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Abstract

Utilising Pierre Bourdieu's formula for studying social practice, this study explored the construction of technological expertise amongst a heterogenous group of New Zealand teenagers. The qualitative study employed observations and interviews with five boys and three girls aged 13 – 17, who considered themselves to be technological experts; their peers and/or their family also considered them to be technological experts. For seven of the eight participants, their primary site of leisure was their home computer use. This article gives some examples about how the participants' understand schooling and its relevance to them. It engages with ideas concerning the performance of school, and argues that the participants' practice in this field of home computer use for leisure tends to be misrecognised. The article concludes by discussing the implications this misrecognition has for the structures of formal schooling.

Introduction

This article will demonstrate how Bourdieu's idea of misrecognition (Bourdieu, 2000) is evident, specifically regarding how the teenagers in this study understand schooling, and how these teenagers believe it linked or did not link to the learning that occurs in the field of home computer use for leisure. This article firstly outlines the theoretical framework employed and explains specific terms relating to Bourdieu's formula for studying social practice, then moves on to introducing the participants. Some examples are given about how the participants understand schooling and its relevance to them. This is followed by explanation of an argument that participants' praxis is misrecognised, and what this might mean for formal schooling.

Theoretical Framework

It is important to begin with an introduction to the key concepts of Bourdieu that shaped the design and analysis of this research project. Pierre Bourdieu's formula for studying social practice was written as "[(habitus) (capital)] + field = practice" (Bourdieu, 1984, p. 101). I will now briefly explain these three aspects that constitute Bourdieu's construction of social practice, as well as the notion of *misrecognition*.

Habitus is a concept used to explain a system of 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. It reveals the evidence of its origins in practice (Nash, 1999). 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 (2004) stated that habitus generates and shapes perceptions and actions. I define habitus as the 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).

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 symbolising sites of cultural practice (Webb, Schirato, & Danaher, 2002). The study focused on the field of home computer use for leisure of teenage experts, which includes the cultural practices found around the expert use of technology in non-school settings. In previous publications (Johnson, 2007a, 2007b), I defined this field of home computer use for leisure and explained the activities that I observed with this particular group of teenagers positioned in that field.

The term *capital* has many meanings within Bourdieu's framework. Bourdieu uses economic capital as the foundation for writing about and developing the forms of other capitals, that is, cultural, social, and symbolic. Bourdieu (1986) described three types of capital in the following way:

> 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)

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.

"Misrecognition" has been defined by Skeggs as occurring when "symbolic capital has been acquired by a successful act of legitimation which itself veils the social processes and structures that are necessary to existence" (2004, p. 23). It occurs when something has not been validated, and is often linked with Bourdieu's notion of symbolic violence (Bourdieu, 1990).

Introducing the Participants

Participants were selected using snowball sampling (Patton, 2002), a strategy that relies on persons to recommend others who fit certain criteria, and who were beyond the range of people I knew personally. As it was not an aim to make generalisable or representative claims about all teenagers, it was fitting that this study used purposeful sampling (Patton, 2002), where information-rich cases were selected for in-depth study. All of the participants lived in a provincial city in New Zealand of approximately 100,000 people.

Name	Anne	Charli	Lisa	Chris	Jake	Joe	Tom	Tim
Sex	F	F	F	M	M	M	M	M
Age	14–15	13–14	15–16	13	16–17	14	16–17	16
Location of computer	Kids' wing	Hall	Lounge	Dining room	Kids' wing	Dining room	Bedroom	Bedroom
Type of internet access	Broadband wireless	Dial-up	Dial-up	Dial-up	Broadband	Dial-up	Broadband	Broadband
Year	10	10	11	9	12	10	12	12
Type of school	Public girls years 9–13	Public co-ed years 7–13	Public co-ed years 7–13	Public co-ed years 9–13	Public co-ed years 9–13	Public co-ed years 9–13	Public co-ed years 9–13	Public co-ed years 9–13

Table 1: Summary of Participants

Semi-structured interviews and observations were employed in order to collect the data. The data were collected over a period of four months in 2005. Interviews and observations were conducted mostly in the participants' homes. Approximately three to four hours was spent with each participant interviewing them on two occasions and observing their "normal" practice of using their home computer. Informed consent was obtained from both the participants and their parents, and pseudonyms are used to protect identification. The content of the qualitative data collected was analysed according to the key themes raised within Bourdieu's theory of practice, that is including, but not (only) limited to, habitus, field, and capital.

Table 1 summarises some of the demographics of the eight participants in this study.

