Chapter 12: Conclusions

This thesis began by asking a set of tentative questions related to my experiences teaching undergraduates and how my observations did not align with the Internet savvy rhetoric portrayed by the various Net Generation, Digital Native and Millennials narratives. By conceptualising this knowledge in terms of ‘Internet literacies’, as opposed to a set of skills or understandings, and by also considering the views and understandings of academics that are central to facilitating the development of Internet literacies, a multifaceted and multidimensional understanding of my original tentative questions evolved.

The first aim of this research was related to undergraduates’ Internet literacies and their views about Internet literacy education (A1-2011). Internet literacies were defined in Section 5.4 as the abilities a person or social group draws upon when interacting with Internet technologies to derive or produce meaning, and the social, learning and work-related practices that these abilities are applied to. This definition highlights the two perspectives: ‘literacy as cognitive abilities’ and ‘literacy as a practice’. Using the research questions as structure, the following paragraphs summarise the findings and conclusions associated with the first research aim.

RQ1-2008: What are undergraduates’ conceptions of the Internet and experiences of Internet-related technologies?

Students tended to view the Internet as a vast information resource or a collection of Web pages. Despite having studied modules where other conceptions of the Internet and other Internet-related technologies were promoted, three years of study appeared to have heightened, rather than lessened, this view. Students also claimed to use a surprisingly narrow range of Internet-related technologies, with few students claiming to use popular Web 2.0 technologies like Flickr or Twitter. Of the few Web 2.0 sites mentioned by students, it was online social networking site Facebook that dominated. Students appeared to devote considerable energy to maintaining their Facebook presence and ‘lurking’, with many describing how distracting they felt it was, some describing it as an addiction. Social pressure was the main reason for this perceived excessive use of Facebook, and also the initial reason for creating a profile.
RQ2-2008: To what extent do undergraduates value the Internet and Internet-related technologies?

After three years of study, students still felt they could do almost anything on the Internet, particularly in terms of its capability to satisfy their information needs. This tended to centralise around students’ ease at finding information using search engine Google. With such a positive perceptions of the Internet’s affordances, it is maybe not surprising that the Internet appeared to be seamlessly integrated into their daily lives. Students were also unanimous praising the affordances that Facebook facilitated, claiming it satisfied various social and digital needs in one convenient location.

RQ3-2008: What are undergraduates’ perceptions of being Internet literate?

At Level 1, students described those that were more Internet literate as being more efficient and successful at using the Internet to achieve online tasks, particularly to find information. This view persisted at Level 3, although students also felt a person’s ability to evaluate online sources was important. To a lesser extent, students felt being aware of online privacy issues, and having certain technical and communication skills, were important.

RQ4-2008: To what extent do undergraduates perceive themselves as Internet literate?

Students appeared highly confident with their Internet-related abilities, particularly to satisfy their own information-related needs. However there was also a not so confident and less-vocal minority. Those students who were confident at Level 1 appeared more confident at the end of their studies, whereas the less confident minority at Level 1 appeared just as insecure.

RQ5-2008: How do undergraduates perceive they have become Internet literate prior to starting their university studies?

Students perceived a minimum set of basic skills and understandings necessary to use the Internet. With these basics students felt you could then teach yourself to become Internet literate. Most students felt they taught themselves when needs arose as opposed to feeling they have been previously taught. On the rare occasions that they needed support, students sought the advice of someone they perceived as Internet literate. Underlying many students’ attitudes was what might be described as a satisficing attitude towards online learning. That is, they claimed that they only learnt as much as they needed to know.
RQ6-2008: How do undergraduates perceive the value of their pre-university teaching?

Students were generally disparaging of their pre-university education, claiming it had either provided them with the basic skills to use the Internet or claiming it had taught them nothing.

RQ1-2011: To what extent are undergraduates, critical and sophisticated users of the Internet technologies, seamlessly integrating them into their lives?

This study found little evidence to support the narrative promoted by post-2008 national reports and strategies that the students are critical or sophisticated users of Internet technologies. On the contrary, students appeared to select technologies according to social pressure or habit as opposed to any critical reflection. In addition, students’ use of Internet technologies was more mundane, being related to supporting their hectic social lives than anything radically different. However, there was evidence of even the least frequent users of the Internet seamlessly integrating Internet technologies into their social lives (see also RQ2-2008 above).

RQ2-2011: To what extent do undergraduates demand Internet technologies and pedagogies in their studies?

This study found no evidence to support the narrative promoted by post-2008 national reports and strategies that students demand Internet technologies and pedagogies within their studies.

