

Finding my way around : the information process of distance students when searching for free online resources

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Abstract:

As distance learning continues to develop and evolve, this research report surveys the way distance students seek information. This study was conducted on New Zealand theology undergraduate distance students' and focuses mainly on how technology contributes to their information seeking process. Based on a mixed methods methodology, it aims to find out where students seek information, what kind of information they are looking for, and explores how technology and social networking sites change or contribute to the information seeking process. The main aim was to find out how students access free online resources such as Google books, open source journals and websites.

The findings from this research revealed that there are a number of ways undergraduate theology distance students look for information, and use information. For example some students' main focus is to seek resources to complete an assignment and thus have no intention of learning from the experience. Their aim is to seek resources to meet the requirements of the assignment. On the other hand, there are students that have experience either through their work or from other study. This group of students have the knowledge in hand and simply seek resources to support their argument.

The research proposes a new information seeking model which is based on a cyclic process. The proposed information seeking behaviour model, supports the many ways students behave when seeking for information. The characteristics "starting/chaining, evaluation, browsing and writing" are not steps and it can be overlapped or interrelated. On some occasions, a step might even be missed due to the time frame and the availability of resources available to distance students.

The research ends with a number of recommendations that library could possibly employ when serving the needs of our distance students.

Keywords: *distance, information seeking, theology, open source*

As distance learning continues to develop and evolve, surveying distance students is a foundation for effective library services (Hensley & Miller, 2010, p. 679). This study will describe New Zealand theology undergraduate distance students' experiences when searching for free online information. It will focus mainly on how technology contributes to their information seeking process. It aims to find out where students seek information, what kind of information they are looking for, and explores how technology and social networking sites change or contribute to the information seeking process. It also includes open access scholarly resources.

Chowdhury and Foo (2012, p. 143) defined open access as, "access to digital content free at the point of use... It had its origins on the one hand in the exponential rise in the costs of scholarly information sources, especially journals, and on the other hand in the ease of publication and communication facilities that became available with the advent and proliferation of the internet and various new e-publishing models and standards".

The Association of College and Research Libraries (ACRL) Guidelines state: "The library has primary responsibility for making its resources and services available to its users regardless of physical location"(American Library Association, 2006). However, libraries which support distance education students find it difficult to establish how these students are using their resources, or if their resources and services are meeting the needs of their students. Is even more challenging trying to access the use of free online resources.

Research Questions

The study addresses the following research questions:

- 1) Where do undergraduate theology distance students look for online information?
- 2) How do these students describe their information process?
- 3) How do these students describe the use of electronic information resources in their information seeking?

Literature Review

In recent years there have been a number of studies that focus on the needs of distance students, which have been used to enhance library services to them. Holloway's study explored how document delivery supports distance students' learning (Holloway, 2008). She states that statistics on distance students' use of library resources are important especially when examining patterns over time, providing a valuable resource in directing the library distance programme (Holloway, 2008, p. 491). Hensley and Miller explored distance students' communication preferences and their particular research needs when planning for library instruction sessions (Hensley & Miller, 2010). The findings were used by the University of Illinois Library to more effectively provide library instruction for distance students (Hensley & Miller, 2010, p. 682).

The largest recent study on information seeking behaviour in a tertiary context (not just distance students) was done by Head and Eisenberg, who directed Project Information Literacy which attracted 8,353 responses to their survey (Head & Eisenberg, 2010). The first part of the project was on how college students find information and their preferred use of information sources. It was then continued to the next level, which includes how students evaluate information and how they use the information (Head & Eisenberg, 2010, p. 2). One of the major findings from the research is that most 84% of the students surveyed stated that

the most difficult step was getting started with the research process (Head & Eisenberg, 2010, p. 3).

Social networking tools such as Web 2.0 have become widespread, and are utilized as alternative modes of teaching and learning (Dadzie, 2009, p. 207). Web 2.0 has advantages as the processes are not confined by place or time. Luo conducted semi-structured interviews to examine the adoption of Web 2.0 technology in information literacy instructions at a university setting (Luo, 2010). The findings suggest that it has a positive impact on teaching and learning.

In theology, Gorman (1990) conducted research on the patterns of information seeking and library use among teaching staff in seven Adelaide Theological Colleges in Australia. The data collected, such as the importance of networks, relied on personal collections as well as library resources and were interesting; but, the results are now out-of-date due to the changes in technology. For example: one of the results found that the participants were not interested in more sophisticated library services (Gorman, 1990, p. 155). However, it was not elaborated in detail what the library services were. In recent years, Penner (2009) conducted research on the information needs and behaviours of theology students at the International Baptist Theological Seminary. The research was focused on doctoral and master's level students at dissertation stage. The paper found that there is a need to improve in-depth search skills for students, more electronic resources and the possibility of digitising primary reading materials (Penner, 2009, p. 73).

