The Teenage Expertise Network (TEN): An Online Ethnographic Approach

Nicola F. Johnson and Nicoli Barnes

Faculty of Education, Monash University, Churchill, Australia
Faculty of Education, University of Wollongong, Wollongong, Australia

Correspondence: Nicola F. Johnson, Faculty of Education, Monash University, Northways Road, Churchill, 3842, VIC, Australia, Ph: +61(0)3 5122 6366. Email:

(Received TBA; final version received TBA)

The take-up of digital technology by young people is a well-known phenomenon and has been subject to socio-cultural analysis in areas such as youth studies and cultural studies. The Teenage Expertise Network (TEN) research project investigates how teenagers develop technological expertise in techno-cultural contexts via the use of a purposefully designed, youth-friendly, online environment – significant in this current age of Internet-mediated learning and rapid technological development. The design of TEN follows principles of ethnographic research adapted to an online environment. This article discusses the design, objectives and outworkings of this new media object, highlighting the tensions associated with conducting online research. This article considers why and how we should reengineer online methodologies and the complexities associated therein. It discusses the classification of this method considering the literature surrounding online data collection methods and virtual ethnography.

Keywords: Teenagers, expertise, technology, ethnographic, online, methodology

Short biographical notes on all contributors
NICOLA F. JOHNSON is a senior lecturer in teacher education at Monash University. She recently published a book entitled, *'The Multiplicities of Internet Addiction: The Misrecognition of Leisure and Learning'* (Ashgate, 2009). Her research interests surround sociological understandings of informal learning and technological expertise.

NICOLI BARNES is a PhD candidate in the Faculty of Education at the University of Wollongong and a secondary teacher. Her research is focused on the sociological aspects of young peoples re-connections with education. Other research interests include critical sociology and in particular Foucault and the application of ethnographic techniques to research. Email: nici@uow.edu.au

Introduction

In this paper we present an overview of the Teenage Expertise Network (TEN), an online research project designed to investigate the processes through which young people develop technological expertise. This article contributes to the discussion surrounding methodological developments responding to a growing need at the edge of Internet-mediated fieldwork. The purpose of the article is to discuss the ethical and methodological challenges and outworkings of designing an online environment based on principles of ethnography.

Aims and background

The aims of this research project were to 1) design, develop and test an interactive, online, discussion environment that would appeal to and engage teenage technological experts; 2) test the method of conducting online ethnographic research; and 3) use sociological perspectives to investigate how technological expertise is obtained, performed and understood by teenage technological experts. The background to this project was to replicate, yet build on a previous study conducted in homes that sought to understand and explain young people's use of technology (Johnson 2007a). We also wanted to refine the questions utilised in the first study and test the online methodology.

This article focuses on discussing the first two aims of the project. Other articles have discussed the construction of 'expertise' and how it is performed which address the third aim) (see Johnson 2007b, 2009). These articles demonstrate that understandings of technological expertise are multiple and include different levels (Johnson 2007b, 2009), and that there is no particular essence about the experts in their performance of expertise (Johnson 2007b). Fluidity of knowledge (Johnson 2009) and maintenance of expertise

(Johnson 2007a, 2007b, 2009) was an important source of capital (Bourdieu 1986) for these young people, especially due to the increasingly accelerating rate of technological development.

TEN investigated the acquisition of teenage technological expertise by an innovative means of collecting data through an original web environment created by drawing on ethnographic principles in its initial design. It is significant because, while there have been many previous online studies conducted, 1) TEN uses an in-house, non-commercial, purposely-built web design and 2) focuses on young people. Additionally, no other online studies specifically focus on young people's technological expertise. Targeting young people aged 13 – 17, we created a virtual environment in a secure, closed space in which we could collect data and observe interactions. TEN was designed to collect data and be appealing for young people to be involved. A small focus group was consulted before the initial design took place. This group consisted of three females and four males aged between 14 and 18 years. They provided advice about the construction of the site and highlighted features they thought would be popular including having a privacy option, being able to modify the profile page, and having a space where participants can ask questions about how to do 'stuff' [participants' words].

The design of the project followed principles of ethnographic research adapted to an online environment, that is, reflexivity (Hammersley and Atkinson 2007) naturalism (Genzuk 1999, Hammersley and Atkinson 2007), understanding, and discovery (Genzuk 1999). In taking up the challenge to engage in ethnographic methodology in an online environment, we also engaged with the emerging Foucauldian scholarship drawing on ethnography (Tamboukou and Ball 2003). Referring to the bringing together of

Foucauldian genealogy and ethnography, Tamboukou and Ball (2003) argue for the potential for ethnography to be harnessed for projects which depart from modernist emphasis. Indeed, as they cite Ball (1994), "ethnography is in turn a way of engaging with and developing divergent interpretations/accounts of the real" (cited in Tamboukou and Ball 2003, 5). Following this cue, in this project, we sought to collect data in an analogous way to place based ethnography. We conceived of the project as moving through two stages. In the first stage we aimed to develop and trial a new media object (Manovich 2001), that is, a web object[1] designed for online ethnography with teenage technological experts. In the second stage this website/database will be enhanced with provision for online adaptation by the teenage experts. As such, a principal aim for the first stage of the project was to test the website design in terms of data collection, participant and researcher access (Hammersley and Atkinson 2007) and participant engagement.

