice consists of few boring experiences. If their praxis were boring by the standards of the field, they would not continue with it. The experience or disposition of flow is part of the teenagers’ trajectory towards expertise, but also corresponds with the other dispositions in the field of plaisir and time, and the notion of addiction. Explanation of these four dispositions within this field gives insight in to the habitus of the participants.

A key purpose of this chapter is to explore the gap between insider and newcomer views of expert practice, and it is that notion I now take up in the discussion.
6.2 Parental understandings

The reason for my interest in the parents is that I believe Bourdieu would look at parents as they contribute significantly to the habitus of the children, and they help to structure fields, especially the field I have focused on. A varied array of parental influence is presented. This influence could be considered to be positive, negative, or standoffish. It should be noted that the data presented here is what the teenagers’ believed about their parents’ perspectives.

Chris’ mum has limits on his computer time, and limits of the ratings of games he plays and that she buys. This is in contrast to his father who does not seem to do so. Chris said his dad taught him the basics as well as “in depth” (interview excerpt, 8/7/2005) things about the computer, including hardware.

As stated previously, Lisa maintains that her parents do not really take any notice or care about her computer expertise.

Charli said, “In the holidays, mum’s not home so I can go on it any time I want” (interview excerpt, 19/4/2005). Her father taught her the basics of how to use the computer and digital camera.

In reference to his game-playing, Tim said, “Mum and Dad say it's a waste of money but [smiles] not for me, it's not” (interview excerpt, 3/8/2005).

Joe’s parents ask him to type things up for them on the computer: “They’re pretty confident in me . . . and how efficient I use [the computer]” (interview excerpt, 22/6/2005).

Jake’s parents have little to do with computers and have had little to do with helping him learn computer skills. He said they do not mind that he has taken a non-traditional path in his schooling, and they just want him to be enjoying what he does. Jake mentioned they want him to train as an electrician at the polytechnic (practical tertiary program) or complete a lighting course, but that they did not want him to leave town to do it because they did not really want him to leave home (he is either an only child or the youngest child with no elder siblings living at home).
During the course of the fieldwork, Tom’s mother banned him from using the Internet for five weeks, because he had not handed in a school assignment on time. Regarding the amount of time Tom spends on the computer, he said of his parents, “Um, if they see me doing a website, they don't mind, but if they see me playing just games constantly, they think it's not good, yeah” (interview excerpt, 1/6/2005). And later that “Mum doesn't really say much but dad tells us to go outside and get some vitamin D” (interview excerpt, 1/6/2005). Tom has unlimited time on the computer, especially as it is in his bedroom, and his use is not monitored by his parents. There is a clear gap here between insider notions of expert performance being tied to experimentation and time, and newcomer perceptions that it is time on a particular type of task that is of value.

In the cases of Chris, Charli, and Tom, their mothers were the monitors of how much computer time was appropriate. No participant mentioned their father as the one who had placed limitations on the amount or type of computer and gaming use.

6.2.1 Parents’ use of computers

Generally, this subsection mentions the level of competency of the participants’ parents because of the link between parental cultural capital and child cultural capital. However, the point of this section is to highlight the gap between parents and teenagers’ understandings, and mapping different uses is the means employed to highlight this gap.

Anne’s father has another PC laptop that Anne likes to use when he is not using it (he works from home, so often is using it). He uses the computer as the main vehicle for the business he operates. Anne mentioned that her father and she were ‘addicted’ to FreeCell™:

Yes, me and my dad are addicted to FreeCell™ [giggles], but not really the computer. Well, I couldn't live without it, but I'm not as addicted as I know some people are who check their e-mails every hour and go on it every couple of hours to check for Internet news, [whispers] I'm describing my dad [researcher laughs] (interview excerpt, 19/7/2005).

With regard to Jake’s parents, his mother does use a computer at her work, but does not regularly use the home computer. Jake joked that his father did not even know how to turn a computer on.
Tim’s mother works from home and uses a computer often, and taught computer courses when he was younger. I do not know about his father’s level of use or competency.

Tom’s parents have a family computer, but he said their skill was limited to using Microsoft Word™.

Charli maintained that her parents had basic computer skills using Microsoft Office™, but she considered herself to be more skilled and knowledgeable than them.

Lisa’s parents each have home computers, but Lisa has taught them some computer skills herself.

According to Chris, his father is a computer expert, and his mother has a basic level of competence.

Joe claimed that his father was more of a computer expert than he, but that his mother often got him to do jobs for her on the computer, in preference to her own use.

All of this usage must contribute in some way to the habitus of the children in this study, and the field they have focused on in their leisure. However, the association may not be a direct or unproblematic one. For instance, although the computers that the children access are connected to both their parents’ capital and their parents’ habitus, the ways the children use them are quite different. There is little evidence in the children’s recounts of their parents’ activities of flow, jouissance, or plaisir. Reference to experimentation by parents also suggests that this is more a matter of desperation (and a possible consequence of incompetence) rather than an active, independent strategy for problem solving. Therefore the key point to be made is that from the viewpoint of the teenagers, parents and teenagers understand the phenomena of home computer use and leisure quite differently. This difference is perhaps most starkly illustrated in the meanings ascribed to the category of ‘time of use’.
I believe that a limitation of this study is that, because I have not interviewed the parents, I am unable to discuss how much parents have influenced the children’s habitus within and without this field. I am even unable to compare those parents who do have an interest in and positive influence in their children’s use of computers with those who do not, as that statement itself is arbitrary and dependent on the views of the participants.

Now that I have related the data I have about the participants’ parents and their use of computers, I now highlight how, according to some of the participants, they or their parents believed they were addicted to the computer (or tended to exhibit addictive-like behaviours in relation to the computer). Not all of the participants discussed addiction, nor was it a purpose of the study to determine what addiction was and is in the lives of these participants. This notion of addiction is discussed because it was a recurring theme in the data, but not because the parents said their children were addicted.

### 6.3 Addiction

I have outlined above an initial tension between insider understandings of expert behaviour and how expertise is performed, and newcomer understandings where some kinds of computer activities are more highly valued than others. This is a distinction between ‘working’ and ‘gaming’ that privileges work over leisure. In this context, the amount of time spent on a task is ascribed different meanings depending on the motivation for the task. In addition, there is a point at which time on a computer becomes read as indicative of some level of extreme behaviour – in this case, addiction.

One of the dominant features of the field of out-of-school leisure is the recurring notion of teenagers’ addiction to computer use. The three females denied being addicted, though two of them joked about it; one male admitted that he was addicted; one male denied addiction; and, the other three males did not mention addiction. The amount of time spent on computers was monitored in different ways by different parents, perhaps in a bid to ward off addiction. The following paragraphs describe the participants’ thoughts on addiction to computers.
Anne said she was “not really” (interview excerpt, 19/7/2005) addicted, but as stated above she and her dad were “addicted to FreeCell™” (interview excerpt, 19/7/2005). Anne said none of her friends were addicted to computers or the Internet. I did not ask Anne what she thought addiction was, but she referred to addiction as a joke. Her saying “she couldn’t live without it” (interview excerpt, 19/7/2005) is probably more indicative of her dependence on (or daily use of) the Internet.

Charli’s parents limit her hours on the Internet because, as Charli said, “‘cause they think that I like I just get addicted to it, and it's unhealthy; I don't agree with that” (interview excerpt, 19/4/2005). In a later interview I prompted, “So you mentioned to me that you were addicted to the Internet?” Charli replied, “That's just what people say I am but I'm not. Well, my mum and dad say I am” (interview excerpt, 7/6/2005).

During the course of the research, Charli was banned from the Internet for three months, for reasons personal to the family. Charli defined addiction:

Like you can't go a day without, like you can't do anything without being, like without going on it. It's like an alcoholic; they can't get through a day without like having a certain amount of drinks or something. It's like somebody can't go through a day without being on the Internet for a certain amount of hours or something. Yeah (interview excerpt, 7/6/2005).

Charli referred to addiction as a serious matter of which she did not believe she could be fairly accused. For Charli, being banned from the Internet was a punishment not for her addiction, but for having social contact with her important overseas friends – her online community:

I said to mum, I've done a week now but like I just wanna go back on, but then I know that everyone's disappointed in me, if I like do that. It's just so hard because, and it's not cause I'm addicted. Cause like I've got friends overseas, it's ok to not talk to my friends now because they're at school, and I see them and I can text them and ring them and stuff. But no, my friends overseas, it's like my only way through to them, it's so expensive to ring them and stuff. I don't get to text [SMS] them or see them (interview excerpt, 7/6/2005).

Lisa referred once to addiction as a joke, in reference to her mother, whom she said was “addicted to that site” (interview excerpt, 21/7/2005) - a trader website of new
and second hand items. I did not ask Lisa what she thought addiction was.

Specific efficacy stems from the fact that they seem to possess in themselves the source of a power which in reality resides in the institutional conditions of their production and reception (Bourdieu, 1991, p. 111).

Chris did not mention addiction. When I asked Joe, he said he was not addicted. Regarding the amount of time Jake spends on a computer, one could say that he depended on it, which could be considered to be an addiction.

Tom said he was “definitely addicted” (interview excerpt, 1/6/2005) to the Internet. During the latter part of the research, he was banned from the Internet for six weeks for not handing in a school assignment, and read up on a WOW™ game manual so he could “get his fix” (interview excerpt, 29/6/2005). I asked him before he was banned, “So what happens if you can't go on the computer?”

Tom: Um, I haven't been without one for that long before, so I don't know.
R: So basically, you have to go on it every day?
Tom: Yeah, even if I'm not enjoying it, I just go on it.
R: So, what's that like then, feeling like you have to.
Tom: I dunno, just normal, I'm used to it. I don't feel like I'm not enjoying it very often.
R: When do you think you first became addicted?
Tom: Pretty much straight away. [We both laugh]
R: So what does addiction mean to you? How would you define it?
Tom: You've gotta have it, like if you don't have it, you just crave it, I guess, yeah, even if you're watching somebody else and not doing it yourself (interview excerpt, 1/6/2005).

Tim said he was not addicted to computer games and he also implied that his friend Tom was not addicted to the computer, as illustrated in the following excerpt:

R: Do you think being addicted to the computer is a positive or negative thing?
Tim: Oh, if you were like a proper addict, probably negative [smiles]. Because like you'd fully go insane or something if you spent all day locked in a room or something [we both laugh], without going outside, doing no exercise or anything like that. Probably wouldn't be good for you. So that's probably negative.
R: Mmmm. Do you have any friends who you think are computer addicts?
Tim: Nah, not addicts. I've got friends the same as me, just like playing games and that, yeah. No one that's like on it 24/7 or anything like that (interview excerpt, 3/8/2005).
Tim’s idea of addiction included the statement, “I don’t think like about it all day, every day” (interview excerpt, 3/8/2005).

To reiterate what was stated in chapter five, one of the forms of capital in this field is mastery, that is, making it (the computer) do what I want it to do. One disposition found with each of the eight participants is that of spending many, many hours experimenting with his or her computer. Each family demonstrates its level of wealth through owning one or more home computers – possibly one modern day indicator (symbolic capital) of Western wealth. In almost every instance, the participant had exclusive use of a computer. Each teenager had unlimited dial-up or broadband access to the Internet. The return on these investments (by the agents and their families) was the gain of further expertise of the participant whose habitus continues to pursue expertise of their computer. All these aspects contribute to giving people with a certain habitus the unrestricted opportunity to spend countless hours using the computer, which in turn could be viewed as having a level of addiction. As stated earlier,

The habitus which, at every moment, structures new experiences in accordance with the structures produced by past experiences, which are modified by the new experiences within the limits defined by their power of selection, brings about a unique integration, dominated by the earliest experiences, of the experiences statistically common to members of the same class (Bourdieu, 1990, p. 60).