Each of the five boys attended the same co-educational secondary school. Two of the girls attended the same secondary school (different to that of the boys), while the third girl attended a public girls secondary school. Participants were not selected on the basis of the school they attended. Table 2 lists the subjects that each student was enrolled in at their secondary school.

Name	Subjects in 2005
Anne	English, Science, Mathematics, Social Studies, German, Enterprise, Drama
Charli	French, Food Technology, Mathematics, English, Health, Science, Social Studies
Lisa	Geography, Mathematics, English, Recreation, Sports Science, Human Biology
Chris	Dance and Drama, Japanese, Computers, Graphics, Mathematics, English, Science, Social Studies
Jake	Geography, English, Drama
Joe	Graphics and Computers, Science, English, Mathematics, Geography, History
Tom	Design, Graphics, Mathematics, English, Business Administration Computing, Computers
Tim	Mathematics, English, Physics, Geography, Business, Computers

Table 2: Subjects Enrolled in 2005

The eight participants in this study claimed they mostly gained their technological expertise through being self-taught, and learning from peers and from others who were online. They had developed relationships with those who knew more than them or had spent a lot of time experimenting with their home computers in order to learn more and claim a level of expertise. One of the criteria for selection in this study was for the participants to consider themselves as a technological expert. Each of the participants considered themselves to be either a "good expert" or a "great expert" (Johnson, 2007b). In my informal discussions and formal interviews with the participants, they each claimed that their families and their peers thought they were an expert. It was not a purpose of the study to determine their level of expertise or whether they were an expert. I sought to interview and observe those who believed

they were experts and explore their trajectory toward expertise. What is important to remember is that this article focuses on what the *participants* say about their beliefs, and also what they say about their teachers' beliefs. I did not interview parents about their beliefs, nor did I interview the participants' family, peers, or teachers.

The performance of their expertise was displayed in various ways, both online and offline, including website design, research of their personal interests, configuring the preferences on their computer and displaying high levels of skill in games. For all of the participants, the online access to their peers and those whom they could learn from was an important part of their social interactions and their trajectory toward expertise (Johnson, 2007b).

For seven of the eight participants, their home computer use was their primary form of leisure. It seemed that Anne's participation in sports was her most preferred form of leisure. In this field of home computer use for leisure, cultural capital, learning and pleasure are perpetuated (Johnson, 2007b). The technological expertise they claimed to have developed in this field of home computer use for leisure gave them cultural and social capital in this field. In a recent monograph (Johnson, 2009), I describe the states of cultural capital and the economic and social capital evident in the lives of the participants.

I asked each of the participants what they thought they were learning while they used their computer and were on the Internet. They replied "by figuring it out myself", asking or watching someone, using the Internet to research, using software help menus and utilising online and offline tutorials. The following sub-section highlights how six of eight the participants understood schooling and its relevance to them, and how in some instances it was separate from learning and their home computer use.

The Performance of School

An interesting performance of schooling occurred in Jake's life. Jake was the network administrator for his secondary school and was responsible for 140-networked computers. Jake also did 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 worked for another large, local concert venue once or twice a month and learnt a lot from the employees of that venue. He did video work, including the "editing and running" of videos. Jake was extremely busy, saying "yes" to all requests for his expertise. His technical knowledge gave him a sense of value. 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 had little or no experience with computers.

For Jake – arguably unlike the other participants – schooling was an outlet for his interests. He had 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 was able to apply what he had learnt at school in out-of-school life. From this learning and these experiences, he was focused on making a career as a sound and lighting technician. Jake made the most of opportunities that passed his way and learnt much from watching other people make mistakes. He had often been "Johnny-on-the-spot" who had benefited from being in the right place at the right time to gain experience and in-depth knowledge about technological systems. Jake's expertise included knowing how to fix things or make them work just well enough in order to get through a show, until they could be replaced with the items proper. He could be called a problem-solver and a "Mr. Fix-It Man". This disposition was crucial to all his areas of expertise, as he needed to be able to determine what was wrong, why it was not working, and try various techniques to fix 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".

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. This enabled him to provide help to teachers who used the computer laboratory.

According to Jake, his Principal was realistic that Jake was not going to end up being top of the school, take six subjects, and go on to university.

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". 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".

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 recognise 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". His primary school experiences were in sharp contrast to his initial experiences at high school:

Researcher (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.

With regard to the lack of skill recognition and the lack of stimulus for younger high school students:

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?

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.

Out of the subjects that Tom took, he said, "Design and Computers is probably the most relevant, maybe a bit of Maths". 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.

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". Tom said, "It doesn't affect it at all. Just school's boring and it's school [laughs]". 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 [play truant] or anything, so it's allright, 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].