In seeking to apply ethnography to an 'online' environment, we propose that when faced with new environments and the interactions that can occur within these, it is necessary to consider the possibility of reorienting established methodological orthodoxies. At the same time, however, it needs to be acknowledged that forays into experimentation with established qualitative methods can be problematic unless methodological (and ethical) issues are addressed. In this article our intent is to outline how we formulated a response to these methodological issues where they related

[1] Web object refers to the implementation environment, that is, the website was created as a Java Application utilizing Apple's enterprise strength WebObjects frameworks (http://www.apple.com/webobjects/). It used an Openbase database (http://www.openbase.com) at its backend and was developed under the xCode IDE (http://developer.apple.com/tools/xcode/). The final site was deployed on an OS X Server, through the built in WebObjects Application server environment.

specifically to TEN, in particular, what is available in the literature concerning online ethnographies. We then present the project rationale and the impetus for the development and design of the TEN online environment. Results from testing this online method are then explained, followed by an explanation of further improvements needed for additional iterations. This leads us to consideration of the classification of this approach in terms of where it might contribute to the developing work on online qualitative methodology. What this article does *not* claim to do is to explain technological expertise, or claim the generalisability of the findings according to the small number of participants. Our focuses for this article include the process of the undertaken methodology, the ethical issues involved, and the classification of the methodology, especially as it utilises an approach that seeks to reflect the everyday usage of many young people and the techno-cultural context in which they are positioned.

Reengineered 'online' methodologies

Methodologically speaking, the processes used in 'online' (or 'virtual' or 'digital' or 'Internet' or 'cyber' – there is a great range of terminology applied) ethnographies appear to be conducted within two discrete areas, that of online ethnographies involving the use of either 1), asynchronous research and a variety of purely text based communication strategies; or 2), synchronous research including the continually evolving and improving virtual reality realm which now combines text with increasingly complex graphical formats. The TEN online environment drew on a combination of both asynchronous research; in the form of surveys, open ended questions and a discussion forum; and the synchronous format of instant chat. Other synchronous and asynchronous formats are being investigated for future versions of TEN. While these have become key modes of

instigation, there are many issues which apply to the application of both these strategies within a research context. Within the scope of TEN, there were a number of specific methodological issues which needed to be addressed. Whether TEN could really be considered a social space that ethnographic methodologies could be applied to, was primary amongst these issues. However, once the veracity of reengineered methodologies is accepted then other questions cluster around the ethical application of online methodologies - unique to an online setting, and, in turn, to TEN. These issues clustered around such aspects as privacy and confidentiality; the problem of being able to trust the truthfulness of information given online, particularly in both gaining consent and in the 'realness' of online responses were also a concern, and the voyeuristic notion of 'lurking'. These concerns can be addressed through two questions. First, should we use traditional ethnographic methodologies online? If so, how can we use online ethnographic methodologies to ensure methodological rigour?

Should we use traditional ethnographic methodologies online?

As stated above, the overriding matter from the literature concerns the clear question of whether online research can, or should, appropriate traditional or offline ethnographic techniques in what is labelled 'crossover' or 'reengineered' methodologies (Cocciolo 2007; Leander and McKim 2003; Stewart and Williams 2005; Williams 2007). This appears to be becoming a less inhibiting factor as more and more researchers take advantage of online features for research and contribute greater depth to methodological understandings. In fact, after 20 years of discussions concerning similar issues we still appear to be playing 'theoretical' catch up with the speed of change associated with

online settings. But in continuing to play the game of catch up we may also be depriving ourselves of a valuable ethnographic environment[2].

There are two significant arguments raised in objection to the use of reengineered ethnographic methodologies. The first relates to the debate as to whether an online environment can be considered a social space. Views on this progress from an outright 'no', to online environments being considered as tools only, to cyberspace being seen as a meeting place where new 'ways of being' are possible.

Williams (2007) cites research opposing the use of virtual spaces for research, which argues that social immersion, realism, shared space, presence, physicality, and face-to-face communication is lost in digital formats and that this can have a negative effect on community cohesion. However, Carter (2005) sees the elimination of immediate presence in particular spaces as an advantage as it removes the preconceived ideas (often in the form of negative judgements) that visual cues deliver in offline situations, thus allowing great freedom online. Others argue that technology becomes a 'way of being' through the text used (stylized writing and emoticons, recognition of people via their idiosyncrasies, forming textual personalities, online pseudonyms). Williams (2007), for example, argues that this 'messy text' extends beyond the spoken, where imagination is engaged and a sense of presence developed.

Many researchers such as Travers (2009) and Stewart and Williams (2005) support the notion that online environments are established cultural contexts as people choose to use it socially. These researchers are seeing virtual communities as a cultural space and a cultural artefact (Williams 2007), which are defined by a "shift to fields of relations rather than bounded physical sites" (Leander and McKim 2003, 214). They

[2] Ward was suggesting many of these arguments from her work in the mid 1990's (see Ward 1999).

become “a social world … supported by Internet technologies” (Carter 2005, 153) where, like ‘real’ world spaces, codes for specific places and social behaviours are created. In fact ten years earlier, Ward (1999) had suggested that, instead of the dichotomous relationship of an offline and online world, we should consider the relationship a hybrid of the two “that is neither physical or virtual, but a combination of the two” (1999, 2). She suggests then cyber-ethnography is central to releasing us from notions of this dichotomy. Leander and McKim (2003) support this argument and believe most participants never distinguish between online and offline spaces but see being online as an extension of their offline life. This suggests some academics have created an artificial division (West, Lewis and Currie 2009).

When notions of technological spaces becoming cultural spaces are applied that are “mediated through experience rather than through technology” (Carter 2005, 154), then digital ethnographies become a ‘must’ in order to adequately address research in contemporary society (Garcia et al 2009; Leander and McKim 2003). This is particularly so when conducting research with young people, who have become known as “digital natives” (Prensky 2001, 1) - a contestable notion but one which further indicates the techno-cultural and social importance of using online ethnography (see Hammersley and Atkinson 2007). The notion that online environments are not social spaces seems to deny a vast range of evidence to the contrary. In considering this discussion, the TEN researchers established TEN with an understanding closely aligned to that of Ward (1999), that is, that online spaces are indeed a social hybrid of online and offline worlds and that they provide a range of advantages for the exploration of social interactions unavailable in traditional ethnographic studies. In particular, as the study was focused on

both the interactions of young people and on young people's technological expertise, an online ethnography not only seemed appropriate but important.