This point is well illustrated by adult responses to the new experiences of teenage technological enjoyment. From an adult point of view, or in dominant discourse, addiction is typically seen as a negative state of mind, and can be considered mental, physical or both, where the relevant activity in the field is the ‘fix’. The dehumanising effect on agents can be linked to a hysterisis of the habitus, which is where the agent’s perception does not reflect current reality, but a past one. Grenfell (2004) defined hysterisis as when the

. . . field moves beyond the habitus, whose structural dispositional possibilities can no longer respond to the actuality of the field. This situation – hysterisis – leads to action, which is no longer appropriate or relevant for the present state of the field and the ‘collective expectations’ (p. 29).
Another way to view hysterisis would be to consider that the habitus of the agent perceives the current world as the past world so that the habitus is stuck in time. The ‘fix’ is the only capital in the constricted field.

As the field of computer use is always changing and developing, so the habitus of these participants responds to changes in the field, which also requires time. This would suggest that hysterisis is not applicable in this field. Therefore these participants are not addicted because they are simply using strategies the habitus has presented as advantageous. So, while their practice could be considered to be addiction, it cannot be considered to be a hysterisis of the habitus. The participants are always dealing with change, and negotiating with new fields within their field.

To summarise, the theme of addiction highlights an opportunity to compare how children and adults read the same behaviours. In this instance, the regular use of computers by teenagers is viewed as leisure, and as a way to increase expertise. However, the praxis is understood by the participants to be generally read by adults as negative, as all-consuming, as an addiction, rather than as a skill or rehearsal, such as playing tennis for six hours a day, or getting up to go to the swimming club at 4:30am. Those who are dedicated to the practice of tennis or swimming are arguably admired, and are not considered to be addicted. Addiction is seen as negative, or bad, but really the praxis of these teenagers is not understood according to the conventions of the field that they have been placed in. The habitus of the adults, who may see the praxis as addiction or addictive, is different from the habitus of the students as they have grown up in a different world, have a different habitus, and are digital insiders (Goodson et al., 2002).

In the field that these digital insiders are placed, their capital is tied up in the expertise exhibited by how well one plays these games, or how well one negotiates one’s way around the computer (skill and confidence levels). Those in other fields do not understand the capital of ‘expertise’ in this field. This illustrates how it is detrimental to value different practices within different fields owing to the different capital that is valued. The rules of one field do not apply to another, in the same way that the rules of a game are specific to that game (Bourdieu, 1990). Bourdieu accounts for how the ‘rules’ became inherent and part of one’s existence, as one
becomes unaware of the structures that have produced dispositions and are reproducing dispositions:

The earlier a player enters the game and the less he is aware of the associated learning (the limiting case being, of course, that of someone born into, born with the game), the greater is his ignorance of all that is tacitly granted through his investment in the field and his interest in its very existence and perpetuation and in everything that is played for in it, and his unawareness of the unthought presuppositions that the game produces and endlessly reproduces, thereby reproducing the conditions of its own perpetuation (Bourdieu, 1990, p. 67).

In this field of expert computer use, the tendency to display behaviours often read outside the field as signs of addiction is alternatively viewed simply as a doxic practice in that it is acceptable, especially as part of one’s trajectory towards expertise. Those who consider the practice within this field to be doxic have also positioned themselves within the field. Part of this doxic practice is this flow, which as stated earlier comprises a loss of subconsciousness and a loss of the sense of time.

To summarise, the doxic praxis in this field leads some of the participants to question whether they are addicted because of adult discourse surrounding addiction. For some of the participants, they do not consider themselves to be addicted. For other participants, they happily or jokingly admit to being addicted, as they view it as acceptable.

I now turn to discussing how newcomer understandings of expertise are further complicated when questions of gender are considered. Expertise historically tends to be associated with masculinity. In the next section, I discuss this notion with regard to the participants and identify some differences between the habitus of the girls and the habitus of the boys in this study.

6.4 Issues of gender

As explained in the literature review, the culture and discourse surrounding computing is gendered (Edwards, 1992; Huff et al., 1992; Lynch et al., 2001; Sofia, 1993, 1998). The use of the phrase ‘digital insider’ helps us recognise that practices are conceptualised quite differently by newcomers and insiders (Goodson et al., 2002). This is illustrated very clearly in the different sense they make of activities, time, and pleasure. Although this is valuable in helping us to understand what has changed, it is also important to be looking at what has not changed. This means looking at the persistence of patterns within a field, that is, gender based patterns.
These can be mapped by looking at the explanations teenagers put forward to account for differences in attitudes of boys and girls towards the relative expertise of each group.

Bourdieu (2001) argued that men continue to dominate public spaces whereas women remain mostly assigned to the private space of domesticity and reproduction. With regard to changes and choices that have been made and are made in modern society, Bourdieu (2001) argued:

> If the old structures of the sexual division seem still to determine the very direction and form of these changes, this is because, as well as being objectified in disciplines, careers and jobs that are more or less strongly characterized sexually, they act through three practical principles which women, and also their social circles, apply in their choices. The first is that the functions appropriate to women are an extension of their domestic functions – education, care and service. The second is that a woman cannot have authority over men, and, other things being equal, therefore has every likelihood of being passed over in favour of a man for a position of authority and of being confined to subordinate and ancillary functions. The third principle gives men the monopoly of the handling of technical objects and machines (p. 94).

Though none of these characteristics can be clearly aligned with the data, the field of computer expertise could arguably be considered more of a traditional and acceptable field for males to be experts in; hence the following issues are raised which discuss gendered performances and understandings in this field. In this field, the social, cultural and economic capital of the participants seems to be similar between boys and girls. However, when one reads performances of expertise, how it is read and understood depends upon who is central to the performance itself. Because society arguably constructs computer expertise as masculine (or as a male thing), when people view male agents as computer experts, it may be that it is considered to be a natural practice for males and an unusual occurrence for females.

It seems that for the female participants in this study their social, cultural and economic capital was distributed further amongst wider fields (beyond computer expertise). This spread of capital is valued by the females, exemplified in Anne’s comment: “Girls may choose other things; some guys sit on their laptop every day 24/7 while girls like to do more, and get out more - that's what's different” (interview excerpt, 19/7/2005). The male participants in this study seemed to have their capital
‘tied up’ within one field, rather than spread out over many fields. Another way to view this practice is to suggest that, as the boys spent more time ‘on’ their computers, boys are more likely to be viewed as addicted. However, it is possible that a girl may be seen as addicted on the basis of less evidence (e.g., not as much time) because the practice is considered to be unusual for females. Digital newcomers may be more concerned about girls sooner than they would be about boys.

If the out-of-school leisure is dispersed over many fields for girls, then their valued cultural, social and economic capital may also spread out over more fields (compared to boys). It may be more acceptable for boys solely to have computer use and consequent expertise as their out-of-school leisure. This suggests that, because the girls’ level of expertise within the main field (computer use in out of school leisure) is not as great as the boys and that their forms of leisure (capital) are invested over more fields, their focus and intensity on the main field and consequent expertise are not as great as those of the boys.

Although traditional narratives about gender and computer expertise persist within many fields, it is possible to argue that gender has less of a constraining influence than it might have had some years ago. Neither the boys nor the girls seem to have much trouble rejecting dominant readings of expertise, and none of them seem particularly concerned about how their behaviour is read.

The following discussion presents some contrasting views of gender and technological performances. The primary goal is to identify the existence of gendered differences amongst this group of ‘teenagers’ regarding the concept of computer expertise. I now discuss some influences on the habitus of the girls in this study, and then discuss the general habitus of the boys in this study. These next two subsections demonstrate the influence of “old structures of the sexual division” (Bourdieu, 2001, p. 94) with regard to females being passed over in favour of males (in this case, that females are presenting themselves as incompetent and males as competent), and males dominating machines.
6.4.1 Habitus of girls

In this subsection, I introduce the idea that both Joe and Jake expressed, that with girls it was an age thing, that is, that when girls get older, they would realize the importance of computer skills/literacy, and would therefore take more interest in learning how to use computers and associated technologies skilfully. Jake said he thought that girls think there will always be somebody else to do it so they do not bother to learn any of the fun or technical ‘stuff’, but they would when they were older, or when there was no one else to do it for them. Joe said:

I just feel that girls don't show as much interest towards computers as boys. Because like you see a guy just willingly wanting to use a computer and then a girl, I've rarely seen them like willingly wanting to actually use a computer, and yeah, that's what I've seen. But at the end of schooling life, I think all girls and boys will be equal. And they can use computers and all that, but it's just the interest thing; they don't show the correct interest into using computers (interview excerpt, 14/7/2005).

And later: “if they [girls] do show interest, I reckon they could be like guys as well [in terms of competence and expertise level]”. Lastly, Joe said, “the majority of girls . . . in three or four years, they'll start showing interest and they'll come up with [the level of] the boys” (interview excerpt, 14/7/2005).

Joe and Jake had answered this question with the thought in mind that there were more boys around their age (14 to 17 years) who were interested in computers. Regarding the performance of gender, one could argue that to be treated as a woman is to be treated as incompetent with regard to certain activities. Bourdieu discussed an occasion where a man dressed up as a woman as a type of social experiment:

The more I was treated as a woman, the more woman I became. I adapted willy-nilly. If I was assumed to be incompetent at reversing cars, or opening bottles, oddly incompetent I felt myself becoming. If a case was thought too heavy for me, I found it so myself (Morris, 1974, pp. 165-166, cited in Bourdieu, 2001, p. 61).

Three of the five boys commented that girls may do ‘it’ (computers) later because they do not need to do so now because there are others to do it, or they do not see any point in doing it now and it is likely they will realize they need to do it later. This relates closely to Bourdieu’s premise that, if a woman is believed to be incompetent at doing something, or not given the chance to do it, or if someone else is always there to do it, they are not going to do it. It is this that Joe and Jake were
Joe, Jake, Chris, Tom and Tim all attended the same school. When I asked about the make up of the classrooms, Chris stated there were more girls than boys in his year 9 class, but in Tom’s year 12 class he said there was only one girl. This raises the question about the interest and motivation level for girls, and suggests girls are not interested in computers at the same age as boys are. However, because there are more girls in the younger classes, it may be that they are put off from continuing their computer class enrolment as Charli and Lisa had been. We now move to focus on the dispositions of the boys in this study with regard to generational insider/newcomer issues.

6.4.2 Habitus of boys

Of the participants, I asked the following question in order to ascertain what students thought about the idea that boys are considered to be the usual computer experts, as argued by previous literature. My question was, “Some people say that boys are the usual computer experts, not girls; what do you think of that?” Tom said, “Girls don’t like computers, I guess” (interview excerpt, 1/6/2005). He was indifferent about why he thought this or why girls might not like computers.

Tim: If they [girls] wanted to [be experts at computers], they could (interview excerpt, 20/7/2005).
Tim: Probably more games out there that appeal to boys than girls as well, yeah (interview excerpt, 20/7/2005).
Tim: There are girls that play games and go on the Internet and stuff, yeah, but there probably is more boys into it, I reckon (interview excerpt, 20/7/2005).

Interestingly, they did not seem to question the ‘reality’ that ‘some people’ do say this so it is possible to argue that this constitutes part of the discourse of the field. Both Tom and Tim’s comments could be grouped as a lack of interest on the part of females. However, Jake said: “I don't think it can be done on sex. I think a girl could be awesome at computers, like, it's not really the sex thing, it's whatever happens, like it's if you pick it up or not” (interview excerpt, 4/7/2005). Jake mentioned to me that most of the computer technicians he had observed were female.