The following sub-section offers some examples given by the participants about their teachers' notions of expertise, or their failure to recognise their expertise.

Teachers' Notions of Expertise

Anne shared an anecdote about an experience she had with a teacher the previous year:

> "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".

Anne stated that other teachers in her current school had not known about her two years of previous experience (Years 7 and 8 at intermediate school) of being in a classroom where each child had his or her own laptop computer. She believed her computer skill level had dropped since beginning secondary school.

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".

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.

It is probably not realistic to expect secondary teachers to know of every student'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.

Theorising the data using Bourdieuian concepts

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' comment on scholastic culture was that it "is an artificial acquisition presenting itself as absolutely valid" (1998, p. 40). 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 the participants' technological interests further exacerbate the divide between the relevance and reality of school to their daily lives and future existence.

The praxis evident with the participants not only suggests but 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, Knobel, Lankshear, & Mangan, 2002). Teachers may question what actual power they have to possibly change dominant structures, especially if the structures constrain the teachers' agency. 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 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. (2004, p. 81)

As fields are ever changing (Grenfell, 2006), so has the field of schooling. As the habitus closely interconnects with the field, the habitus confronts the field, but a hysterisis – where the habitus of the agent understands the current world to be the past world; the habitus is trapped in time – on the part of those who continue to

construct schooling is arguable, because it is not positive for teachers, school administrators, curriculum designers, and so on, to identify their own misrecognitions. Grenfell stated, "It is not in the interest of those who benefit from keeping these processes and products occluded to acknowledge them" (2004, p. 194), while Brabazon claimed, "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" (2002, p. 188). To me, this notion brings up numerous implications regarding the provision of information and computing (ICT) resources, namely access to working, networked computers and high-speed internet, and suggests pedagogy aligned with a constructivist, facilitative approach, which may be in disparity to everyday, tangible practice.

Unless adults themselves are engaged in the field of home computer use in similar ways to the participants in the study, they will continue to misrecognise and perhaps not accept the praxis within this field. Bourdieu (2000) spoke of co-option, which is evident within relations between teenagers, but may need to be deliberately utilised to introduce adults to the field, to therefore assume the habitus particular to the field.

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 called this conflict between field and habitus a sort of "social schizophrenia" (2004, 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.

Conclusion

The participants were able to choose what they learned and when they learned. They viewed the medium in which they did it as a form of leisure. They were also able to choose who and what they learned from – not just what has been set up as exclusive and privileged. They were able to both 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 were in fact designing and engaging in their own learning.

The teenage experts did not gain a significant amount of learning in the area of computing from formal education and traditional schooling; they claimed to have mostly gained their technological expertise by independent means. Some of the participants' expertise was recognised as helpful within a school context and in Jake's case, alternative trajectories to "school expertise" were created for these recognitions; others were disenchanted with schooling and how it could connect to what they were interested in, admittedly in diverse ways from each other (Chris, Anne, Lisa); some viewed schooling and conventional ways of learning as being a natural part of their careers (Joe, Chris). But what is significant is that these participants accomplished (in their own eyes) a level of expertise that schooling had not been chiefly responsible for. Indeed, all of the participants alleged that schooling had had little influence in their trajectory toward expertise.

In Western society, many young people seem to have a limited connection with their schooling and associated experiences. Students know they should do well in school, yet school seems to be located in former fields similar to that of a print culture (McLuhan & Fiore, 1967), or print-based literacy (Lankshear & Snyder, 2000). It is possible that the participants' habitus and the fields they position themselves in – that of a digital culture (Levinson, 1999; Lynch, 2002) – have changed. Some students acknowledge the dissimilarity between the liberty of home computer use and the restraints of school computer use (Selwyn, 2006), but others continue to be alienated from schooling (Gee, 2003, 2004; Green & Bigum, 1993; Kenway & Bullen, 2001). It is somewhat likely that the learning that is happening in schools is a long way in character 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 these participants, interaction and learning within cyberspace is a favoured reality, rather than schooling, which seems somewhat of an irrelevant reality.

It is understandable that teachers, school administrators and curriculum designers do not wish to change arrangements or challenge structures that provide employment and financial security (see Grenfell, 2004). It has been suggested that teachers may

wish to delegitimate students' capabilities with digital technologies, because of an association with the destabilization or subversion of their control (King & O'Brien, 2002). However, if new learning spaces create expertise that does not necessitate traditional, formal schooling, and if teenagers challenge dominant beliefs that constitute good learning through ways of choosing how, when and where they would rather learn, there are many implications for the role of traditional schooling, formal learning and the conventional role of the teacher.

Acknowledgement

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