The second objection surrounding the use of reengineered ethnographies concerns the ability of online environments to allow the creation of meaning. In more general discussions, the argument that innovation in research will lead to superficial, shallow, thin research and the avoidance of long standing methodological and epistemological problems. Williams (2007) and Fox, Morris and Rumsey (2007) share their doubt that a researcher can be truly representative through an ethnographic account as they construct their own 'reality' of social settings. To address this argument, Travers (2009) suggests Internet use of ethnographies might well encourage fresh epistemological thinking but claims this has always been done. He argues that in relation to existing traditions, Internet ethnographies need to be considered in relation to existing traditions which in most respects show very little difference to a traditional ethnography. Travers proposes reading websites, monitoring participation in discussion groups and online interviews can be equated to the ethnographic techniques of reading documents and fieldwork in multiple settings. Garcia et al (2009) also suggest that to overcome these matters, combinations of both online and offline strategies are successful. Others claim this can be overcome by researchers' methodological reflexivity in offline settings (Fox, Morris and Rumsey 2007; Williams 2007). Ward (1999) extends this notion of reflexivity, arguing that reflexivity, or the freedom of responsiveness afforded by online settings is a valuable aspect of online ethnographies beyond the reflexiveness of researchers offline. She suggests this reflexivity not only enhances marginalised perspectives but does so by providing an alternative format for communication where,

> expectations and traditional definitions of the situation are dropped, as the researcher often has very little control over the situation. Participants remain unknown to the researcher, and this adds to the balancing of power between the researcher and researched….. [Participants] are therefore in a stronger position to ask questions and challenge the assumptions of the researcher. It is this potential that the participants have for challenging, that makes the research process reflexive." (Ward 1999, 5)

She adds it is the ability of the online environment to be "malleable" (5) to allow for participants' constant revision of their entries and the researcher the ability to research and respond to these. She claims, "Rather than a hindrance in the research process, this malleability and re-visiting websites adds to the beauty and reflexivity of the cyber-ethnographic process" (Ward 1999, 5).

For TEN, it is the textual features of the site which hold significance in constructing meaning. The project moved beyond traditional data collection techniques of interviews and observations to create an online form of fieldwork whereby participants could create, build on, and interact with others in an online, digital environment via text. Stewart and Williams (2005) suggest concerns in this area arise because non-verbal cues restrict meaning making, but can be overcome by determining three comparable characteristics. First, technological forms are comparable to contexts, generating shared understandings. The second suggests that textual styles are the equivalent to non-verbal cues providing richer meaning. Finally, textual content can be considered the equivalent to verbal elements of speech. These differences continue to diminish with the use of digital technologies which allow such characteristics as 'proximal' and 'kinesical' features (Williams 2007) to include the avatar gaze (gesturing, facial expression included with the textual 'talk'), combined with text (known as emote) (Cocciolo 2007), netiquette (which also allows a great deal of expression via text) and visual explorations of landscapes (Williams 2007) which are important in adding meaning. Although TEN did not utilise graphics, emotes and netiquette were consistently present, for example, the use

of smiley faces to express pleasure, and the use of asterisks and exclamation marks to convey important points. We are not seeking to establish textual meaning as reality. This poststructural, ontological stance informs our understanding of meaning in how we report the textual content provided within TEN.

How can online ethnographic methodologies be used to ensure methodological rigour?

Both advantages and limitations with employing online ethnographies have been detailed in numerous studies (Lefever, Dal and Matthiasdottir 2006; Carter 2004, 2005; Topp and Pawloski 2002; Wood, Griffiths and Eatough 2004), and often revolve around ethical considerations (Brownlow and O'Dell 2002). Addressing the limitations and making full use of the advantages helps to ensure and increase methodological rigour within TEN. The primary issues to consider included ethical considerations of privacy, confidentiality, anonymity and identity; the dichotomy of offline and online spaces; the trustworthiness and authenticity of data; the notion of 'lurking' concerning the presence of the researcher; and the development of researcher skills for a new setting. These are now discussed below respectively.

Privacy, confidentiality, anonymity, and identity

Online research environments pose unique ethical risks, concerning online identity, particularly in terms of graphics and text (Carter 2005; Williams 2007). However Fox, Morris and Rumsey (2009, 541) suggest, "Consensus seems to be that many of the ethical questions posed by the rapidly developing virtual environment can be resolved by examining reactions to past research and by refining the definitions of concepts used in ethical discussions." Garcia et al (2009) add that ethnographers must learn to apply principles for human protection in different ways to those of offline contexts. Informed

consent must be given and this is hard to attain given the “lack of visual clues” (Carter 2005, 153) available online to determine factors such as age. However, as all the participants in TEN were young people, the process for gaining consent for TEN participation involved participants emailing, posting or faxing their signed consent form (by both them and their parent/guardian) before they were authorized to participate in the project.

Matters arise around gaining informed parental and participant consent via email as identity cannot be guaranteed and the process can become onerous once downloading and mailing are involved (Fox, Morris and Rumsey 2009). Ascertaining that a person is who they say they are, is raised as a concern by Garcia et al (2009). Verifying identity can be difficult as some sites and individuals are very open, whereas others are based on anonymity. However, overcoming questions of identity can be done by such actions as meeting participants prior to research.