Anne: I think they're probably right because there are some jobs that . . . well girls are mostly fashion designers and boys are mostly builders, and that with computing, people seem to be guys, but there's more and more girls going into it (interview excerpt, 19/7/2005).
Anne’s belief in gender construction aligns itself arguably with sex role socialisation, but her comment also suggests that she believes that occupations are not static, and that females can do whatever occupation they choose.

Lisa: Guys probably just get more attention than girls do. ‘Cause girls probably just stand back a bit while guys let their ego go [giggles], really. I dunno. They always seem to get the limelight (interview excerpt, 21/7/2005).

Charli stated,

I think it's just because boys are like, they talk about it more, but like girls sort of go on and do more private things, like me, how I'll go on [line] and post a poem and stuff - it's not something that I want everyone to know about, but boys will be like geeks and talk about all their new games and all that sort of stuff. I think that it's just because boys talk about it more and so they're sort of notorious for it (interview excerpt, 11/7/2005).

Lisa and Charli’s comments seem to point to the idea that the girls believe that males have a bigger profile than females (that they are more public about their computer expertise). It is possible that it is more acceptable for boys to promote their computer expertise in the public sphere whereas, because females are traditionally placed within a private sphere, it would be considered negative for girls to promote their computer expertise. It is interesting that some of these adolescents have traditional gendered attitudes towards computers. What is apparent from these data that have been presented in this section on issues of gender is that the participants’ trajectories towards expertise are indeed gendered.

6.5 Summary

As the teenagers in this study are digital insiders their understanding of schooling and learning is always potentially different from the understanding of digital newcomers or previous generations. Their knowledge is continually modifying and increasing, especially in relation to their expertise, and these examples demonstrate that knowledge is not static and finite.

The amount of time spent online, offline, and experimenting means that their knowledge, and therefore their expertise, continues to increase and develop, especially in order to maintain and increase their level of expertise. Traditionally (in
psychological frameworks), expertise was signalled by such things as a qualification (institutionalised state of cultural capital), or specific employment (symbolic capital), but with contemporary youth it is signalled by actions and dispositions, that is, embodied capital in the field.

The time spent experimenting led some of their parents to wonder if their children were addicted and to consider their enterprise to be possibly unhealthy. The participants made comments regarding their parents’ concern – e.g. Tom said sometimes his dad says to “go outside and get some vitamin D” (interview excerpt, 1/6/2005). It is interesting that parents’ arguments against increasing time of computer use are generally unsophisticated. Arguably, adults and traditional authoritative figures view this practice as addiction. As stated earlier, the site these participants have placed themselves in needs to be reframed in order to communicate the value of their praxis, of which the addictive tendencies can be described as doxic and acceptable because it is part of the trajectory towards expertise. There seems to be a tension between one set of activities (time on task, pleasure, etc) being read as a natural pathway to expertise or an unnatural pathway to social malfunction, deviance, or ill health. The progressive nature of the praxis lends itself to being thought of as addictive, but a level of dependence – or a close, regular engagement with a technology – is somewhat doxic in this field, and sometimes arrives as a natural and pleasurable result of flow (a disposition in this field).

The coupling of expertise and motivation is an arguable form of fun or leisure, or arguably of plaisir and/or jouissance. In addition, these home sites of leisure highlight how consumer media culture (Kenway & Bullen, 2001) and being a screenager (Rushkoff, 1997) are essential elements of youth habitus in 2005. It is likely that some of the participants find it difficult to differentiate among schoolwork, leisure, and advertisements, or “play, practice, and performance” (Downes, 2002b, p. 21).

The dispositions in this field (habitus) included time, experimentation, plaisir and jouissance, and flow. The accumulation of time spent on and offline on the computer provided the participants with the opportunity to experiment, an inherent part of learning within this field. The huge amount of time spent on the computer (owing to the sense of loss of time and loss of self-consciousness resulting from the
pleasurable experience of flow) defines some of the doxic practice within this field. For these adolescents, what Mackereth and Anderson (2000) stated resounds with their praxis: “For some students, computers are becoming a key cultural context in their own right, the medium by which they both communicate and experience much of their world” (p. 186).

While the participants like being experts, and enjoy the feelings of competence that result from it, it seems they are not always comfortable to be associated with the term ‘expert’; it may well be, as previously mentioned, that they are unhappy to be associated with the term ‘geek’, or that they are not comfortable with considering themselves to be better than others, or that even the notion of computer expertise is oxymoronic in a historical context where almost all their peers are ‘experts’ in similar ways. It is possible that they are unsure that game-playing and other computer uses (which constitute general forms of out-of-school leisure) are legitimate sites for expertise. Though they dismiss adult notions of what is acceptable, they are still influenced by the preceding generation that arguably disparages the practice in this field. I now turn to exploring the viewpoint of the participants in the study with regard to these notions about adult understandings of leisure, learning and expertise.
7.0 Digital Insiders’ Views of Learning and Schooling

It follows that powers based on (physical or economic) force can only obtain their legitimation through powers that cannot be suspected of obeying force; and that the legitimating efficacy of an act of recognition (homage, a mark of deference, a token of respect) varies with the degree of independence of the agent or institution that grants it (and also with the recognition that he or it enjoys) (Bourdieu, 2000, p. 104).

As already introduced and discussed in chapters five and six, habitus has a significant influence on practice within a field and the capital that is legitimated within the field. In this chapter, I discuss issues relating to the habitus of digital insiders in comparison to the habitus of digital newcomers, and the values associated with that and with traditional ideas of schooling and leisure. This chapter will demonstrate how Bourdieu’s idea of misrecognition is evident. This chapter will seek to answer the following research question: In what ways is the teenagers’ cultural and social capital recognized and valued at home and at school?

Previously, it has been argued that the capital in this field of home computer use for leisure is valued by those who situate themselves within the field but tends not to be valued by those who are not positioned in the field, those who are looking into the field, or who do not know the “stakes of the game” (Bourdieu, 2000, p. 151) nor have a “feel for the game” (Nash, 1999, p. 176). Specifically, this chapter will focus on how the teenagers in this study understand learning and how teenagers believe that adults differ from them in their understanding of learning. It is not an aim to prove the existence of the difference between teenagers and adults in this matter; rather the objective is to make known that for the teenagers the difference is real and that in some instances their praxis is misrecognized.

7.1 ‘The way I see it’ – participants and schooling

Learning in school, which, because it is freed from the direct sanction of reality, can offer challenges, tests and problems, similar to real situations but leaving the possibility of seeking and trying out solutions in conditions of minimum risk, is the occasion to acquire, in addition, through habituation, the permanent disposition to set up the distance from directly perceived reality which is the precondition for most symbolic constructions (Bourdieu, 2000, p. 17).
As stated previously, some of the participants can see the link between what they do and a future career (Tom, Joe, Jake, Chris); some see the link between what they do and their schooling (Charli, Anne); some do not see any link (Tim, Lisa). Learning (arguably part of a trajectory towards expertise) is a form of embodied cultural capital, one that is not recognized by all the participants, and the learning that occurs in this field is arguably not recognized as legitimate by traditional figures.

For Jake – arguably unlike the other participants – schooling has been an outlet of Jake’s interests. He has been given opportunities to learn to do sound, lighting, and computer networking at school. These are not traditional things that are learnt in school, but through these ‘in-school-but-not-during-class’ experiences he has been able to apply what he has learnt at school in out-of-school life. From this learning and these experiences, he is now focused on making a career as a ‘techie’. Jake has made the most of opportunities that have passed his way and learnt much from watching other people make mistakes. He has often been ‘Johnny-on-the-spot’ who has benefited from being in the right place at the right time to gain experience and in-depth knowledge about technological systems. Jake’s expertise includes knowing how to fix things or make them work just well enough in order to get through a show, until they can be replaced with the items proper. He could be called a problem-solver and a ‘Mr. Fix-It Man’. This disposition is crucial to all his areas of expertise, as he needs to be able to determine what is wrong, why it is not working, and try various techniques to fix it or solve the problem.

At Jake’s school, staff had made schooling relevant for him through the following examples:

- Jake: “The Principal at my school actually decided and said ‘Since you're doing all this, we'll probably drop back your classes, to three classes, and we'll give you credits for it’” (interview excerpt, 9/5/2005).
- Jake: “They've basically rostered classes so it’s, in the computer room, so it's not when I've got classes. They’ve built their roster around, they've moved my classes and rostered them around me” (interview excerpt, 9/5/2005).
According to Jake, his Principal was realistic that Jake was not going to end up being ‘dux of the school’ and take six subjects, and go on to university, etc.

Jake was taking Geography, English, and Drama as his three subjects. He believed Drama was the only relevant subject as it enabled him to do production type activities and pass technical unit standards in this area. Some aspects of English such as film studies were of interest to him. About geography he said, “I don’t know why the hang I chose geography” (interview excerpt, 9/5/2005). With regard to schooling in general he stated,

Some mornings it's a bit like 'oh school' [uninterested tone]. And other mornings I'm like, 'yeah, it's cool'. Like, days that I have all my classes in a row, 'oh a school day'. ‘Cause yeah, I just get bored, I'll sit there, and half the time I'll just shut off and think about what I'm meant to be doing (Jake, interview excerpt, 9/5/2005).

However, as Jake had been involved in sound and lighting activities since intermediate school (years 7–8), and owing to the number of projects and responsibilities Jake had within the high school, his schooling experience had given him many opportunities for him to do things that he was interested in. In primary school, Jake maintained he had little or no experience with computers.

Chris and Joe both commented on how they had picked up new skills in their computer classes at secondary school. They were the only two who linked how using the computer helped them in their schoolwork and homework, especially for research. Joe especially used the Internet to help him study for exams. School and study were positive activities for Joe.

Chris had attended the same primary school for Years 0 to 8. At the time of the study, he was in his first year of high school (year 9). At his primary school he had received much encouragement from teachers to learn software, was selected to operate as the resident expert in his classroom and also chosen to be involved in extra activities to develop more computer skills. Chris said, “They [the teachers] did recognize that I had a bit of potential in computing. My classmates did - they helped motivate the teachers to put me up to higher levels and things like that” (interview excerpt, 9/5/2005).

‘Dux’ of the school is the New Zealand lay term used to describe the student with the highest academic record in their final year of schooling.
His primary school experiences were in sharp contrast to his initial experiences at high school:

R: How does your confidence in your computer skills affect your attitude towards school?

Chris: Again, my teachers [in secondary school] really haven't noticed my skills. I really do want to shine and I really want to show them that but sometimes you just have to hold back because sometimes it's really not the right time to show all your skills to everyone at first. So when I go to my computing class - which unfortunately I've just ended ‘cause it's term 2, I only do half options this year, but yeah, when I go to computing class, I find those skills to be quite useful, and with computing, with knowledge like picking up and understanding different things, it's helped me in schoolwork and things like that. Mmmm (interview excerpt, 8/7/2005).

With regard to the lack of skill recognition and the lack of stimulus for younger high school students, Chris said,

Chris: I know there's more to learn out there but I'm looking for these opportunities and I can't find them, so I'm still searching really.

R: So are you quite disappointed that you haven't got these opportunities like you did [in primary school]?

Chris: Yes! I'm sorely disappointed, ‘cause I know that college is a place of opportunity, you're stepping up, you're moving on, learning about careers and all, but it's not just popping up. Where is it? (interview excerpt, 8/7/2005).