RQ3-2011: To what extent do my school’s Information Management undergraduates perceive their university studies have developed their Internet literacies?

There was wide variation in the extent to which students felt their university studies had impacted upon their Internet literacies. Some claimed that their entire degree was related to ensuring they were Internet literate, whereas others felt their studies had only improved their abilities to find online academic information.
RQ4-2011: To what extent do undergraduates’ Internet literacies, and perceptions of being Internet literate, evolve through their university studies?

Despite three years of studying Information Management, where a range of Internet literacies were developed as part of their degree, students' perceptions of being Internet literate were narrow and unsophisticated compared to their teachers’. Whilst students claimed their academic online information seeking practices had changed, there was no evidence of other Internet-related practices or their perceptions of being Internet literate had evolved. In addition, given that the Information School promotes the Information Management degrees as providing students with the necessary skills to cope in an Information Society, there were a surprising number of students who felt overwhelmed by the amount of information available online.

The third research aim was related to exploring academics’ perceptions of undergraduates’ Internet literacies, what it means to be an Internet literate student and their views about Internet literacy education (A3-2011). Using the research questions as structure, the following paragraphs summarise the findings and conclusions associated with this research aim.

RQ7-2008: To what extent do academics value the Internet and Internet-related technologies?

There was almost unanimous agreement that the Internet had profoundly transformed academics’ way of working. However, there were mixed feelings regarding whether these changes were welcome, being particularly concerned with the amount of time spent communicating via e-mail and how the Internet has brought work into their homes. A minority of academics appeared to resent these changes and retained pre-Internet practices wherever possible. Academics also varied attitudes towards using Internet technologies outside of work, from indifference to feeling concerned they were not keeping-up.

RQ8-2008: To what extent do academics perceive themselves as Internet literate?

Academics claimed to be confident using the Internet to find academic content, but generally felt less confident with their technical Internet-related abilities and their abilities to seriously engage with Web 2.0 technologies.
RQ9-2008: What are academics’ perceptions of undergraduates’ Internet experiences?

Academics were unsure what undergraduates used the Internet for and how they used it, although most presumed online social networking sites like Facebook would figure greatly in students’ lives.

RQ10-2008: To what extent do academics perceive their students are, or have to be, Internet literate?

Academics were almost unanimous in their concern with students’ poor academic-related Internet skills, particularly in their ability to locate information and evaluate online sources. No clear picture emerged about when academics felt Internet literacy skills should be taught. Some felt that students should be Internet literate when they start their university studies, whilst others felt these skills should be developed at Level 1 or throughout students’ studies.

RQ11-2008: What are academics’ perceptions of, and pedagogies for, Internet literacy?

Academics’ held multi-perspective, multifaceted and multileveled perceptions of what it means to be an Internet literate student. Three primary perspectives and composite facets were identified: Internet literacies as competencies comprising of ethics, ICT and security; Internet literacies as capabilities comprising of employability, exploitation and citizenship; and Internet literacies as qualities comprising of being motivated, having an open-mind and being empathetic. In addition, the analysis showed that academics used the full range of Bloom’s Revised Taxonomy three dimensions to describe an Internet literate student: cognitive processes, knowledge and affective, although individual academics tended to stress certain categories or dimensions. Furthermore, academics perceived being literate is either about achieving a level of proficiency or about becoming progressively more able.

Academics tended to associate Internet literacy with online information literacy, viewing the two literacies as synonymous, perceiving Internet literacy as overlapping information literacy, or perceiving one as the subset of the other. Academics either felt Internet literacy teaching should be embedded within credited modules or felt it could be taught as a stand-alone module. Academics viewed Internet literacy education as involving higher-order thinking skills incorporating some level of critical thinking or reflection.
RQ12-2008: Whose role do academics feel it is to facilitate Internet literate students?

Academics described two principal levels of responsibility for teaching students Internet literacies: it was viewed as the responsibility of all academics or it should be devolved to an academic that who was a specialist in this area.

Two research questions bridge the outcome of the two research aims summarised so far (A1-2011 and A3-2011). These are presented in the following paragraphs.

RQ5-2011: To what extent is the digital native-immigrant rhetoric prevalent amongst the academics and undergraduates in the Information School?

Academics implied that students’ relationship with the Internet was fundamentally different than their own, and that these differences might be generational. Undergraduates maintained two viewpoints regarding how they perceive the Internet literacies of those older than them. Firstly, as they learn quicker and have ‘grown up’ with the Internet, they must be more experienced than the older generation who tend to be more cautious and less likely to play. However, they also maintain that their lecturers’ Internet skills and understandings should be at least as good their own. Hence, the digital native-immigrant rhetoric is prevalent amongst our undergraduates, but they appeared to be unaware of contradictory perceptions.