For this project, once the registration page was completed and submitted, the administrator (first author) received a notification email. She then emailed the informed consent (participant and parental) and participant information sheets to the interested participant, who then either emailed, mailed, or posted back the appropriate forms. The consent form included the following statement, ‘I understand that I will be involved in participating in TEN through answering survey questions, compiling a profile of myself, posting within the discussion forums, and engaging with other TEN users through instant chat.’ While a couple of participants were emailed reminders, most completed the survey within a week. The establishment of identity was supported by the requirement of a signature and statement of name from a parent or guardian. Within their profile pages, the

participants usually showcased a uniform resource locater (url) of their work, which enabled the administrator to check their identity.

The application of these ethical considerations for TEN resulted in five of the six participants using an online pseudonym. Only one introduced himself in his profile page with his real first name as well as his pseudonym, however this was removed for the subsequent research publications. Two additional persons sent the lead researcher their consent form but did not utilize the site. Of the ten people that registered with TEN, only one was female and she did not provide the consent form nor answer the survey questions. One answered a few of the questions but did not send the lead researcher a consent form, so he was advised as soon as possible to not continue, and consequently his answers are not included in the results.

Due to the ubiquitous coverage of the Internet, international Internet privacy laws must be addressed along side the ethical considerations of ethnographic research (Carter 2005). However, TEN was anonymous, private, and only accessible to those who had been authenticated for access so this was not necessary. The enclosed nature of the environment addressed not only participant privacy, but also issues of confidentiality and anonymity as the 'outside world' was excluded from viewing the site and therefore accessing details such as email addresses. This also addresses Carter's (2005, 153) concern that "anonymity does not equal absence of identity", as often online pseudonyms are more easily identified in online searches than are real names. Of interest to note, none of the participants chose to upload a photo within their profile.

In this project participants were subjected to little to no coercion as they could express interest in being involved in the project, login to TEN, peruse the survey

questions, then decline to go any further by not sending the researchers the consent form, or not answering the questions. They had to agree to the Code of Conduct (available and agreed to on the online registration page) when registering their interest in being involved in TEN. The Code of Conduct specified unacceptable behaviour regarding account names, nicknames, profile content, comments, chat and forum activity, and private messages. The rationale for the employment of an online environment likely to be of particular interest to teenage technological experts was one way to encourage participation in research (Wood, Griffiths and Eatough 2004), without any coercion.

Online and offline boundaries

Williams (2007) claims online settings raise unique questions concerning: boundaries in online settings, which also need to be addressed. He states that while offline life usually remains unobserved, it can be accessed via online focus groups, diaries, interviews, etc.

For TEN, transitioning between online and offline spaces is less marked than one might assume, supporting the idea of a hybrid space. It appeared that for the participants, the online is 'real' and 'commonplace' rather than the exception or something special (Leander and McKim 2003). However, this is in contrast to Travers (2009, 172) who warns, "There is also the problem that the novelty and interest of the new technology prevents us from recognizing its limitations in addressing meaning (the traditional objective of qualitative enquiry)". It seems that researching online environments is important because it is an everyday, familiar occurrence for many people, which may require researchers to adjust the methodological strategies they employ (Fox, Morris and Rumsey 2007). This arguably constitutes the outworking of the 'naturalism' ethnographic principle (Genzuk 1999; Hammersley and Atkinson 2007). Upon reflection, it is evident

that current techno-cultural contexts have rapidly continued to change and develop. The research grant application for this project was written in 2007, and there may be alternative (low-cost) possibilities with completing online data collection from the online networks the participants are already using. This may make the use of a purpose-built environment redundant. However, in 2008 when TEN was built and the research was conducted, this was not considered as a feasible option.

Trustworthiness and authenticity of data

Lying online is identified as common. However, research suggests people offline lie just as convincingly and that online this 'misrepresentation' can in fact free people to be more open about other aspects of themselves (Garcia et al 2009; Leander and McKim 2003). Leander and McKim (2003, 216) suggest one way to tackle this issue is to see identity as "negotiated and sustained by the situation rather than as a fixed identity attached to a fixed body". Carter's work (2004, 2005) also addresses this fear in her research exploring online relationships. She suggests 'truths' established online can be trusted offline, as her experience in meeting online 'friends' in offline spaces has indicated. She also noted relationship patterns were comparable between face-to-face and online interactions. She argues that online relationships argues that relationships established over time increase in reliability as intimacy and trust are able to develop in the same way they do in offline circumstances.

'Lurkers' may also impact on data. In asynchronous settings, 'lurkers' exist but are not seen (Stewart and Williams 2005). Lurking involves never asking for permission and is linked to covert observation. Lurkers read but do not post (Leander and McKim 2003). Williams (2007) and Murthy (2008) both agree that ethically this should never

happen in online research even though it may be considered legal, it may also be termed as voyeurism: “We must consider the act of lurking and its implications; on those being investigated” (cited in Murthy, 2008, 840). Whether or not ethical, covert, online research can exist is not discussed.

Another area of concern for the researcher is the impact of ‘the silent’ on data and in analysis, however, while lurkers may be present online they “are not present in any meaningful way” (Leander and McKim 2003, 216). However, the impact of this may be quite significant in one of two ways. Internet users may modify their online responses as a result of a knowledge of ‘the silent’ being present online, resulting in them being less forthcoming. In online settings, ethnographers are physically invisible, and can be covert if they are taking on an avatar. Murthy (2008) and Leander and McKim (2003) believe that this is not as neutral a position as many researchers propose, but a position of power. Murthy explains that this is because being online is the equivalent to being in a fieldwork setting. This then also has implications for the observer. It means that the researcher has not overcome power relations as the researcher still brings their ‘gaze’ with them to online research even though they may take on a more passive role online than offline. As previously discussed, Ward (1999) disagrees, arguing that the reflexive nature of online settings actually transfer power more readily to the participant when the visual presence of the researcher is removed. However, the literature seems to place emphasis on another area of concern, that is, with the notion of ‘disinhibitation’. Disinhibitation addresses the idea that many Internet users do not recognise ‘the silent’ and in fact respond far less carefully when they are online than when speaking offline.