Selwyn (2006) discussed the “digital disconnect” that students may feel with having technology-rich homes and technology-poor schools. However, in Chris’s case, it is not that there were not computers for him to use but that there were few opportunities to use them at school.

Tim was not sure about how relevant school was for him. He reduced the curriculum to two important subjects – Mathematics and English.

R: So you don't really know what you want to do in the future but how relevant do you think school is for your future?

Tim: Oh I guess some subjects are - Maths and English. But they're like, ‘cause if you've got Maths and English you can do a lot more jobs, yeah. But I think sort of relevant, I guess [smiles], yeah, I dunno (interview excerpt, 3/8/2005).

Out of the subjects that Tom took, he said, “Design and Computers is probably the
most relevant, maybe a bit of Maths” (interview excerpt, 1/6/2005). I asked him if he thought the business one might be helpful?

Tom: Yeah, if I wanna start my own business, I'll have the skills.
R: So are you taking any subjects because you have to?
Tom: Yeah, just to fill the gaps (interview excerpt, 1/6/2005).

Of the primary school he attended, Tom said, “They like to think they are a technological school but I didn't really use computers there” (interview excerpt, 29/6/2005). Both the primary school and intermediate school Tim went to used Macintosh computers which he said he did not like. He used computers only in the computer class of the computer suite at his intermediate school, not in the classroom.

Tim and Tom did not think their confidence in computer skills affected their attitude towards school. Tim stated, “I don't think that it helps me or improves my attitude or anything. Yeah, I don't think it does (interview excerpt, 3/8/2005)”. Tom said, “It doesn't affect it at all. Just school's boring and it's school [laughs]” (interview excerpt, 1/6/2005). Tim was similar in his thinking:

R: Is school a positive place for you?
Tim: Yeah, some days. I don't not like going. Yeah, so, I guess. Yeah, I don't like want to wag or anything, so it's alright, yeah.
R: What makes it not positive?
Tim: Oh it just, some lessons are boring and that.
R: So would physics be like your most boring subject or just hard?
Tim: It's not boring, I just don't really understand it very well, 'cause it is quite a hard subject to understand. There's a lot of people that aren't very good at it [laughs] (interview excerpt, 3/8/2005).

Many of these students seem to have a limited connection with their schooling and associated experiences. The students know they should succeed in school, yet school seems to be situated in former fields akin with that of a print culture (McLuhan & Fiore, 1967) or print-based literacy (Lankshear & Snyder with Green, 2000), whereas it is arguable that their habitus and the fields they position themselves in – that of a digital culture (Levinson, 1999; Lynch, 2002) – have changed. Some students accept the difference between the freedom of home computer use and the limitations of school computer use (Selwyn, 2006), and but others continue to be alienated from schooling (Gee, 2003, 2004; Green & Bigum, 1993; Kenway & Bullen, 2001). It is possible that the ‘pretend’ learning that is occurring in schools is a far cry from what these participants are learning in and through cyberspace. Is it more appropriate for
the students to state that their “directly perceived reality” (Bourdieu, 2000, p. 17) is what goes on in front of their computer screen? For some students, engagement in cyberspace is a preferred reality, rather than schooling, which may appear to be a surreal reality. This highlights a difference in mindset between digital insiders and digital newcomers:

The notion of the fracturing of space involves the dramatic emergence and explosion of cyberspace as a distinctively new space co-existing with physical space and, particularly, with physical space constructed in industrial terms. The divergence in mindsets is between those who continue to see the world in terms – or through perspectives – forged within the context of industrial mastery and constitution of the physical world, and those who see the world as inherently different from before, on account of the impact of the industrial technology revolution and a new informational or cyberspatial paradigm emerging with it (Lankshear & Bigum, 2000). More specifically, the divergence is between people who view the world as being more or less the same as before, only more ‘technologized’, and those who see the world as now being fundamentally changed, in large part because of the way new technologies have impacted it (Goodson et al., 2002, p. 14).

The field of schooling has changed because fields are ever changing (Grenfell, 2006). As the habitus closely interrelates with the field, the habitus challenges the field, but a hysterisis (where the habitus of the agent perceives the current world as the past world so that the habitus is stuck in time) on the part of those people who continue to construct schooling is arguable because it is not favourable for teachers, school administrators, curriculum designers, etc., to identify their own misrecognitions, or as Brabazon (2002) said, “it would be damaging for teachers to spend all their energy revealing . . . the power they gain from the system while that system is crumbling around them” (p. 188). As Grenfell (2004) said, “It is not in the interest of those who benefit from keeping these processes and products occluded to acknowledge them” (p. 194).

Bourdieu (2000; see also Reed-Danahay, 2005) argued that, if enough people understand society and the way it works, then change can be effected through acts of resistance. If enough people perform acts of resistance “within a particular field (or several), then the structure of the field changes and with it the subsequent constituent habitus” (Grenfell, 2004, p. 186, emphasis in original).
The arguments I have presented lead me to suggest that it may be that if enough teenagers construct their expertise in out-of-school settings that the nature of schooling as it stands will have to be addressed in order to cater for students who no longer have the same needs as the children of 20+ years ago. If enough people resist, then the field of traditional, formal schooling will have to change, in response to the habitus of the participants which has changed. As Donna Alvermann said, “many of the literacies young people are successfully using outside school can be connected to what goes on within formal schooling, if only we are willing to give it a try” (cited in Lankshear & Knobel, 2003, p. x).

Gee (2003) claimed video games utilize good learning principles that educators can draw on to develop curricula that integrate digital media and learning technologies. The idea that playing games is a waste of time is another example of misrecognition, that is, those who look in on the field, but are not involved in that field, do not value the capital within the field. This thesis does not suggest doing away with social interaction with other children and with teachers (Brabazon, 2002). However, significant social interaction occurs when agents are online, and this should not be disparaged.

What might these acts of resistance look like? It may be that e-learning becomes more of an expectation in secondary and primary schools, though it is unlikely that the Internet will replace the various roles of a teacher (Brabazon, 2002). Perhaps we will see cyber-classrooms existing within schools, but where students are in front of a screen with their teacher beside them facilitating their learning experiences, rather than being seated at a desk in a classroom with a whiteboard at the front of the room. The traditional structures of schooling, with face-to-face lessons, subject structures, and one teacher per 25+ children, may be dispelled. If schooling is a process rather than a place where learning occurs (Groundwater-Smith, Ewing & Le Cornu, 2007), then schooling can actually take place in their homes using their computers in the unlimited, intangible world of cyberspace. Because school may not be considered a site, but considered more a process, we may find that some children choose to stay at home and engage in ‘online school’. Groundwater-Smith et al. (2007) suggested that schooling may indeed change because now digital technologies can enhance social contact, reduce education costs, and provide communities of practice (such as wikis and networks). In 2002, Brabazon cautioned about how e-learning was considered to
be the way of the future and had poisoned the concept of teaching. She advocated that tertiary teachers should reclaim lecture theatres and tutorial classrooms, so that the educational experiences of the students are improved. While Brabazon identified some benefits of using the Internet in tertiary education, and highlighted how distance students are catered for more effectively because of the Internet and isolation is no longer such an issue, she reiterated that accomplished teachers contribute to students’ education in a way that the Internet cannot do. However, in 2007 and beyond, it remains that if the premise is correct that *digital insiders* have different learning preferences and abilities, as schools are established on the previous print culture, then schools and teachers may need to change to reflect the digital culture of this current age (Lankshear *et al.*, 2003). In keeping with the theme of differences in understanding what is valuable, I now turn to discussing teachers’ notions of the participants’ expertise.

### 7.2 Teachers’ notions of the participants’ expertise

Anne shared an anecdote about an experience she had with a teacher in the previous year. This example demonstrates an outdated print approach to an electronic preference, arguably aligned with the digital culture that the habitus of these participants prefers:

> In textiles last year we were given a sheet of paper with the essay question on it. As it was for textiles the essay was on some material, I don't quite remember what, she [the teacher concerned] specifically said, um, but I remember her telling us that we weren't allowed to type it up on the computer or present it on the computer because then we'd be copying information. And I came home and told my parents how strange that was. They told me to talk to the teacher about it. I explained [to the teacher] I was in [a laptop] class the year before and would really like to present it on the computer or at least type it. Finally, she said I could do it on the computer, but print [off] all the information I'd got on the sites, and I also thought this was quite weird. I talked to my parents again and well they took it up. It hadn't happened to me before so my parents got involved, they went to see the Year 9 Principal and things and they got it sorted out because otherwise like all the other kids that use books had to photocopy every page that they used is what she was basically telling me to do. So, yeah, so, finally she allowed it (interview excerpt, 19/7/2005).

Anne stated that other teachers in her new school had not known about her two years of previous experience (years seven and eight) of being in a classroom where each child had his or her own laptop computer.
Jake’s experience with teachers in his school suggests two attitudes: 1) that the teachers do not approve of his non-traditional role as the technical manager of the school computer network while still being ‘just’ a student, and 2) that they realize the importance of ‘getting along’ with him because his skills play an important part in the success of their use and their students’ use of school computers. Jake illustrates this latter attitude with the following quotation:

‘Cause what they gotta remember is yeah, I'm their computer help [laughs] ‘cause whenever classes come into the computer room, I'm basically the guy that knows everything. Like when the computer classes, which teachers take, we've got two computer teachers which just teach them like Fireworks and Dreamweaver and stuff and Word, Excel, but if anything technical goes wrong, they have to call me in from my class (interview excerpt, 9/5/2005).

This is an example whereby Jake has destabilized his teachers’ control, and possibly demonstrates a subconscious ‘act of resistance’ to teachers’ authority through his level of competence with digital technologies (King & O’Brien, 2002).

I did not ask Tim about what his teachers thought of his computer expertise and whether they knew anything about it. I did ask, “How would your teachers describe you? Probably know this one from your reports I guess.” He replied, “I dunno, just [an] average sort of person. Don't talk too much, not quiet too much, just sort of average, I reckon” (interview excerpt, 3/8/2005).

During an observation, I asked Tom, “Do your teachers know that you do this [design websites]?”

Tom: Some of them, yeah.
R: The ones that know, what do they think of it?
Tom: It's pretty cool. My English teacher has hired me for her business website, and yeah, thinks it's pretty cool (interview excerpt, 1/6/2005).

It is probably not a realistic notion to expect secondary teachers to know of every child’s area and level of expertise. However, I suggest that it is realistic to expect teachers to know about children’s computer expertise in order to be able to use him/her in the classroom to help others, or in the very least instance to help themselves as teachers with negotiating software and connecting hardware.
One could state that within the broad field of schooling, because these children’s expertise is not in the form of a qualification (institutionalised cultural capital), their expertise is not valued. However, it is arguable that, because their peers esteem them, they have status (social capital), which should mean that their expertise would be valued and acknowledged by their teachers. Of course, this does not apply as the teenagers and the teachers have positioned themselves in different fields. This is perhaps a further indication of differences between digital insiders and digital newcomers. This also lends weight to the argument that the teachers do not recognize the praxis in the field of teenagers’ area of expertise as legitimate sites of education.

7.2.1 Misrecognition and legitimation

Arguably, the most significant finding of this study suggests that those within the field of teenage technological expertise value the diverse forms that capital takes in this field, and the diverse pathways towards it. They therefore legitimate the praxis found in the field. Those who do not know the “stakes of the game” (Bourdieu, 2000, p. 151) in this field, on the other hand, misrecognize the practice (or perhaps it goes unnoticed, see Maddock, 2006). For Bourdieu:

> The countless acts of recognition, which are the small change of the compliance inseparable from belonging to the field, and in which collective misrecognition is ceaselessly generated, are both the precondition and the product of the functioning of the field. They thus constitute investments in the collective enterprise of creating symbolic capital, which can only be performed on condition that the logic of the functioning of the field remains misrecognized (Bourdieu, 1990, p. 68).