Methodology

This study used a two-phase, sequential mixed methods approach with a survey as the primary tool. Its intent was to survey the information seeking behaviour of distance students enrolled at New Zealand theological colleges and tertiary institutions with theology courses. In the first phase, quantitative questions explored what resources students use, how they locate information, and addressed the challenges of information seeking and electronic information resources. Information from this first phase was explored further in a second qualitative phase. In the second phase, qualitative surveys asked ten students to list the steps they took to locate information by exploring aspects of how the Internet and access to electronic information affected their behaviour when locating scholarly materials. "The reason for following up with qualitative research in the second phase is to better understand and explain the quantitative results" (Creswell, 2009, p. 122).

A web-based survey was conducted in April-May 2011. Similar to Hensley and Miller's survey questions, the questions consist of a number of multiple-choice questions that included open-ended "other" options which allowed respondents shared additional qualitative data (Hensley & Miller, 2010). This survey draws on the conceptual framework of information seeking behaviour of Ellis along with two new characteristics suggested by Ge: "preparation and planning" and "revising"¹. The second part of the research consisted of a semi-structured survey questionnaire and was conducted in June 2011. Ten students were randomly selected to participate in the survey. All the surveys and correspondence were conducted online.

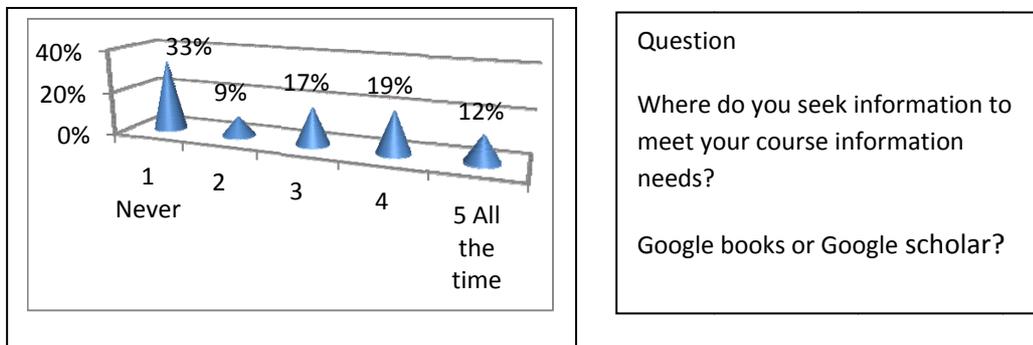
¹ (Six fundamental characteristics: starting, chaining, browsing, differentiating, monitoring and extracting D. Ellis, 1989; Ge, 2010)

Major findings from the study

1) Where do undergraduate theology distance students look for online information?

70% of the participants (60 participants) indicated that they used search engines such as Google or Yahoo when seeking information. On the other hand, 29% (25 participants) stated that they occasionally or never use search engines when seeking information. This is the third common source of locating for information. This result in the study differs from the research conducted by Brahme and Walters that state Google was only used to a limited extent by students (Brahme & Walters, 2010, p. 501). This could be influenced by the population of their study which was doctorate students while this study is on undergraduate students. We can assume that at a doctorate level, students are more aware of research databases and the importance of finding scholarly materials. However, it cannot be generalised that the population of this study uses search engines to locate information or articles only as the participants indicated that they are aware and often consult reputable websites such as www.biblegateway.com and www.bestcommentaries.com. This is because they use information over the Internet for different purposes. 59% (51 of the participants) indicated that they never or at some time used Google Books and/or Google Scholar², and 31% (26 participants) use it often or in every information seeking situation (Figure 1). They used Google Books and Google Scholar to browse through the content and the easy accessibility of it makes it attractive as a starting point.

On the other hand, 33% (28 of the respondents) have never used Google books or Google Scholar.



This could be because of they are not aware of it or were advised not to consult this source, or fear of the difficulty to evaluate resources.

Herrera's (2011, p. 318) study pointed out that there is greater variety of resources such as conference proceedings and open source journals in Google Scholar in comparison to traditional library databases. Therefore, users in a way are worse off if they exclude searching in Google scholar. Also, Google Books has a great deal of historical material in full text (out of copyright) or excerpts of books that are useful to theological students.