Williams (2007) identifies the online space as disinhibiting, which is of particular concern where covert techniques, such as 'lurking', are used for data collection. Disinhibitation occurs when the limited social cues of virtual spaces create a sense of perceived anonymity, privacy and intimacy, and distortions of time and space (Stewart and Williams 2005; Williams 2007). This raises ethical concerns around spying on private conversations and invasion of privacy, brought into play through private conversations taking place in a public space. However while this sense of anonymity does exist, or what Murthy (2008) terms 'public privacy', anonymity itself arguably does not exist online. It survives in a public, shared space and is limited more by access than physicality (Garcia et al 2009). As explained above, the ease of which this privacy can be broken in online settings means that researchers can easily take advantage of this sense of privacy under the guise of gaining data from a public domain. Williams (2007) argues that the delusive features of virtual or 'ephemeral' conversations can evoke hostile responses from those when they have realized their conversations were not private.

Linked to the area of voyeurism or lurking is the increasingly contentious issue of definitions and boundaries of private space in graphical worlds. Avatars of these virtual spaces can move throughout the world freely however, netiquette conventions prohibit this in what is considered 'private spaces'. The more private the space the less interaction occurs. However, as a pixel lurker, this can be easily overcome and introduces ethical considerations of online private versus public spaces. Williams (2007) contends text is considered public but graphically, there are clear distinctions, for example someone's created, virtual home. The implications for this are significant. For example, does this mean conversation in someone's 'home' or online group is fair game when located in

virtual reality or, like offline, would it require informed consent and be approached with sensitivity? Williams (2007) suggests these guidelines need to be constantly revisited. Garcia et al highlight, “The blurring of public and private in the online world raises ethical issues around access to data and techniques for the protection of privacy and confidentiality” (2009, 53).

When disinhibitation and associated ‘lurking’ may not impact significantly on the authenticity of data, it does raise ethical issues as “digital ethnography’s ‘uniquely unobtrusive nature [...] is the source of much of its attractiveness and its contentiousness’” (Murthy 2008, 840). In terms of voyeurism, or lurking, we did not impose on the young people, as they gave permission and chose to be involved in the project, identifying themselves as experts. They also accepted the Code of Conduct which meant that if they did not follow the stipulated etiquette, they could be removed from TEN (and their comments within TEN made ‘invisible’). In this way, negative connotations of voyeurism or lurking were somewhat negated as the focus was on finding out about the positive practice and trajectory towards expertise. The participants were aware their actions and interactions within TEN were observable.

In online settings, ethnographers are physically invisible, and can be covert if they are taking on an avatar. Murthy (2008) and Leander and McKim (2003) believe this is not a neutral position as many researchers propose, but a position of power. Murthy explains that being online is the equivalent to being in a fieldwork setting and therefore not neutral. This then also has implications for the observer. It means the researcher has not overcome power relations as the researcher still brings their ‘gaze’ with them to online research even though they may take on a more passive role online than offline.

The notion of covert observation became an issue as the TEN project proceeded. Two participants included a blog or a website that they had designed within their profile which provided additional information about each participant. The profile pages did showcase some hyperlinks of other work they had done or, as in one instance, the blog he wrote. The lead researcher was able to access these websites to verify their authenticity. Ethical questions arise when considering whether their cyberspace creations were artefacts that could be collected within the research. While the participants knew their profile page was only accessible to other users of TEN (as it was not a public site), it remains a site of tension as to whether the public spaces they pointed to within the private space of TEN could constitute the data collection of the TEN. In this project, the public spaces were only checked and observed, but were not collated as part of the TEN data. It is possible that this issue could be resolved by including a statement in the participant information sheet that one's cyberspace profile or presence if offered as part of their profile/identity can be deemed part of a digital research data collection process. Additionally, the future technical improvement of the instant chat facility will eventually show who is online to ensure that particular mode of observation is overt.

The researcher

Online ethnographies also present new challenges for researchers. Garcia et al (2009) explains it is necessary for the researcher to develop new skills based in text and visual data for this to be successful. Williams (2007), Cocciolo (2007) and Fox, Morris and Rumsey (2009) argue that interaction in cyberworlds can be disorienting for researchers and requires significant practice in both graphical formats and in interpreting threading. Threading was a particular skill required within the TEN project as this environment

provided the opportunity for non-sequential responses to grand-tour questions (such as 'if someone who was aged 13 wanted to become a technological expert, what would you suggest they do?') and peer commentary on expertise. The online, networking environment enabled participants to pose their own questions and develop their own discussion threads. Questions, comments, and probes were added and inserted by the online moderators and by participants.

Cocciolo (2007) suggests it is possible for the researcher to become embedded in the virtual world as a fellow participant, a technique drawn on to a certain extent by the TEN researchers as they interacted online with participants, being part of the site rather than being separate from it. The implications of this for research is the crossover of traditional ethnographic techniques to online applications is justified and in fact has produced many advantages that can enrich ethnographies rather than stifling meaning in any way (Cocciolo 2007; Fox, Morris and Rumsey 2007; Garcia et al 2009; Murthy 2008; Stewart and Williams 2005). Leander and McKim claim, "We work to understand these coordinations – the ways in which we are 'in' and travel across more than one space at one time – as opening up new possibilities for participants and researchers alike" (2003, 238). We now move to discussing the design and functionality of TEN in light of this literature, then move to discuss its benefits, limitations, and its classification.