This quotation suggests that misrecognition is a fundamental condition of maintaining a field. Hence, as misrecognition is revoked, a field would change and broaden, which is perhaps what needs to happen with the structures of schooling.

The theme of addiction has an in-school parallel in the notion of misrecognition. A recent telephone survey conducted by the Stanford University of Medicine (Aboujaoude, Koran, Gamel, Large & Serpe, 2006) questioned 2,513 adults about their Internet usage in order to determine features of impulse control disorders evident in problematic Internet use. The questions were derived from established diagnostic criteria for the diagnoses of other disorders – such as impulse control
disorders and obsessive-compulsive disorders – and substance abuse. It concluded with:

Future studies should delineate whether problematic Internet use constitutes a pathological behaviour that meets criteria for an independent disorder, or represents a symptom of other psychopathologies (p. 750).

This study seemed to assume that a lot of Internet usage was problematic. They asked respondents to report unsuccessful efforts to “reduce Internet use or a history of remaining online longer than intended, Internet use interfering with relationships and a preoccupation with Internet use when offline” (p. 750). Prior to the interviews the researchers determined that these four aspects relating to Internet use were problematic. While this gives the opportunity to critique positivist notions of prior hypotheses, I wish to raise the question that perhaps this constitutes misrecognition on the part of the researchers and the interviewees. For example, the researchers have misrecognized the practice within the field, as they believe it to be problematic. The interviewees are associated with problematic Internet use because they have been asked to identify how they have tried to reduce their Internet use, or highlight when their Internet use interferes with relationships. Because they are associated with what has been constructed as negative practice, they then assume their practice is negative. This could be a situation where the interviewees misrecognize their use because of the interview questions within the study. Their use may in fact not be pathological any more than my Internet use is pathological but what it does do is indicate that the fields have moved and changed but the identification of praxis and behaviour has not. Grenfell (2004) gave another example of hysterisis whereby “some individuals are simply out of time and space, attempting to apply old ways of doing things and of understanding to a rapidly changing world” (p. 124). Here it seems that pathological behaviour has been classified by rules applicable to other fields. The field of Internet use as a form of leisure arguably constitutes a legitimate site of praxis (that involves legitimate learning) whereby applying the rules of pathological behaviour to this new field constitutes hysterisis on the part of the researchers and on the part of those being researched (as a result of the participants being influenced by the researchers’ questions). The “stakes of the game” (Bourdieu, 2000, p. 151) in this new field are unknown because the field and its praxis have not yet been legitimated.
Until digital newcomers themselves are engaged in the field of home computer use in similar ways to the participants in the study, they will continue to misrecognize and perhaps not accept the praxis within this field. Bourdieu (2000) spoke of co-option, which is evident within relations between digital insiders but may need to be utilized to introduce digital newcomers to the field in order to assume the habitus particular to the field.

Every field is the institutionalisation of a point of view in things and in habitus. The specific habitus, which is demanded of the new entrants as a condition of entry, is nothing other than a specific mode of thought (an eidos), the principle of a specific construction of reality, grounded in a prereflexive belief in the undisputed value of the (p. 99) instruments of construction and of the objects thus constructed (an ethos). (In reality, what the new entrant must bring into the game is not the habitus that is tacitly or explicitly demanded there, but a habitus that is practically compatible, or sufficiently close, and above all malleable and capable of being converted into the required habitus, in short, congruent and docile, amenable to restructuring. That is why operations of co-option, whether in the recruitment of a rugby player, a professor, a civil servant or a policeman, are so attentive not only to the signs of competence but also to the barely perceptible indices, generally corporeal ones – dress, bearing, manners – of dispositions to be, and above all to become, ‘one of us’) (Bourdieu, 2000, p. 100).

Part of assuming the habitus particular to the field in order to be accepted or recognized is to embrace the ways that learning occurs in the field, after first identifying how learning occurs. It is this notion of learning in a new field that I turn to now.

7.3 Learning in a new field

To this point, I have looked in detail at the conventions, rules and rituals which constitute the field. In addition, this field of home computer use as out-of-school leisure is partly defined by the way that these participants say they learn and how they approach learning in this field, all of which is part of the praxis in this field.

It is possible to argue that learning is part of the overall field of leisure, and that when one ‘does’ or ‘is’, one is learning. Not all of the participants viewed their practice as learning, and some did not see that what they were doing had any link to their schooling, or possible career paths, or had any relevance to the rest of their
lives. This strongly reiterates the widely recognised point that learning and schooling are not always tied. However, some viewed their computer expertise as having strong links to their future occupations.

As will be illustrated in the following text, the praxis in this field of out-of-school leisure of teenage experts is a positive endeavour for personal expression. The participants’ focus is on learning and developing their knowledge and skill, specifically with regard to their computer use. As stated previously, the praxis in this field can lead to the attainment of further capital. It is arguable that this field is a valid, real and accessible space for learning.

7.3.1 How do the participants learn?

Questions concerning how and where people best learn have informed significant amounts of research over the past twenty years. Debates about learning styles, learning preferences and the kinds of intelligences supported by or catered for in traditional and transformative pedagogical models are widespread. Outside the specific field of ‘learning theories’, however, there is still the need to look critically at the extent to which dominant understandings of learning held by teenagers match up to or are in tension with the dominant understandings of learning held by the significant adults in their lives (including teachers and parents). This involves distinguishing between the myths that adults may have about how children/teenagers learn regarding computers and how they actually do learn when using computers.

The participants stated various ways they went about learning new things relating to technology and especially when it came to computers. Learning techniques used by the participants included:

- Trial-and-error (figure it out myself);
- Ask someone (friend or parent, face-to-face or online, e.g., through e-mail);
- Watch someone;
- Research using the Internet;
- Ask questions by posting queries on online forums or message boards;
- Use software help menus; and
- Tutorials (both online and offline).

Two boys mentioned reading manuals as a last resort for learning. Tom specifically referred to having to read a manual in order to ‘get his fix’ when he was banned from
using the Internet (which meant he could not play the online game WOW™). Jake joked about a high pressure situation where he had to use a manual at the last minute in order to learn how to operate a new piece of equipment: “I read up the instruction manual and [there was] a lot of ‘if this doesn’t work, I’m gonna die’” (interview excerpt, 9/5/2005).

I asked the participants about how they preferred to learn. Jake, Charli, and Lisa stated they were visual learners. Chris knew he had strong learning preferences for the musical and intrapersonal types of multiple intelligences (Gardner, 1992). Chris believed he was learning all the time when he was on the Internet and that he was learning all the time at school. He pointed out that he probably was learning more slowly if there wasn’t music on or if it was in a noisy environment, or if there were lots of people around.

Joe was confident in his ability to figure things out himself, or alternatively he would ask his dad, or ask teachers during the time he was doing computers at school.

Tim was asked, “How do you think you learn best?” He replied, “Oh like hands on, practical sort of stuff like experiments and that. I probably understand it a lot better when I can like actually do it and see how everything works and that, instead of just reading about it or getting told about it, yeah” (interview excerpt, 3/8/2005). Tom’s first port of call to learn something was trial-and-error and figuring it out himself, or then he would ask somebody he knew, or ask on the Internet, or research on the Internet.

When I asked Anne, “How do you think you learn best when you’re in a classroom and there’s no computer?” she replied, “Um, probably, oh it depends what sort of environment it is. But probably the teacher talking to us or involving us in a discussion, or reading interesting stories about it, not just textbook work, but interesting information” (interview excerpt, 1/8/2005). So next I asked, “Thinking about how you learn, how do you think you learn best?”

On the computer? Um, I learn, like [when] I have to do an essay, I think I learn more [by] looking on the Internet, finding my own information then rewording it, rather than the teacher give me textbooks and telling us to write an essay [on] that information. Just because there's so much more information on the Internet and
so many different sites and I find it just a lot easier than flicking through a book (interview excerpt, 1/8/2005).

This suggests that Anne ‘makes do’ with what is going on in a classroom but suggests that she probably prefers to use a computer. When I asked her about whether she was learning all the time when she was on the Internet, she said, “No, not at all. There's a lot of times when I just go on to play games or have a, like look up celebrities or something. Very uneducational!” (interview excerpt, 1/8/2005). In one reading, this could be seen to point to Anne believing that learning can take place only contextually, or in a specific environment set aside for learning (like a classroom), and not incidentally. On the other hand, it could also signal Anne’s recognition that most adults tend to regard that kind of activity as not educational.

This is in stark contrast to Charli’s notions of learning illustrated in the following three excerpts from interviews:

I think you are always learning, no matter what you're doing, even if you're on [watching] the TV. I think you're always learning (interview excerpt, 11/7/2005).

R: So what kind of things are you learning when you're on the Internet?
Charli: You're learning new things, like when you explore, like the Internet Explorer, like with properties of a computer, but when you, even when you do things that you've done before, it's still learning because it sticks with you. It's like you're memorizing it, sort of? (interview excerpt, 11/7/2005).

R: So you learn all the time on the Internet, are you learning all the time when you're at school?
Charli: Not always. I don't think so because when you're on the computer, you sort of choose to go on or not, but at school you have to go, so it's like you're not always in the mood, and if you don't wanna be taught, then you just, you don't let them. You're just disruptive and stubborn and stuff, so you've gotta be in the mood for it, that's why I think that computers are like more good. More people will learn from computers I think.
R: Cause they want to be on it.
Charli: Yeah, but then that goes both ways because sometimes like, they teach you like maths at school, but you don't like maths, but they teach you it anyway, and it's something that's probably really valuable in the future. But um, mmmm. They teach you it whether you like it or not (interview excerpt, 11/7/2005).

Joe also believed he was learning all the time. His views add to Charli’s statements regarding learning at school.
R: Do you think you're learning all the time at school? If you look at the two different places where you sit down, and you're meant to be paying attention, what do you think about that?
Joe: Well, sometimes at school, you can get really tired and then, don't feel like learning, but um, I think you do learn at school all the time just as much on the computer as well. But I don't think you can really compare them both, yeah, it's totally different.
R: Because . . . ?
Joe: Because you've got a teacher teaching you. Yeah, and then on the computer, it's just you by yourself, scanning through things.
R: So what are some of the variables with having a teacher teach the class?
Joe: You've got surrounding noise, you have to put up with like stupid people [laughs] sometimes, and yeah, it gets annoying. The other thing is, the disadvantage at school is, is that if suddenly you lose what the teacher is talking about, it won't be the, yeah, you can't actually like go back and, you can ask them, but it won't be the same. It won't be the same. So yeah, you have to like stay on task. But with the computer, you can go back and you can read the same thing, so yeah (interview excerpt, 22/6/2005).

Joe also thought he was learning all the time when on the Internet:

As you read through the websites, you'll be learning something anyway, so y'know, it's um, if you go on the first page, it'll be current events, so you just quickly scan through it before you go on to something else, or if you're waiting for a website to open, yeah, you'll be reading something anyway, so you will be learning, yeah, of course (interview excerpt, 22/6/2005).

For Tim, it depended on what he was doing and the value that he deemed it had as to whether he was learning anything of value. When playing games, he was relaxing, and it was a form of entertainment, and he was learning how to play the game better when playing it, but he said he wasn't “learning anything that you need in life” (interview excerpt, 3/8/2005).