2) How do these students describe their information process?

² 10% of the participants didn't answer this question.

The majority of the participants are confident most of the time with their research skills, but only eight percent indicated that they are confident all the time (Figure 2). This is probably due to the participants' background education and the experience they have in this discipline.

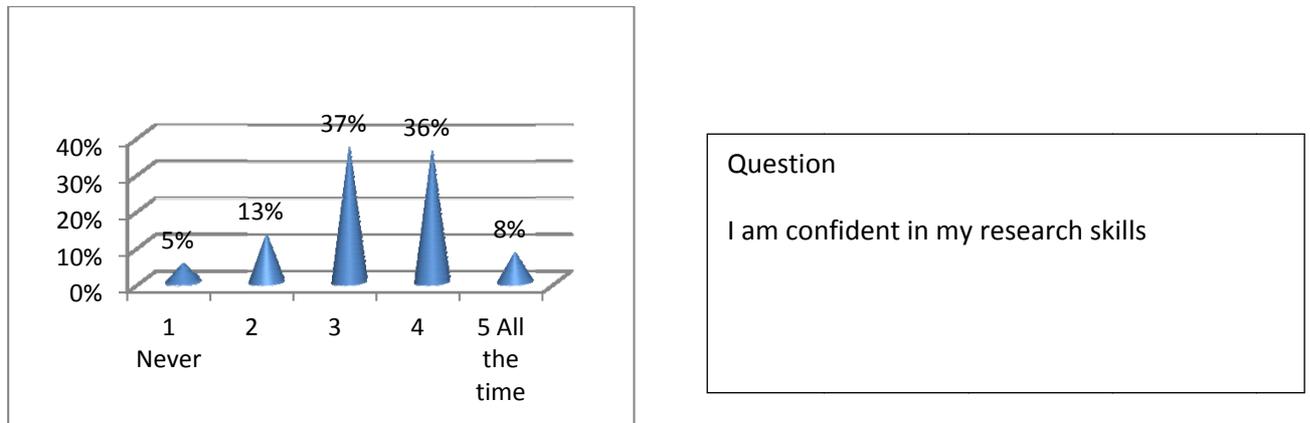


Figure 2

One student elaborated that,

“Well I think that maybe students need to be taught how to research better. But this is coming from the perspective of someone who only has NCEA level 1 English. Although I know I'm not dumb I finished school early and wasn't really taught that much when it comes to research, it was only when I did the first year last year that I had to learn how to a lot myself. But lecturers did help a bit. I think if I'd stayed in school I would have picked up on those skills a bit more. But still the level of research is much harder at university level of study.”

Hence, this explains the reason why 61%, (52 of the participants) indicated that they often have to redo their searching by using different terms when searching for information. While modifying a search to get better results is a normal part of searching by confident searchers, in less confident searchers it is symptomatic of poor choice of initial search terms. The reasons could be that students are unsure of search strategies or wanting to browse at more results before deciding. 52% (33 participants) stated that searching skills are a barrier when searching or locating for information³. However, this research does not cover which parts of the research process are particularly difficult for students that have been explored in other studies. Head and Eisenberg's follow up research in 2010 addressed this issue. They found that getting started in the course related research is the most challenging process that involves “defining a topic, narrowing it down and sorting through search results that are relevant” (Head & Eisenberg, 2010, p. 26). The study by Brahme and Walters, comparing research skills, found that “distance students revealed much less confidence in their research skills compared with onsite students” (Brahme & Walters, 2010, p. 506). Nevertheless this could be due to a number of reasons and factors and cannot be generalized. Students in that research describe the lack of awareness of library resources, which may result in lack of confidence in using research tools (Brahme & Walters, 2010, p. 507).

³ People may select more than one checkbox, so percentage may add up to more than 100%.

According to Maybee (2007), the information seeking process involves steps or stages that begin with knowing that there is a need for information. Following this, a search is conducted and information accumulated. As a result the information is able to be utilized and therefore the information need was resolved (Maybee, 2007, p. 458). For example this participant describes the process:

“...usually search Google with keywords for a scan of information and see if any of the authors turn up with pdf downloadable files or mp3/4 files that I can watch on the topic. I then use the library catalogue and do keywords search. Hopefully the results will show relevant books. I tend to look up any recommended articles (from the lecturer). I look at footnotes in books I read and also in articles and try to trace them down. This can be a goldmine (really useful). Sometimes I find several articles all referring to the same book or journal and if I do then I try to get that.”