The effectiveness of the online environment for data collection

The six male participants (Ben, John, Simon, Matthew, Paul, and James were their given pseudonyms) were aged from 13 – 17, and were sampled through a snowballing method whereby the chief investigators asked people they knew (within and outside of their workplace, the Faculty of Education) if they could suggest names of teenaged

technological experts who may be interested in being involved in the research. The potential participants who were approached were young people who were experts in their use of digital technology, namely computers.

Ethnographic research focuses on the collection of data (observational, artefacts and interviews) in-situ which the TEN website supports. The distributed nature of access provided by the web-environment heightened the convenience of participation (it could occur wherever an Internet access existed and at any time). This online environment provided networking opportunities for similarly skilled and like-minded teenagers who were interested in computing technologies. Participants were attracted to project involvement through emphasis on the special nature of the project and its participants, and the provision of an opportunity to discuss something the participants were passionate about. We invited and provided a place for computer industry experts to give advice and share their knowledge within TEN. We also asked the teenage experts (who were self-selecting) to identify what kind of personnel (industry experts) they would like to 'speak' with.

The TEN website was built with the emlab (educational media lab), Faculty of Education, University of Wollongong, with adaptations made for the online fieldwork environment. The research activities were conducted online through the facilitation of TEN. This provided participants with the opportunity to answer 10 survey questions, and discuss topics of interest in the Instant Chat and discussion forums. The 'chat' and discussions were captured so that content analysis could occur. Industry experts were brought into TEN for set periods so the teenage experts could interact with them so the participants were benefited and could learn from these industry experts.

The TEN website was designed for all connections and communications within it to be captured so we can document how interactions occur and how recommendations are made for others to join. Observation of participant interactions via discussions in the forum, and answering and replying to each others' responses to the open survey questions help to facilitate this online ethnography. These were used to help prompt discussion, and from reading each others' comments, participants were able to build on and develop their answers if they chose to do so.

Web material contributed by the young people was captured as part of the data collection. TEN participants were able to showcase the projects they had been involved in. This demonstration of previous activities compiled some of the discussion within TEN captured within the database.

The online approach enabled the researchers to engage synchronously in instant chat with the participants. All instances of instant chat were deemed to be an online version of an interview and were captured within the database. In addition, open-ended questions were used in an asynchronous environment to support the respondents to respond in their own time and select the words they wished to use in response, but also promote online interaction with other technological experts. TEN provided two additional means of interview data collection techniques, namely the survey function and the discussion forum.

The ten survey (compulsory interview) questions were designed based on previous research conducted by the first author, of which this study was an extension:

1) What do you think makes someone a technological expert?
2) If someone aged 13 wanted to be a technological expert, what would you suggest they do?
3) How did you become a technological expert?

4) In what areas are you an expert?
5) In what areas are you developing expertise?
6) What is expertise?
7) If someone aged 33 wanted to be a technological expert, what would you suggest they do?
8) Some people say expertise can only be gained by adults – what do you think?
9) Who and what have been key influences in you becoming an expert?
10) What have you done that proves you are a technological expert?

This section focuses on the methods used to obtain the data from the consenting six participants. The design and the functionality of the survey questions was practical and helpful, as was the discussion forum where the lead researcher put additional questions or probes. For example, whatever was typed into TEN was stored securely and was permanent. There was no need for transcription, or the expansion of field notes from a first iteration. Participants could add additional comments and edit their own comments. Text could then be directly inserted into qualitative software data analysis programs. The news feed titled, 'New stuff' included updates of who had recently answered survey or forum questions which provided an informative and essential function.

Tensions of the online approach

A number of tensions arose when TEN was implemented concerning some of the TEN features and the recruitment of participants. While it was not an aim in the first phase of this project to recruit a large number of participants, the small numbers resulting from the recruitment and snowball sampling process were disappointing especially as the capacity of TEN was unlimited. Despite this, TEN still provided fascinating data in relation to the process of how it occurred, that is, the online methodology and its subsequent classification. Elsewhere (Johnson 2009) the usefulness of the data captured from the first stage of using TEN has been analysed and presented. In the future, we would need to

widely advertise the project through newspapers, youth publications, perhaps through broadcast emails within schools, and perhaps through online bulletin boards (Fox, Morris and Rumsey 2007) or news groups as highlighted elsewhere: “Taking advantage of existing social groups online is by far the most common and successful method of recruiting participants” (Stewart and Williams 2005, 298). It is an aim of the project to add some additional features then begin the project again for a second phase whereby a large(r) number of participants could contribute to answering the questions and collaboration on negotiated projects (perhaps with industry experts).

It was difficult to immediately source industry experts, especially due to the time restraints imposed on the project. Though two offered whom were known personally to the lead researcher, only one engaged with the participants. Obtaining support from industry experts such as software and website developers may prove to be a continual challenge, but using such networking sites that are available in 2010 and beyond such as LinkedIn or ZoomInfo may prove helpful. While including industry experts in the project seemed like a good idea, it was not a focus of the project. Again, the focus was on the process of the online methodology, the tensions associated with it, and its classification.

Though the instant chat forum was a feature that was used, and was expected to be highly utilised, we were unable to see who else was online when using the chat facility. Though twice the lead researcher emailed participants to let them know when she would be online to communicate with them, this organization proved fruitless and only on one occasion did the lead researcher talk to a participant who was coincidentally online at the same time she was. In addition, it may prove helpful to have an instruction

that showcases the instant chat feature as some participants did not initially see that the instant chat facility was available.