With regard to how they learn new things on the computer now, Tom, Tim, Jake, and Charli all mentioned asking somebody else for help, whether it was a peer or another expert. Jake, Tom, Lisa, Charli and Joe all referred to being confident enough to figure it out themselves. Joe and Chris mentioned that they still relied on their fathers for help, and for Chris his father was still an important resource (provided his father was present). I wondered who had taught them the computer basics in the past. Lisa did not refer to a specific person who had taught her, or a time period where she had learnt a lot. Anne emphasized how much she had learnt from her teachers in her Years 7 and 8 school experiences. With regard to who taught them
the basics of computer use, Tim (mother), Joe (father), Chris (father), Anne (both), and Charli (father) all stated that one or both of their parents taught them the initial basics. Jake was self-taught. Tom claimed to be self-taught, though he may have been underestimating the role his two elder brothers and his parents played in his development.

It is possible to argue that children’s preferences for learning have changed (Downes 2002b) from that of previous generations, or from those who are digital newcomers, so therefore it is difficult for many digital insiders to make connections with traditional, formal learning (Downes, 2002b).

As fields change and the construction of capital changes within the fields, there can be conflict which catches people in a double bind (Bourdieu, 2000; Grenfell, 2004). It is possible to argue that these participants are caught in a contradictory position, or double bind, that has resulted from the conflict of the fields that their schooling is placed in (in definite contrast to out-of-school home computer use for leisure) and habitus. Grenfell (2004) called this conflict between field and habitus a sort of “social schizophrenia” (p. 29). When the field moves beyond the habitus, it is termed ‘hysterisis’ and this is where the “structural dispositional possibilities can no longer respond to the actuality of the field” (Grenfell, 2004, p. 29, emphasis in original). This leads to action that is no longer “appropriate or relevant for the present state of the field” (Grenfell, 2004, p. 29, emphasis in original). Double binds can create “internal divisions and suffering” (Bourdieu, 2000, p. 160) which can mean that actors do not know which way to turn, nor know whether to trust the past, present or future. Is it feasible to argue that those who construct schooling and subjects and classroom programs are “out of time and space, attempting to apply old ways of doing things and of understanding to a rapidly changing world? Unable to adapt to the modern situation, and caught in old ways, there is a ‘hysterisis’ or inertia of habitus” (Grenfell, 2004, p. 124, emphasis in original). So while there is not a hysterisis on the part of these participants, I suggest that the habitus of many children has changed and a double bind has arisen and will continue to exacerbate, perhaps as a result of the unchanging fields traditional, formal schooling is placed in. I now turn to examining how school is performed in allocated environments.
7.4 The performance of school

Presenting comments such as the ones above gives weight to the notion that some of these students think that schooling is what one does when one is ‘in school’ and is performing in practice ‘school-like’ things. It is possible that schools and teachers place too much emphasis on ‘place and space’, and that what should be emphasized more is what is being performed rather than where it is being performed (Bigum, personal communication, 2005).

School is performed in places and spaces where it has to be, but it is arguable that school-like learning could be performed in their home and leisure space without them realizing it, and for some of the participants it was. Maddock (2006) conducted ethnographic case studies with nine British children and found the children’s home learning to be rich, unique, diverse, and spontaneous. Just as learning at school is not always obvious, and just as there are many activities that go on at school which are arguably not valuable in terms of education (e.g., waiting in line, listening to a teacher’s lesson on a topic already understood), is that argument not also the same for leisurely home computer use?

Learning could also be performed at school without the thought of it being a school thing, if tasks are considered to be fun. Just as participants did not see the relevance of school to their everyday lives, many of their schoolteachers did not know about their competence and expertise in their ‘out of school’, home life. This leads us to question just what school is. Is it a place or is it a state of mind (Bigum, personal communication, 2005)? For me, as a distance learner in my postgraduate studies, my sense of university (known as ‘school’ in the USA) was almost solely about engaging with digital texts, digital libraries, digital communication, and online technologies such as instant messaging and Internet telephony. I had few face-to-face interactions. This has suited me as a learner and as a person positioned in a digital culture/world. For me, the state of mind of school is constituted about how, when and what I am learning, not really where I am situated. Schooling is a state of mind for me, not a place I go to. I learn all the time, and sometimes it is with print media, or the television, or with talking to people, but most often it is in engagement with digital texts on - or offline in front of my computer screen. Bourdieu claimed:

We learn bodily. The social order inscribes itself in bodies through this permanent confrontation, which may be more or less dramatic but is always largely marked by affectivity and, more precisely, by
affective transactions with the environment (Bourdieu, 2000, p. 141).

Is it possible to argue that the environment that one transacts with no longer has to be a physical space that one travels to and from, and that cyberspace provides the affectivity necessary for many elements of education?

Bourdieu (2000) discussed the notion of scholastic illusion or scholastic fallacy, which suggests that learning within schools sets up distance between school and reality. Those who are successful at ‘school’ are able to distinguish themselves from others, but it often is as a result of exclusive privilege and high accessibility. Robbins’ (1998) comment on scholastic culture was that it “is an artificial acquisition presenting itself as absolutely valid” (p. 40). Bourdieu (2000) pointed to the habitus and cultural capital of those who have this privilege:

Those who are immersed, in some cases from birth, in scholastic universes resulting from a long process of autonomisation are led to forget the exceptional historical and social conditions that make possible a view of the world and of cultural products that is characterized by self-evidence and naturalness (p. 25).

For Bourdieu, this sense of scholastic illusion was antithetical to common sense – the realm of the working class. Bourdieu (2000) delineated common sense as a world where the

. . . only truly common place where those who are confined to it, for lack of access to the scholastic disposition and to the (p. 97) historical conquests of the world of science, can, exceptionally, find one another and find grounds for understanding one another, as can all those who have a place in one or another of the scholastic universes (p. 98).

Grenfell (2004) explained that “Bourdieu identified two principles of the education system . . . . First, hierarchisation; defined in terms of a distance from a notional perfect competence. Consequently, every position is a point of relative failure. Secondly, the verdict” (p. 78, emphasis in original). Bourdieu claimed that within this system inequality is legitimated. For example:

As the educational system now does, one universally imposes the same demands without any concern for equally universally distributing the means of satisfying them, thus helping to legitimate the inequality that one merely records and ratifies, while additionally exercising (first of all in the educational system) the
symbolic violence associated with the effects of real inequality within formal equality (2000, p. 76).

Bourdieu claimed that this verdict of education determines which path one is on and that after entering the school system one finds out what one is. The verdict of identity resulting from schooling not only determines these facts, but also helps those who achieved exclusivity to distinguish themselves, gain further autonomy and differentiate themselves.

All of this leads me to suggest that some of the participants view school as irrelevant because the scholastic view found in school is also irrelevant and does not relate to students’ reality. The current day out-of-school learning and their technological interests further exacerbate the divide between the relevance and reality of school to their daily lives and future existence. Another notable area distinct in the participants’ trajectories is their gain of capital through their use of computers.

7.5 The perpetuation of capital, pleasure and learning

As has been mentioned and discussed throughout this thesis, the participants – whether male or female – have acquired capital as a result of using computers. Their computer expertise that has been attained is a form of cultural capital that is not only sustainable but is possibly a site for the development of more capital within this field and in other fields. The building of their identity through using computers and technology for pleasure is one aspect.

The following three interview excerpts give examples of how they have acquired capital in different forms, and how they feel confident of being able to explore new fields:

R: So is your computer use - even though you haven't really been using it much - is it still a positive thing for you?  
Charli: It is, it is, because that's like the sort of thing that you choose everything that you do. And it's cool.  
R: Mmmm. So you're choosing everything you do . . . .  
Charli: And I think it's all like, there's just so much that you can, do like Maths and all the same and it's, it's just one big confusing ooh - there's just too much of it! Like the Internet, it's got your own restrictions sort of, you can choose what you want to do and you can choose how much you want to do of it, and you give yourself the limits and restrictions (interview excerpt, 11/7/2005).
Joe: They [girls] can use a computer and stuff but just going that extra bit further to, and like what I do for my future career, which I'm trying to get to, I use my computer to help me for that, and like for example, my sister, she wants to become a doctor but what she does on computer is just look at Hollywood stuff, y'know, movies [researcher laughs] and all that, yeah, yeah, waste of time. Yeah, you can have fun on computer stuff. There's a lot more to it though, yeah and you can really use it in a good way (interview excerpt, 14/7/2005).

Chris: If I wanted to take up new things in computing, I'd be able to pick up on it.
R: Your mum said before, that you often, she thought that you were good at computers because you often looked up finding out why, rather than just accepting.
Chris: Yeah.
R: So could you talk about that?
Chris: Well, I really don't know how I came to be like that, it's just what happened. It's part of my nature where I want to look into things because I really want to learn. I want to, with computing I found that, if I really want to know a program and if I really want to know how to use something, I have to understand how and why it ticks, because it helps and I can relate to different things with that knowledge. So I've found that it's assisted me in lots of different, not just, lots of different ways, not just computing (interview excerpt, 8/7/2005).

This reiterates how the participants gain more capital in different fields because they are able to choose what they learn, when they learn, and the mode in which they do it arguably as a form of leisure. In 2006, Kimber and Wyatt-Smith argued a case for having students-as-designers. In this context, it is possible to state that the participants are performing an act of resistance to the structures of schooling and the dominant beliefs that constitute good learning. They are also able to choose who and what they learn from – not just what has been set up as exclusive and privileged. They are able to learn and receive pleasure from their engagement and not have to be concerned about the hierarchisation and failure in relation to how traditional schooling determines competence (Goodson et al., 2002). They are in fact designing and engaging in their own learning.

The following examples show how Jake is strong in his sense of ability and technological nous, and in his sense of what he can do for the community through his lighting company that he manages. Jake first got the Internet at his home in this way:
My parents didn’t want to get Internet. But then I found out that it was just when Zfree had just started. So I signed us up with a Zfree account and they didn’t even know, until the Zfree letters started coming home saying ‘thank you for being a customer’. And then they’re like, ‘What’s this Zfree company?’ ‘Oh it’s free Internet’. ‘So that’s what that fax tone is when I pick up the phone’. ‘Yeah’. So it was really naughty of me actually (interview excerpt, 9/5/2005).

We do lighting for churches and stuff for next to nothing, like donations. ‘Cause we understand that they can't afford to hire mass amounts of lighting for hundreds of dollars, so what we do is we do the best job we possibly can with what we've got spare from shows. We have to make sure we don't hire out to more than two concerts or else we don't have enough gear, ‘cause we're still building and buying gear. But we do the best show possible for the least amount of money (interview excerpt, 9/5/2005).

Through drawing on her technological knowledge and skill, Lisa has been able to teach others how to use computers (as shown in this example):

R: So who have you taught - you don't have to name all their names - but y'know, give me a general idea who you have sort of taught that to?  
Lisa: Well, different ages really. Like mum, dad, my brother, Kevin [male friend pseudonym], Charli, yeah. And there's my nana [giggles]. Yeah, every range of age.  
R: Oh ok. Oh cool. So is that quite a positive thing for you to teach other people that sort of stuff?  

These examples lend support to the idea that schooling could be performed in a space that is not ‘school-like’.