Another issue that influences the process is time. 78% of students who answered this question (49 of the participants) indicated that they struggle with time.

It is evident that time constraints affect students' information seeking process. However, this issue has not been explored in the literature⁴. The reasons this is a particular issue with this group may include the nature of theology students' other commitments such as church placements or church work. This could also be due to the fact that distance students are usually more mature and therefore also have family obligations (Roach, 2009, p. 19).

3. How do these students describe the use of electronic information resources in their information seeking?

What are participants' main sources of information? The majority of the participants indicated that their main sources of information are commentaries, theological books and books on Biblical topics. Seventy eight percent (sixty six of the participants) indicated that they prefer hardcopy while 26% (twenty two of the participants) prefer electronic books. The percentage added up to more than 100% is because participants are allowed to select more than one source. This reflects that there are students that prefer both the formats. The main reason hardcopy is the most popular is because it is perceived as easy to read.

Websites are ranked second highest as one of the main sources of information by participants. This is because easy access and no controlled vocabulary attracted students to use it. Nevertheless, when asked whether courseware social networking sites such as Moodle, Facebook, Blackboard or Careyonline are used as resources to seek for information, only 14% (12 of the participants) stated that they used the sites during most or all of their searches (Figure 3). On the other hand, 48% (41 participants) indicated that they have never used these sites at all. Forty two percent (forty four participants) indicated that they have used social networking sites at various times. However it is important to note that the percentage might not be accurate as there are institutions that have no social networking sites for students and staff. At this stage, I am not aware of any providers using Facebook to deliver course content. Facebook is mainly used as an informal information gathering.

⁴ Time factor was not raised in Al-Suqri (2011), Brahme and Walters (2010), Hensley and Miller (2010), Ge (2010), Maybee (2007) and Penner (2009)

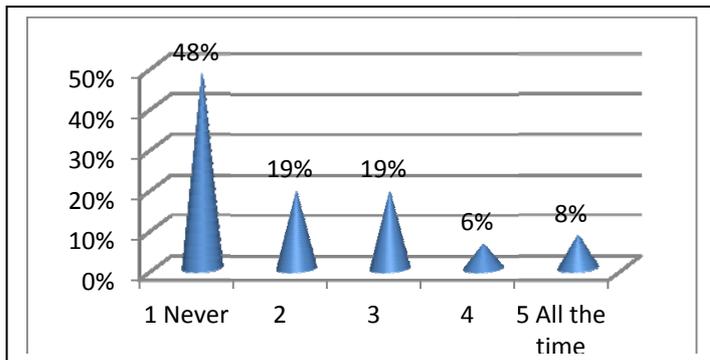


Figure 3

Question

Do you use any of these resources to seek for information?

Social networking site (e.g. Moodle, Facebook, Blackboard, CareyOnline etc..)

Web 2.0 technologies such as blogs, Facebook and Twitter have changed how libraries communicate to library users. According to Ge, the rise of Web 2.0 technologies has changed the information seeking behaviour of users (Ge, 2010, p. 452). Social computing tools are also used for information literacy training and are an ideal source of communication with distance students (Luo, 2010). One participant stated,

“The Blogosphere is a much underappreciated avenue for research. There are many students of all levels, PhD's and prof's etc. out there blogging whose content is searchable and who're often falling-over-themselves-helpful in answering questions and suggesting avenues of enquiry, suggested readings and so forth. “

Nevertheless, this study found that only a small percentage, 29% (25 participants) indicated that they use blogs as a source of information (Figure 4).

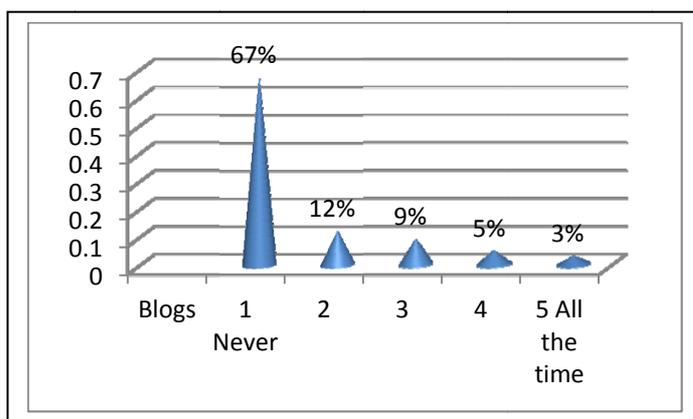


Figure 4

Blogs

Do you use any of these resources to seek for information? How often?