One question of interest raised in regard to the design of this project was why we did not seek to replicate an informal environment such as a social networking site (e.g. MySpace). While we did consult a focus group of young people about their preferences for such an online environment, we found that the particular demographic of those we were targeting (teenage technological experts) typically despise the popular social networking sites (such as Facebook and Twitter, etc). The technological experts we were interested in communicating with often do not use these sites. Trying to create an environment that appeals to a particular age group instead of a particular group with shared interests seems to be of little value. The other limitation with trying to replicate something like Facebook is that an endeavour such as that would require an extensive amount of money and time, not available for this project. It is very hard to match the changing nature of current technology and the investment into modifications such as the ones that occur frequently on Facebook. Despite the formality of TEN, we argue there is value in its approach because of the useful data obtained (see Johnson 2009), which works towards fulfilling the ethnographic principles of understanding and discovery (Genzuk 1999).

For the next phase of the project, future research funding will need to be obtained to develop technical features of the site. The features listed below will facilitate ease of use such as:

- Having a space which says 'who is online' and therefore is available to chat to within the instant chat forum;
- Increasing metadata and search engine optimization (e.g. spiders, crawlers and meta-tags).

- Incorporate email alerts about replies to posts, updates to discussion threads, etc.
- Randomly generate the questions so that participants can get to answer questions in different order so they get the opportunity to answer the questions first, rather than way down the track after the others.
- The promotion and utilisation of a user-friendly, searchable url (that is, <www.teenageexpertisenetwork.net>) which was disallowed by the university in question due to the site being hosted at the university but not using the university's domain addresses.

These technical improvements will assist in increasing TEN's functionality as well as helping to fulfil ethnographic principles of exploration. Listing these improvements demonstrates the reflexive nature of conducting ethnography (Hammersley and Atkinson 2007), a principle to which the whole process has adhered. In addition, we would like to add more questions that become available once participants have answered the first ten questions. This will extend the project and allow for further exploration, that is, in-depth study (Hammersley and Atkinson 2007). We can explore why only male participants participated in the research identifying themselves as technological experts. While one girl did sign up to TEN, she did not give informed consent, nor did she answer the questions in TEN. While in an earlier study, notions of gendered experts were explored (Johnson 2004), it remains a further area for exploration in subsequent phases.

Of particular relevance to this article is the need to provide a project space within TEN so participants can collaborate to devise new projects and complete actual projects (such as the hypertext mark-up language [HTML] design of a website for a charity). This would help us to achieve the goal of exploring how such projects and consequent collaborative networking are undertaken within an online environment. This would achieve the purposes of the second stage, which seeks to observe how the experts networked with each other for collaborative projects. Having a project such as this would

increase the motivation of participants to return to utilise the site. Financial limitations meant we were not able to provide this area within TEN in this first iteration.

Another idea suggested by an industry expert was to provide a problem within TEN to generate real-world problem solving. For example, ‘if someone came to you asking you to build a site like TEN, with a budget of only $100, how would you go about it? What programs/software would you use? What would change if you had a budget of $1000? What if you had no budget at all?’ Having a hypothetical project available to discuss within TEN would provide us with the ability to explore how the participants go about resourcing a project, including how they go about learning the knowledge that helps them instigate the project, and how they gain the skills needed to implement the project. It would also promote the regular use of the site.

As suggested by the discussion above, it is possible to overcome the methodological tensions that have arisen within TEN. The benefit of having established TEN as an initial trial has resulted in reflexive discussions which have been used as the basis for many improvements, all of which help to further establish a far more methodologically rigorous approach.

Methodological classification

By improving the features and increasing the scope of the functions of TEN, the ethnographic approach may be enhanced. As it currently stands, the actual methodology that TEN fits within is debatable. Based on this first stage or initial attempt, while we utilised ethnographic principles, we can state it is currently not an ethnography, despite being influenced by the ethnographic principles of naturalism, discovery and understanding (Genzuk 1999) and utilising observations, interviews and artefacts

(Hammersley and Atkinson 2007). For it to be a true ethnography, or for TEN to move towards being more ethnographic, observations of interactions would need to occur, so therefore there is a need for a project area within TEN to be developed so we can observe how the experts go about interacting with each other. Through the participants' construction of a purpose-built environment such as a website for a charity or setting up Drupal (an open source, that is, a free, content management system that enables anyone to create and publish content online) to be used by a class of students, or solving a problem within TEN, we can then observe how participants go about it in order to see what resources they draw upon and how they collaborate with each other in order to fulfil the task. This will enable us to fully observe their interactions, in alignment with an *in-situ* place-based ethnography.

It seems the first iteration of TEN can be classified as an online methodology influenced by ethnography, or in other words, an online ethnographic approach. As TEN does not aspire to be a virtual world, merely an artificial setting for a particular group of people, it may be more appropriate to classify or label it as a new media object influenced by ethnographic principles. As ethnographies are typically conducted in participants' natural, familiar settings, it may be that the creation of an artificial replication of a social network (or a site of online exploration such as TEN) may be at odds with the authentic intentions of true ethnography. However, with the proposed improvements to the TEN online environment, the possibilities for reclassification as an online ethnographic study become possible. The proposed improvements, such as the space for collaborative projects as described above, allow for both increased time and contact producing far more

opportunities firstly, for social interaction to occur between the participants, industry experts and researchers; and secondly for these interactions to be captured and analysed.

Conclusion

TEN provided an innovative means of collecting data in a way that reflects the fluidity of skill and knowledge (Johnson 2009). This technological skill and knowledge was continually being honed and enhanced as the participants added to and refined their knowledge about various technologies. By this we mean that, in alignment with the participants' practice, TEN is adaptable, flexible and open. The online environment can continually be refined and honed as new iterations are implemented. The site can be added to, expanded, and advanced. The data from a previous phase can be stored, whilst a new iteration provides future users with a blank space to answer questions and participate in discussion forums.