For the participants, Bourdieu’s following statement rings true specifically with regard to their use of home computers as a primary site of leisure:

Since the desire for fulfilment is roughly measured by its chances of realization, the degree of inner satisfaction that the various agents experience does not depend as much as one might think on their effective power in the sense of an abstract, universal capacity to satisfy needs and desires abstractly defined for an indifferent agent; rather, it depends on the degree to which the mode of functioning of the social world or the field in which they are inserted enables his habitus to come into its own (Bourdieu, 2000, p. 150).
This relates to earlier statements made that suggest that the everyday praxis by these teenagers in this field constitutes an act of resistance to the structures of traditional schooling, *albeit a subconscious one.*

As shown in the next section, some of the participants’ school teachers tended to be ignorant of the expertise these students had, which may have caused the participants to gain more capital because the teacher does not know about them (they have ‘one up’ on their teacher), or feel that their expertise is of no consequence as their teacher has not bothered to find out, nor is interested in exploring this area with them. Therefore their capital is neither recognized nor valued.

Now that a clash of fields and habitus has been identified, I wish to focus on another area that presents a tension – that of comparing the female experts with the male experts in their understanding of computers as a school subject.

### 7.6 A gendered difference

A contrasting feature of the data is the difference between the three girls’ perceptions of computers as a subject in their secondary school. In the year they were interviewed, the three girls all stated they did not take computers at school. They viewed computer classes at school as irrelevant, too basic, or boring. They were not interested in computing as a school subject. Charli believed the three compulsory years of school computing consisted only of keyboarding and touch typing skills, and that it did not help her with her computer interest or skills. Lisa stated why it did not interest her to take computers as a school subject:

> Because like, what I do here, I just do at my own free will really, and like at school, you have to have like set work, to what you have to do, and like what I do here at home, I wouldn't think that I'd be able to do at school, like ‘cause it's into music or just read e-mails or something. It's not really about that in a class of like economics, no, it's not economics, in the computer room or something - IT (interview excerpt, 11/7/2005).

Lisa believed the content in computer classes was boring.

Anne’s experience differed as in primary and intermediate school. She had had teachers who “quite liked computers” (interview excerpt, 19/7/2005), and she had learnt to design websites, edit movies, and create animations. Anne was taught many
skills in her schooling program at intermediate, and she thinks she was more of an expert then as she almost always used a computer in her classroom. Anne’s schooling currently provides limited opportunities for computer use. She deemed her current school’s computing program too basic for her to consider it worthwhile to enrol in but neither was she allowed to advance through the program and enrol in a level congruent with her ability, experience, and skill. Her home use now did not match the level of expertise and skill she demanded of herself to consider herself an expert. In other words, she had lost some expertise because her schooling did not expect it.

When Anne was asked how relevant school was in comparison to what she wished to do in the future, she replied:

That depends on the subject. Some subjects are just subjects - they are not important at all to me. But others are more important. I don't have an exact idea of what I want to do in the future, . . . [but] . . . I basically know what subjects will help me or not. Maths, I probably will do something around maths, and so that is really important, and it's also about the subjects - which subjects I have to do well in to get into subjects next year. Like my drama, that's not gonna affect what subjects I get into next year, what marks I get and that, but in maths, it depends on what class I get in, well what grades I get this year, depends on what class I'm gonna be in next year, so that's quite important (interview excerpt, 1/8/2005).

Lisa had spent approximately two hours or more per weekday for the last three years on her home computer. She didn’t think there was any link between schoolwork helping her computer literacy or expertise, or vice versa, that is, that her computer use helped her schooling. Lisa was unable to identify any aspect of her computer use that would help her schooling. This could also demonstrate that Lisa was unsure of the questions asked of her, which included, “How does your confidence in your computer skills affect your attitude towards school?” and “What do you think of your expertise in terms of how valuable schooling is?” She replied, “I don’t know” and “I don’t think much of it” (interview excerpt, 21/7/2005) to the respective questions.

As stated previously, Charli believed that she was learning all the time. Charli discussed some other aspects regarding the environment of school:

R: So is school a positive place for you?
Charli: No. Not this year, and not the year before, so no, and not the year before that either [we both laugh].
R: So why’s that?
Charli: “I think it's sort of my fault though, but then even people that are like normal, they say like they don't like school, but that's sort of their own choice. I dunno. It's just not. I think too much is forced on you. [pause] Teachers are dicks [laughs]. I really don't like them. I know they're being paid, but still.

R: So is school a positive place for you to learn?
Charli: “In some ways I guess. [pause] I think it's personal and it's complicated, like, I think it gets easier and more positive as you get older because you can choose your own subjects and stuff. That gives you more variety and you're actually there, and you're doing stuff that you want to do (interview excerpt, 11/7/2005).

Previous literature definitely positioned gender as the big determining influence on students’ efficacy with computers. As I worked through collecting and analysing the data in this research study, what I found was not so much about gender, but actually how participants viewed schooling and learning, and how they obtained their expertise in spite of schooling. The girls did not obtain their expertise differently from the ways that the boys did. They still obtained it through having the same dispositions (habitus), and similar capital within this field. Therefore the results do not agree with the literature, though gendered elements still exist with these participants. Gender has shaped their experiences and trajectories without being an over-determining factor that means that girls never get to 'be' or perform as experts. Though gendered elements are evident, they are not all determining or all encompassing of the construction of expertise but remain significant as there are gendered subjectivities evident in the trajectories.

7.7 Summary
In light of the data presented in this chapter, I believe that the following points can be made with regard to this group of participants. Some of the participants’ expertise is recognized as positive within a school context and alternative trajectories to ‘school expertise’ have been constructed to meet these recognitions (Jake); others are disillusioned with schooling and how it can relate to what they are interested in, admittedly in different ways from one another (Chris, Anne, Lisa); some view schooling and traditional ways of learning as being inherent part of their careers (Joe, Chris). But what is important is that these participants have achieved (in their own eyes) a degree of expertise that schooling has not been particularly responsible for. Indeed, with some of the participants, schooling has had little influence in their trajectories towards expertise.
How capital links to their habitus of youth, and their family, strongly correlates with their sense of social capital (status), and their understanding of learning. They have been encouraged to learn because of the provision of equipment and Internet access, which in turn has encouraged them to experiment, which consequently has developed their expertise, thereby increasing their motivation. The teenage experts did not gain a significant amount of learning in the area of computing from education and traditional schooling; they have mostly gained their technological expertise by independent means. While Chris maintained that he did learn a lot from his teachers at primary school, and Anne claimed she had learnt a lot in her two years in a laptop classroom, the other participants maintained that they had basically taught themselves. Joe believed in the institution of schooling and tertiary education as a way of learning, but perhaps possessed little agency or self-efficacy in believing that he could teach himself computer programming, for instance. While the institution and structure of schooling have provided Jake with opportunities to learn his crafts, the curriculum of his schooling has not taught him expertise. Therefore, if I pose the question, how has education affected teenage technological expertise, I would answer that from my data schooling has not helped the participants acquire the kinds of capital associated with expertise in this field.

If the praxis within this field of home computer use continues to be misrecognized by digital newcomers, what does that mean for digital insiders? The praxis evident with the participants not only suggests but also demonstrates new learning spaces that challenge dominant structures, that is, traditional, formal schooling. Teachers are unlikely to challenge or resist dominant structures of traditional schooling because that would upset the field that they are placed in and the legitimacy of that praxis (Goodson et al., 2002). The teaching found in secondary schools is questionable when students can design and be involved in new learning spaces that suit their needs and make connections with the type of education that suits them, and additionally connect with other, similar learners. As Grenfell (2004) maintained:

> Many students and pupils are still excluded . . . in forming a relation with education, which suits them. They may not connect with what education offers them because the way thinking is represented in its systems is simply alien to their own cognitive habitus. In these cases, they exclude themselves and/or are excluded (p. 81).
Teachers and school administrators do not wish to change or challenge structures that provide employment and financial security (see Grenfell, 2004). King and O’Brien (2002) suggested that teachers might wish to delegitimate students’ competences with digital technologies, because of the direct correlation with the destabilization of their control. However, it may be that teachers will not have a choice in the matter if new learning spaces produce expertise that does not require traditional, formal schooling, and if digital insiders perform acts of resistance in relation to how, when and where they prefer to learn.
8.0 Conclusion

The task of sociology, according to Pierre Bourdieu (1989a: 7), is ‘to uncover the most profoundly buried structures of the various social worlds which constitute the social universe, as well as the ‘mechanisms’ which tend to ensure their reproduction or their transformation.’ The universe is peculiar in that its structures lead, as it were, a ‘double life.’ They exist twice: in the ‘objectivity of the first order’ constituted by the distribution of material resources and means of appropriation of socially scarce goods and values (species of capital, in Bourdieu’s technical language); and in the ‘objectivity of the second order’, in the form of systems of classification, the mental and bodily schemata that function as symbolic templates for the practical activities – conduct, thoughts, feelings, and judgments – of social agents. Social facts are objects which are also the object of knowledge within reality itself because human beings make meaningful the world which makes them (Wacquant, 1992, p. 7).

This thesis described the various constructions of technological expertise particular to the participants involved in the study. I discussed gendered differences regarding attitudes towards and uses of technology, and asked questions about the way that educational technology is perceived whilst also exploring the construction of what constitutes expertise.

The literature review comprised a review of the literature regarding the fields of computer use in the home, workplace, and schooling, computer use for leisure, and issues regarding computing and gender. The review included a discussion of the social and discursive mechanisms that function to (re)produce power and to position individuals in relation to gender, expertise and technology. Through determining how computers and technology were used in out-of-school sites, I explained the nexus and complexities surrounding the habitus of youth and of digital insiders, schooling, and constructions of expertise.

Pierre Bourdieu’s sociocultural theories along with what else I have employed is qualitative and sociological (as opposed to psychological and behaviourist), and based on an ethnographic approach where I used interviews and observations to explore the field, habitus and capital of this phenomenon. While this study has provided interesting readings of the participants’ trajectories towards expertise, it does not claim that the featured participants’ expertise was unachievable, unique or special. As stated previously, I did not seek to measure their level of expertise, nor
judge how expert they ‘really’ were. But what I did do was start with the presence of expertise, and map how that was acquired by the diverse participants. By examining the phenomenon of the sociological construction of computer expertise, I have highlighted how one’s habitus and one’s capital - specifically in this field - extensively contribute to the development of technological and computer expertise. The three research questions that framed the study were:

1. In the field of out-of-school leisure, how is expertise obtained, constructed, and performed by a group of New Zealand teenagers?
2. How does the habitus of this group challenge and/or agree with traditional/adult notions of expertise?
3. In what ways is the teenagers’ cultural and social capital recognized and valued at home and at school?

I now focus on answering and discussing each one of the questions in turn, to succinctly synthesise the findings of this study. While the following information is not new, it presents a concise description of what has been presented in the data summary chapters (five, six and seven).

8.1 Research question one

In the field of out-of-school leisure, how is expertise obtained, constructed, and performed by a group of New Zealand teenagers?

In chapter five, I delineated and explained the fields that the participants in this study are positioned in and mainly focused on their home computer use as a site of out-of-school leisure. Chapter five also explained the types of activities that comprise this field and mapped the trajectories of the participants towards obtaining technological expertise. Their technological expertise has been acquired and developed by the participants through their active engagement with computers both online and offline, but it involves an immense amount of time focused on experimenting with the computer. The participants in this study understand expertise in multiple ways and these perspectives depict conflict between dominant understandings of expertise from the psychological perspective and from a sociological perspective of the participants’ understanding. It also demonstrates a generational gap between digital insiders and digital newcomers which has implications for society and education in general (Goodson et al., 2002).
It is possible that these participants became experts because of their environment in the same way that athletes become experts because of the provision of lessons, equipment, travel, costs associated with their sport, etc. By providing software, hardware, and unlimited opportunities to explore and to ‘do’, the way is created for expertise to occur. Having money and providing necessary equipment will enable expertise to develop and those who do not have this opportunity will not be technological experts.