RQ13-2008: What [dis]parities exist between undergraduate’ and academics’ perceptions of Internet literacy?

There was some parity between undergraduate' and academics' perceptions of Internet literacy in terms of ICT and security-related competencies. However, in contrast to the multidimensional, multifaceted and multileveled perceptions of Internet literacy and being Internet literate presented by academics, students struggled to describe what they felt it meant to be Internet literate, particularly in relation to seeking online information.

Charmaz (2006) conceptualises research as a ‘journey’ and the sense we make of this journey takes the form in the completed work. To help readers judge the journey and its outcomes, I will frame the discussion around Lincoln and Guba (1985) trustworthiness criteria, Charmaz (2006) criteria for Constructivist Grounded Theory studies and Guba and Lincoln’s (1989a) authenticity criteria.
12.1 Contribution and usefulness

This research makes contributions at three levels: my own teaching; teaching within information schools and departments; and the wider educational-related literature. These three levels are discussed in more detail in the following paragraphs.

Firstly, this research has contributed to my own understanding of undergraduates’ Internet literacies and will enable me to better align my teaching to students’ needs and experiences. For example, I coordinate and teach a module that aims to improve Level 1 undergraduates’ information literacy abilities and their understandings of information literacy. By all external measures, this was a successful module last year: most students passed, attendance remained relatively stable and student module evaluations were positive. However, there was an overall feeling that students ‘didn’t get it’ and lacked motivation to really engage with the topics covered. The conscientious student referred to in the Introduction (Section 1.1) who typed, “What are the factors that might cause Climate Change?” into Google, was a student in this module. Having conducted this research, I have a better understanding as to why the module ultimately failed to achieve its learning objectives. Primarily, I now feel the students’ online information literacies were never really challenged. For this year, I will begin with the premise that their online information literacy confidence is based on a narrow conception of information literacy and years of successfully finding information online, primarily via using the search engine Google, has led them to overestimate their confidence. This research has underlined the need to provide opportunities that allow students to assess their own abilities and understandings on a range of online information literacy tasks, from those that might be familiar to those that might challenge the most information literate student. In addition, the Internet literacy triangle (Figure 9.1) and the Internet literacies grid (see Table 5.1) could be used as a starting point for students to reflect upon and develop their own understanding of online information literacy and what it means to be an information literate student.

Secondly, this research could inform discussions related students’ Internet literacies within other university departments (see Section 11.4). In particular, the disparities and tensions identified in Section 11.2 may resonate with academics in other information schools and departments. The implications for their success their curricula are profound. Whilst the proposals (see Section 11.3) to resolve these disparities and tensions relate to my own School, academics in other information schools and departments may find them relevant. In addition, they may find the various models and
frameworks developed in this research helpful in analysing and designing curricula (see Section 11.4). The Internet literacy triangle (see Figure 9.1) has already informed discussions in my own School related to the technical strand of a new Informatics undergraduate degree. It encapsulates the fundamental perspectives and facets of Internet literacy that academics in my school felt were important for students to be successful in their studies and beyond.

Thirdly, this research has contributes to the literature that critiques digital native-immigrant narratives (see Section 3.2). It questions those assumptions which cast students as a homogeneous group, avidly using of a wide range of Internet technologies. More significantly, this research adds a new dimension: that of students’ teachers, who are cast as digital immigrants by the rhetoric and whose Internet-related experiences and views about being Internet literate have hitherto not been considered (see Chapter 9). More generally, the Internet literacies grid (Table 5.1) presented in Section 5.3 may be a useful and novel conceptual tool for others to position the numerous conceptions of literacy that are related to the Internet relative to other conceptions40. The Cognitive-Affective Model proposed and demonstrated in Section 9.5.2 could also be a useful tool to conceptualise and categorise learning outcomes more generally. Finally, the Internet literacy triangle (Figure 9.1) represents the collective views of a sample of national and international leaders in information-related research. As such, it adds a valuable (albeit limited to the Internet) contribution to recent literature attempting to define what it means to be a digitally literate student.