In order for TEN to be classified more as an ethnography, there would need to be an area entitled 'projects' where participants could collaborate so the networking, production and consumption of knowledge and artefacts can be observed (Hammersley and Atkinson 2007; Johnson 2009). This will attempt to gain insight, or a picture of how the experts function, how they communicate and who they contact in order to find out information. Of course, it is possible that the participants will go to other websites and these interactions will not be captured within TEN. Despite this, TEN remains an innovative means to capture secure data, observe interactions amongst a particular group of like-minded young people, yet presents challenges that require more funding and continued reflexivity in order for it to be more effective and for it to constitute an online ethnography.

Acknowledgements

This research project was funded by a University of Wollongong Research Committee small grant (2008).

References

Brownlow, C. and O'Dell, L. (2002) 'Ethical Issues for Qualitative Research in On-line Communities', *Disability & Society, 17*(6), pp. 685 - 694.

Bourdieu, P. (1986) The forms of capital (R. Nice, Trans.). In J. E. Richardson (Ed.), Handbook of Theory of Research for the Sociology of Education (pp. 241-258). Greenword Press: Westport, CT.

Carter, D. (2004) ' Living in Virtual Communities: Making Friends Online', *Journal of Urban Technology, 11*(3), pp. 109-125.

Carter, D. (2005) 'Living in Virtual Communities: An Ethnography of Human Relationships in Cyberspace', *Information, Communication & Society, 8*(2), pp. 148-167.

Cocciolo, A. (2007) *Second Look: A Research Platform for Second Life*. Columbia University Press: Columbia, NY.

Fox, F. E., Morris, M. and Rumsey, N. (2007) 'Doing Synchronous Online Focus Groups With Young People: Methodological Reflections', *Qualitative Health Research, 17*(4), pp. 539-547.

Garcia, A., Standlee, A., Bechkoff, J. and Yan, C. (2009) 'Ethnographic Approaches to the Internet and Computer-Mediated Communication', *Journal of Contemporary Ethnography, 38*(1), pp. 52-84.

Genzuk, M. (1999) Tapping Into Community Funds of Knowledge. In: Effective Strategies for English Language Acquisition: A Curriculum Guide for the Development of Teachers, Grades Kindergarten through Eight. Los Angeles Annenberg Metropolitian Project/ARCO Foundation. Los Angeles. Available from: http://www-rcf.usc.edu/~genzuk/Ethnographic_Research.html (accessed 30 November, 2007).

Hammersley, M. and Atkinson, P. (2007) *Ethnography: Principles in Practice* (3rd ed.). Routledge: London, UK.

Johnson, N. F. (2004) Computers and Gender in Senior Primary Classrooms. Unpublished Masters Thesis, Geelong: Deakin University.

Johnson, N. F. (2007a) Teenage Technological Experts: Bourdieu and the Performance of Expertise. Unpublished Doctoral Thesis, Geelong: Deakin University.

Johnson, N. F. (2007b) Understanding teenager technological expertise in out-of-school settings. Refereed paper presented at the annual conference for the Australian Association for Research in Education, Fremantle, 25–29 November, 2007, available: http://www.aare.edu.au/07pap/abs07.htm

Johnson, N. F. (2009) 'The Teenage Expertise Network: The online availability of expertise', *International Journal of Learning*, *16*(5), pp. 211-220.

Leander, K. and McKim, K. (2003) 'Tracing the Everyday 'Sitings' of Adolescents on the Internet: A Strategic Adaption of Ethnography Across Online and Offline Spaces', *Education, Communication and Information*, *3*(2), pp. 211-240.

Lefever, S., Dal, M., and Matthiasdottir, A. (2006) 'Online Data Collection in Academic Research: Advantages and Limitations', *British Journal of Educational Technology, 38*(4), pp. 574 - 582.

Manovich, L. (2001) *The Language of New Media*. MIT Press: Cambridge, MA.

Murthy, D. (2008) 'Digital Ethnography', *Sociology. 42*(5), pp. 837-855.

Prensky, M. (2001) 'Digital Natives, Digital Immigrants Part 1', *On the Horizon: The Strategic Planning Resource for Education Professionals, 9*(5): pp. 1-6.

Stewart, K. and Williams, M. (2005) 'Researching Online Populations: the Use of Online Focus Groups for Social Research', *Qualitative Research, 5*(4): pp. 395-416.

Tamboukou, M. and Ball, S. (2003) 'Genealogy and Ethnography: Fruitful Encounters or Dangerous Liaisons', In M. Tamboukou and S. Ball (Eds). *Dangerous Encounters: Genealogy and Ethnography*. New York: Peter Lang, pp. 1–36.

Topp, N. W. and Pawloski, B. (2002) 'Online Data Collection', *Journal of Science Education & Technology, 11*(2), pp. 173-178.

Travers, M. (2009) 'New Methods, Old Problems: A Sceptical View of Innovation in Qualitative Research', *Qualitative Research*, *9*(2), pp. 161-179.

Ward, K. J. (1999) 'The Cyber-Ethnographic (Re)Construction of Two Feminist Online Communities', *Sociological Research Online, 4*(1) available from http://www.socresonline.org/uk/4/1/ward.html (date accessed October 11, 2010).

West, A., Lewis, J. and Currie, P. (2009) 'Students' Facebook 'Friends': Public and Private Spheres', *Journal of Youth Studies*, *12*(6), 615-627.

Williams, M. (2007) 'Avatar Watching: Participant Observation in Graphical Online Environments', *Qualitative Research, 7*(1), pp. 5-24.

Wood, R. T. A., Griffiths, M. D., and Eatough, V. (2004) 'Online Data Collection from Video Game Players: Methodological Issues', *CyberPsychology & Behavior, 7*(5), pp. 511 - 518.