Therefore we can assume that theology students are not using social computing tools as much as students in some other disciplines. This could be due to the basic library management systems and websites that do not include Web 2.0 functionality, and also to time limits.

The ability to link to Google Books, the function of RSS aggregators or ability to tweet is changing the ways students search for information (Ge, 2010, p. 452). Other influences are the increasing availability of scholarly open access scholarly articles, digitalised books and mobile computing.

Ellis's "chaining" process occurs when users find a bibliography on the websites. The bibliography can then be used as a starting point to locate other information. As found in previous studies, citation chaining is an important characteristic. According to George et. al, "nearly half of all graduate students use citation chaining to build a body of literature. Using relevant resources, students check references, bibliographies, endnotes and footnotes for other sources. They repeat their search using this new list of sources. Chaining enables students to search for a known citation and limits their need to use a general search that returns a huge amount of resources that are difficult and time-consuming to search (Ge, 2010)."

Participants indicated that they do a lot of browsing on the Internet to locate information. This includes looking at abstracts, course outlines and browsing online blogs. 39% (33 participants) indicated that they bookmark relevant website addresses and revisit the sites regularly.

Ellis's characteristic of "extracting" has a close relationship with monitoring. Students may appear to monitor at first but end up extracting information during the process.

"I usually read the abstract first and then if it sounds about on the subject I will open it and save it as a PDF. I don't usually read more than a few pages online. I am in a searching mode not reading mode."

Al-Suqri's research found that nearly all respondents skim through key elements of resources (including table of contents, index and abstract) to generate an overview of the contents and identify key points (Al-Suqri, 2011, p. 7). A number of participants suggested that the library should include table of contents information in catalogue records for students to look at. While it is becoming increasingly common to find contents notes and summaries in large academic library and public library catalogues, this is not widespread in smaller organisations, which is a disadvantage for distance students. However the volume of resources available on Google Books has increased the chances of extracting this information, as tables of contents are usually made available even if the full text is not.

Ge's research on the information seeking behaviour of multidisciplinary academic researchers recommended two new characteristics that could be added to David Ellis's behaviour model (Ge, 2010), "Preparation and planning" and "information management". However, the results from this study do not indicate the importance of these two characteristics. For example: participants did not indicate that they plan their searches. There is no comment that they thought about different keywords, truncation, or Boolean searches in order to perform effective searches. One participant indicated that he was frustrated but did not attempt to solve the problem by using the 'help' function in the database or ask a librarian.

Ge's "Information management" characteristic is also not demonstrated in this study. Only 9% (8 of the participants) indicated that they manage their resources by using Zotero, Endnote, or RefWorks. Ge argues that information management become more important and

challenging as researchers discover resources in the data-rich world. Managing digital materials can be challenging and effective tools can be useful for information management (Ge, 2010, p. 450). Nevertheless, it is important to note that not all institutions are able to provide bibliographic management tools software for their staff and students.

Conclusion

The findings of this study revealed that undergraduate distance students' information seeking appears to differ from that reported in other studies of onsite students, academics, and researchers. Ellis's (1989) information seeking model does not seem to fit when studying the behaviour of undergraduate distance students as they have different challenges in regards to locating resources, studying at a distance and time pressure. A revised version of Ellis's model is needed in order to better understand distance students' behaviour.

Ellis's characteristics in his model begin with "starting" which is when researchers identify a key paper to commence the search. The following characteristic is "chaining" which the process requires following up references to articles and books. The "chaining" characteristic relates to "browsing" is because the next process requires researchers to identify relevant sources from the previous step (D. Ellis, 1989, p. 176).

The proposed information seeking model for distance students.