12.2 Credibility

Having now spent almost seven years within my school, over a thousand hours teaching undergraduates and transcribed over half a million words, I feel in a strong position to claim that I understand the subtleties of, and am empathetic towards, the research context. However, prolonged and intensive engagement with the research context does not automatically lead to trust between me and the research participants or negate issues related to my role in the information collection. Hence, I have adopted a reflexive stance throughout the study and, where my research decisions and actions could potentially affect the outcomes of the research, I have explicitly drawn the readers’ attention to them (see Sections 8.3.5, 9.2 and 10.3). For example, I have

40 For example, a search of the Library and Information Science Abstracts (LISA) database found 736 articles that contained the words Internet AND literacy OR literacies in the article’s abstract and 45 articles contained these terms in the title.
attempted to be candid about power-related issues related to the researcher-student relationship. Not only has this arguably given my research more credibility, it has also led to further insights into students' perceptions of being Internet literate and potential failings in the School to provide sufficient opportunities for students to critically reflect upon their Internet literacies.

To further add credibility to this research, I have endeavoured to represent all views and understandings revealed during the analysis of the focus groups and research conversations, even if those views and understandings did not entirely coincide with the narrative I was presenting. Negative Case Analysis was used to illuminate potential cases that were odds with the tentative hypotheses I was developing. These were either accommodated into more refined hypotheses or explicitly exposed as deviating from the hypothesis being developed. For example, in Section 9.4.5 I revealed one academic's perspective on Internet literacy that seemed contrary to all other academics' views. Rather than dismissing the perspective as an anomaly, an additional delimitation of the Internet literacy triangle model was included, and the perspective included in the overall narrative.

The credibility of this research is also increased if there is some triangulation of methods employed, the results of any analysis are checked with participants (member checking) and the research outcomes resonate with all participants' views and experiences. These areas are discussed in the next sections.

12.3 Resonance

The conclusions from this research are primarily the product of my own analysis and reflections. However, my conclusions were discussed with my PhD supervisor and close colleagues at various stages in the research cycle. Notwithstanding potential reflexive issues related to using research participants to offer additional credibility to this research, their feedback suggests that the research conclusions have resonance with their own perceptions, views and feelings. In addition, the analysis of all student and academic information gathering was been shared with respective participants towards the end of this inquiry. Whilst this member checking phase did not lead any extended dialogue, all those participants that responded felt I had fairly represented their views.
12.4 Transferability

The outcomes of this research have (see Section 12.1) and will inform school discussions and strategy related to undergraduates’ Internet literacies and develop effective pedagogies to enable our undergraduates to become more Internet literate (research aim: A2-2011). As stated in Section 12.1, aspects of this research that may transfer to other university departments. The transferability of the findings is subject to the ideographic delimitation of all constructivist research. That is, the findings may have broader applicability if, as a result of reading Chapter 2, readers feel sufficient contextual similarities between the context of this research and their own situation. Many information schools and departments would satisfy this proviso. Indeed, many university departments whose curricula are dependent on students accessing in the Internet may find value in the research findings.

12.5 Dependability and confirmability

The dependability of the outcomes from this study primarily arises from the use of triangulation and the creation of an inquiry audit trail. The analysis of the undergraduate and academic research conversations has been triangulated in two ways. Firstly, in addition to coding the all the research conversation transcripts using Bloom’s categories, all the transcripts were analysed twice using different code naming techniques (see Section 8.3.1). The categories from both analyses were merged to produce a more refined set of categories that subsumed the individual codes. Secondly, the results from the Survey of Communication Technology Use and learning style self-assessments augmented the conclusions drawn from analysing the undergraduate focus group and research conversations (see Sections 11.2).

Auditors could satisfy themselves with the dependability and confirmability of this research by studying copies of every document saved during each project working day of this study. These have been archived on an external hard drive purchased with money gained from a University Senate Award for learning and teaching. These files would enable an inquiry auditor to vicariously experience the research process that took place and reassure themselves that a rigorous and dependable research process was undertaken. In addition, readers of this study can reassure themselves of the confirmability of the research that took place by reflecting upon how I have attempted to represent the research context and multiple perspectives of the participants, and its meticulous internal and external referencing.
12.6 Authenticity and final comment

The authenticity of this study has yet to be fully realised. The conclusions of this research have yet to be fully shared with all colleagues. However, judging from the strong and sometimes passionate views expressed during the research conversations, particularly regarding students’ academic Internet literacies, I feel confident that the conclusions of this research will resonate with their feelings and they will feel sufficiently motivated to want to bring Internet literacies to the forefront of my school’s learning and teaching agenda. Furthermore, my own understandings of undergraduates’ Internet literacies and academics’ Internet literacy-related views has transformed as a result of conducting this research. I feel that I have addressed my over-arching question: ‘What is going on?’ (Section 1.1).