8.2 Research question two

_How does the habitus of this group challenge and/or agree with traditional/adult notions of expertise?_

Dominant or traditional definitions of expertise (and the habits/dispositions they assume) are not adequate for making sense of how today’s teenagers conceptualise their own computer practices. I now highlight the similarities and differences between traditional definitions of expertise and the participants’ understanding of expertise. With regards to the similarities between psychological attainment of expertise and sociological attainment of expertise (from this study), the similarities include having the motivation to develop expertise, spending a lot of time developing the expertise, and having the resources required to develop the expertise (which includes ‘environmental factors’). Differences between dominant or traditional definitions of expertise and the sociological attainment of expertise (from this study) are presented in table 7 and include:

<table>
<thead>
<tr>
<th>Psychological</th>
<th>Sociological</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural ability</td>
<td>Not inherited</td>
</tr>
<tr>
<td>Deliberate practice</td>
<td>Experimentation</td>
</tr>
<tr>
<td>Qualifications (institutionalised cultural capital)</td>
<td>Embodied cultural capital (dispositions)</td>
</tr>
<tr>
<td>Stages</td>
<td>Non-linear trajectories</td>
</tr>
<tr>
<td>Experience</td>
<td>Labelled as ‘expert’ by self or peers or family</td>
</tr>
<tr>
<td>Training</td>
<td>Possession of objectified cultural capital (e.g., Internet access, home computer)</td>
</tr>
<tr>
<td>Specific employment</td>
<td>Focus of leisure</td>
</tr>
<tr>
<td>Social capital from society</td>
<td>Social capital from peers</td>
</tr>
</tbody>
</table>

_Table 7 – Differences between dominant definitions of expertise and sociological attainment of expertise_
All of these differences in the construction of expertise have been discussed throughout the thesis. It should be acknowledged, however, that these categories are not exclusive from each other, and some characteristics of each category do overlap.

Generational differences abound between what teenagers and adults perceive regarding expertise, legitimate praxis and schooling. These differences could be framed to be differences between understandings and practice of digital insiders and digital newcomers; however, it seems reasonable to suggest that some digital newcomers exhibit understandings and practice similar to those of digital insiders though that was not the focus of this study.

While the practice of digital insiders and some of the practice of digital newcomers is ‘addictive-like’ in that it highlights a level of dependence, this practice is not negative, nor a waste of time, nor problematic in terms of ‘over-use’ or not getting outside enough. These changes in practice reflect a change in the habitus of these agents because of the change in the fields within broader society and a change in the capital they value. This new habitus demonstrates an evolution of learning preferences and a way of living that is commensurate with positioning within digital cultures. Digital engagement is preferable for some agents to face-to-face interaction. This is similar to how for some people leisure is preferable in company while others prefer to be alone. By spending many hours engaged with digital media expertise may be developed and in fact, the likelihood of expertise development is increased with more use.

It is arguable that the participants had a level of dependence on the technologies they preferred to use everyday. This everyday practice reflects a level of dependence on technological media that is ‘addictive-like’. What implications does this have? Does a level of dependence constitute addiction? If so, that would mean we were addicted to our cars, our telephones, our refrigerators and our washing machines. It would seem from using Bourdieu’s theory of practice and the terms of hysterisis, double bind, and social schizophrenia (Grenfell, 2004) that this practice can be read as something other than the negative term of addiction. The practice actually demonstrates how these agents are moving quickly and are keeping up with the development of technologies. We must accept the praxis by reframing our ‘gaze’ as I have suggested and discuss further below. The misrecognition of the praxis in this
field needs to be challenged. Secondly, we should look for what options are possible with regard to changing traditional schooling so that it suits the learning preferences of these new digital insiders.

The dispositions the agents have include an interest in and capacity to negotiate digital technologies. The dispositions also include motivation and flow and this has resulted from the plaisir and jouissance they enjoy. The elements that make up each participant’s trajectory towards expertise can also be presented as dispositions, as part of what makes up their habitus, as part of what makes up part of being a teenager in youth culture, and part of the assimilation, acceptance, and association with the multiple texts of consumer-media culture.

8.3 Research question three

*In what ways is the teenagers’ cultural and social capital recognized and valued at home and at school?*

In the field in which the participants are positioned, their cultural and social capital is recognized and valued by those who are also in the field, who tend to be their peers. The way they learn indicates a particular type of learner whose learning preferences have evolved to prefer digital engagement to face-to-face learning. The participants were not always aware of when they were learning but some maintained they were learning, regardless of the place, space, or site of learning. The leisure and learning that have occurred happened in the same site, and sometimes there is little distinction between the two. This new way of living, of engagement with digital media, constitutes a new way of living, similar to the developments that have occurred with the use of technologies that revolutionized the domestic chores in a household.

In keeping with Bourdieu, those who look in on the field find it difficult to value the capital in that field as it is not a traditional type of capital that is valued in educational fields. It is possible to argue that in fact the participants’ praxis is misrecognized because it does not constitute the social capital valued widely in society. What needs to be done is to reframe the way this field is viewed in order for the practice to be legitimated.
The teenagers’ capital was recognised by their peers and ‘on the margins’ of schooling by their teachers and parents. However, this recognition had no substantive or sustained impact upon the design or delivery or experience of formal schooling. In this context, there was little recognition of the multiple sites of learning identified and valued by the students (nor any acknowledgement that the worlds of leisure and learning were not mutually exclusive, even though schools themselves position the two terms in opposition) and scarce evidence that non-traditional pedagogies and locations were routinely incorporated into the formal fields of schooling (Goodson et al., 2002). Many of the participants’ teachers did not know about their students’ expertise, and it is impossible to recognize and value expertise if it is unknown. This leaves key issues that are unaddressed which are associated with constructing future oriented learning environments that recognise and value the contemporary skills, experiences, and practices of youth.

In keeping with Cuthell (2002), the children prefer to use home computers for their work and for their leisure. For these children, the distinction between work and play is difficult to recognize when they use their home computers (as they often engage with leisurely activities while doing their work) which is in stark contrast to how schooling structures differ between work and play (Lynch, 2001, 2002). Engagement with technology demonstrates that the use of one’s home computer is a site for both leisure and learning and for digital insiders there is sometimes little distinction between the two. Acts of resistance (some of which were suggested in chapter seven) are needed in order to cater to those who are digital insiders and have learning and praxis preferences pertaining to those of a digital culture.

How could these understandings of technological expertise in non-educational settings influence the delivery of learning and teaching in classrooms? If these participants had access to a computer and an Internet connection for all their schooling hours, not only would a different paradigm be required to include this as a valid site for learning, but also it would be fascinating to view what they could do, learn, and achieve with or without teacher direction but in the setting of the school. What the participants are learning at home is applicable not only to that field, that is, the out of school learning for leisure.
These participants are moving fast and developing new praxis and new fields. They are not going to be left behind. Perhaps it is the people who construct schooling that will get left behind as they are the ones in a state of hysterisis. If schooling is aligned with a print culture, but students are positioned within a digital culture, there is a case to argue that the field of schooling is in a double bind.

This thesis has asked whether schooling needs to be placed solely in schools. Almost all the participants viewed schooling as irrelevant to the development of their expertise (except Chris and Joe) as they became experts without schooling and they have mostly taught themselves. They have not needed teachers. Schooling has had little influence on the development of their technological expertise. Their schooling is mainly positioned in the print culture of previous generations in comparison to the digital world in which the teenagers are positioned. The scope for e-learning within secondary schooling is something that can be explored as challenges can be made to those who privilege face-to-face learning, that is, classrooms of children being instructed by one teacher. This type of practice does not fit with collaborative social learning that focuses on interaction, personal interest, and active engagement - all within cyberspace.

Gender has not limited the development of expertise in the trajectories of the participants. However, there are gendered elements significant in each trajectory. For the participants in this study, it was a matter of time, opportunity, access and capital. Females can be competent computer experts. They are not limited by their gender, or by sociological constructions regarding their gender. The girls in this study use technology in a way that is pleasurable and enjoyable for them.

8.4 Areas for further research
As stated in chapter five, an area for further research is the concept and use of the word ‘geek’ and other similar terms (‘nerd’, ‘net freak’, etc). Some of the questions that remain unanswered include:

- Do females think the word ‘geek’ is a putdown or an apt descriptor of those who are technological experts?
- Is a geek always an expert?
- Is the habitus of technological experts the same as that of geeks?
• Is the social capital a geek has not valued by their peers because they don’t have the ‘right’ kind of dress, demeanour, and dispositions?
• Are these participants different because their social capital is valued?

Therefore it does not matter if they are considered to be a geek?

Another area for further research also suggested in chapter five was the notion of whether ‘asking for help’ is acceptable for males and for females. Or whether it is acceptable depending on the classroom environment, or whether they receive appropriate help when they do ask for it, or whether they have a preference to ‘figure it out’ for themselves, so therefore they do not ask for help.

I am also interested in exploring the following ideas: the effect of new learning spaces on the traditional delivery of learning and teaching in classrooms, the implications of advantage and power associated with technological efficacy and consolidating sociological definitions of technological expertise.

8.5 Concluding comment

The participants, or social agents, in this field of out-of-school leisure have appropriated the goods and values (the economic and cultural capital of their families) to develop their expertise. Their dispositions reflect digital insiders’ habitus and the embracement of practical activities associated with these new practices. In the lives of these participants, the objectivity of the first order and second order is evident in the distribution of material resources and systems of classification (Wacquant, 1992).

The practice of these participants suggest that a new type of learner has developed (or a new habitus has been established in the lives of digital insiders) – one who prefers digital media and is positioned within digital culture and no longer has his or her needs met by face-to-face teaching, nor by the use of print media. This thesis does not suggest that the ‘old’ ways of learning should be done away with in agreement with Brabazon (2002) but it does suggest that blended learning (Rossett, Douglis & Frazeen, 2003) approaches need to be incorporated with a voracious enthusiasm because of the inherent need for learning technologies to become part of everyday practice within schooling. Indeed, Kimber and Wyatt-Smith (2006)
presented a case for how students-as-designers can use and create knowledge.

This thesis agrees with what Downes (2002a, 2002b) claimed: those children whom I termed ‘digital insiders’ have different orientations to and preferences for learning because of their saturation with technologies since birth. Therefore the same teaching and learning strategies that were used fifty years ago in classrooms are distinctly out of place with the new habitus of these children. Specifically, I am referring to the compartmentalization of subjects, the teacher as the director of learning, the timetables that schedule these subjects and the hierarchisation of schooling (Goodson et al., 2002). Though not every child will be motivated to learn through using digital technologies, it appears that many of the children who are digital insiders have preferences to learn in this way because of the prevalence of technologies within society.

This thesis has taken the position that there is an increasingly urgent need for change in curricula and schooling praxis because almost all of the participants gained their expertise with minimal input from their schooling. This thesis has argued that schooling does not teach how one becomes an expert and it does not teach how the process of expertise is achieved.

I conclude with some comments from Bourdieu which reiterate the subjectivity of ‘gazing’ at the participants.

One would be falling into a form of the scholastic illusion of the omnipotence of thought if one were to believe it possible to take an absolute point of view on one’s own point of view (Bourdieu, 2000, p. 119).

There is nothing sacred except to the sense of the sacred, but this sense encounters the sacred as a full transcendence, and the illusio is an illusion or ‘diversion’ only for someone who perceives the game from the outside, from the scholastic standpoint of an ‘impartial spectator’ (Bourdieu, 2000, p. 151).
9.0 References


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