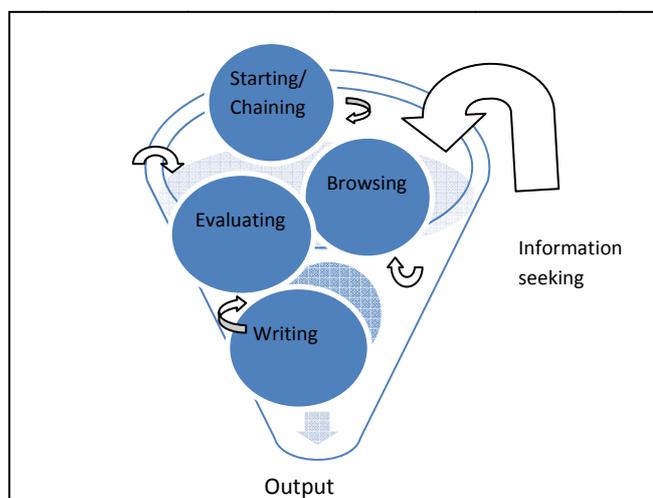


Figure 5

The proposed model argues that there are only four characteristics: Starting/chaining, browsing, evaluating and writing. The characteristics do not consist of steps and there are times the characteristics can be overlapped or interrelated. For example: students at times browse the library or their own collection first before actually starting looking at the bibliography listed in their course materials. Evaluating processes can occur at the beginning as students might be aware of specific authors of the topic they are researching. The process of writing can stimulate the other characteristics such as browsing, in a cyclic process. According to Palmer, Tefteau and Pirmann, a few studies have reported on levels of

information use associated with writing processes (Palmer, Teffeau, & Pirmann, 2009, p. 22). This is supported by Palmer, Cragin and Hogan (2004) who state that “both searching and reading were shown to continue during the writing phases in experimental and informatics project, particularly to judge how to discuss new findings and claims in relation to existing literature (Palmer et al., 2009, p. 22)”.

Therefore the first protocol for such students is to evaluate resources by authors they are familiar with. The process can also begin when writing. Many students will only start to browse through either hardcopy or online resources to support an argument. It is easier to locate information when the student knows exactly what they are looking for.

One of the findings from this study pointed out that time is a major factor for distance students. The time factor will affect their information seeking behaviour and therefore the information seeking processes are shorter compared to the model suggested by Ellis (D. Ellis, 1989).

It is worth noting here that Globethics.net library (www.globethics.net) which was set up since the end of 2008 is a free global digital library specialised in the field of applied ethics. This website is an example of collaboration among commercial publishers; open access authors and Globethics.net participants for making resources available online. Its specialization which is in the field of applied ethics and full text content is an advantage for theological libraries that have limited resources in applied ethics (Stuckelberger & Vallotton, 2010, p. 307). Furthermore the Globethics.net model, could have a potential of synergies such as decreasing costs, increase interaction between world regions and languages and publication of theological research results (Stuckelberger & Vallotton, 2010, p. 310).

E-books offer functionality such as accessibility at anytime and anywhere, which is a real advantage in distance learning (Minčić-Obradović, 2011, p. 18). The preview of books available through Google Books is also one of the sources distance students can benefit from. The ability of looking at the table of contents is an advantage as distance students are able to request the relevant pages to be scanned for them. Services such as Ebook Library (EBL) provides a unique link to book chapters, which allows course readings to be identified. Chapters can be utilised for reserve lending by libraries, and students benefit as the links reduce searching time when looking for required readings. Nevertheless, the limited online availability of the main text books and encyclopaedias in the theology discipline is an issue. There is a move to electronic textbooks for purchase or hire, which may transform the textbook market over the next few years.

Google Scholar Library Links allow libraries to link to resources they subscribe to via a link resolver. Herrera’s study on University of Mississippi library resources found that library link resolver was second only to EBSCO databases (Herrera, 2011, p. 327) in student use.

The findings from this research revealed that there are a number of ways undergraduate theology distance students look for information, and use information. For example some students’ main focus is to seek resources to complete an assignment and thus have no intention of learning from the experience. Their aim is to seek resources to meet the requirements of the assignment. On the other hand, there are students that have experience either through their work or from other study. This group of students have the knowledge in hand and simply seek resources to support their argument.

Further research focussed mainly on the use of Web 2.0 technologies in the library environment among distance students could assist us to broaden our understanding of their behaviour. As Ellis and Goodyear pointed out, “Web 2.0 technologies are not a homogenous set. There is a great deal of difference between a student posting photos on their Facebook site and a team of students working together to produce a Wikipedia entry. Facility with, an enthusiasm for, the social use of Facebook should not be taken into imply either a willingness to engage in the collaborative construction of knowledge or an understanding of why this might be valuable (R. Ellis & Goodyear, 2010, p. 48)”.

A larger scale study that employ distance students of other disciplines and include additional methods would offer the possibility of robust generalizable conclusions and recommendations.

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Short Biography:

Siong Ngor is the current Library Manager at Carey Baptist College in Auckland New Zealand. Her research interest mainly on information seeking behaviour of library users. A recipient of a number of scholarships and grants, her research has been published in various academic journals.