



OpenAIR@RGU

The Open Access Institutional Repository at Robert Gordon University

<http://openair.rgu.ac.uk>

This is an author produced version of a paper published in

International Nursing Review (ISSN 0020-8132, eISSN 1466-7657)
--

This version may not include final proof corrections and does not include published layout or pagination.

Citation Details

Citation for the version of the work held in 'OpenAIR@RGU':

GOODFELLOW, L. M., MACDUFF, C., LESLIE, G., COPELAND, S., NOLFI, D. and BLACKWOOD, D., 2012. Nurse scholars' knowledge and use of electronic theses and dissertations. Available from <i>OpenAIR@RGU</i> . [online]. Available from: http://openair.rgu.ac.uk
--

Citation for the publisher's version:

GOODFELLOW, L. M., MACDUFF, C., LESLIE, G., COPELAND, S., NOLFI, D. and BLACKWOOD, D., 2012. Nurse scholars' knowledge and use of electronic theses and dissertations. <i>International Nursing Review</i> , 59 (4), pp. 511-518
--

Copyright

Items in 'OpenAIR@RGU', Robert Gordon University Open Access Institutional Repository, are protected by copyright and intellectual property law. If you believe that any material held in 'OpenAIR@RGU' infringes copyright, please contact openair-help@rgu.ac.uk with details. The item will be removed from the repository while the claim is investigated.

"This is the peer reviewed version of the following article: GOODFELLOW, L., MACDUFF, C., LESLIE, G., COPELAND, S., NOLFI, D. and BLACKWOOD, D., 2012. Nurse scholar's knowledge and use of electronic theses and dissertations. International Nursing Review, 59(4), pp. 511-518 , which has been published in final form at <http://dx.doi.org/10.1111/j.1466-7657.2012.01008.x>]. This article may be used for non-commercial purposes in accordance with Wiley Terms and Conditions for Self-Archiving."

Nurse Scholars' Knowledge and Use of Electronic Theses and Dissertations

Linda M. Goodfellow, PhD, RN
Associate Professor, Duquesne University School of Nursing
Pittsburgh, Pennsylvania, U.S.A.
412.396.6548 (o) or 412.491.6355 (c) or 412.396.6346 (Fax)
goodfellow.linda@gmail.com

Colin Macduff, PhD, RN
Faculty, School of Nursing and Midwifery
Robert Gordon University
Aberdeen, Scotland, U.K.

Gavin Leslie, PhD, RN
Professor, Critical Care Nursing & Director, Research & Development
School of Nursing & Midwifery
Curtin Health Innovation Research Institute Faculty Health Science
Curtin University
Perth, Australia

Susan Copeland, MPhil, PhD, DipLib, MCLIP
Senior Information Advisor, Library Service
Robert Gordon University
Aberdeen, Scotland, U.K.

David Nolfi, MLS, AHIP
Health Sciences Librarian at Gumberg Library
Duquesne University
Pittsburgh, Pennsylvania, U.S.A.

Diana Blackwood, BA, DipLib, ALIA
Faculty Librarian of Health Sciences & Vice Chancellory
Curtin University
Perth, Australia

The submission of this manuscript in its final form has been approved by all authors. All authors entitled to authorship are listed as authors and in order of their contributions. Each of the authors listed made substantial contributions to the conception and design of this study; development of the researcher-generated survey used to collect data; participated in data collection, and provided input relative to the analysis and interpretation of data. Although the primary author drafted the manuscript, the other authors significantly contributed to the revisions and critically reviewed the manuscript relative to their expertise including nursing and library science. There are no conflicts of interest.

Acknowledgement: This study was funded by the Faculty Development Research Grant Program at Duquesne University, Pittsburgh, Pennsylvania, U.S.A. The authors acknowledge Kathleen McGinnis of Pittsburgh, Pennsylvania for her statistical support.

Nurse Scholars' Knowledge and Use of Electronic Theses and Dissertations

Abstract

Background: Electronic theses and dissertations (ETDs) are a valuable resource for nurse scholars worldwide. ETDs and digital libraries offer the potential to radically change the nature and scope of the way in which doctoral research results are presented, disseminated and used. An exploratory study was undertaken to better understand ETD usage and to address areas where there is a need and an opportunity for educational enhancement.

Aims: The primary objective was to gain an initial understanding of the knowledge and use of ETDs and digital libraries by faculty, graduate students, and alumni of graduate programs at schools of nursing.

Design: A descriptive online survey design was used.

Methods: Purposeful sampling of specific schools of nursing was used to identify institutional participants in Australia, New Zealand, the United Kingdom and the United States. 209 participants completed the online questionnaire.

Results: Only 44% of participants reported knowing how to access ETDs in their institutions' digital libraries and only 18% reported knowing how to do so through a national or international digital library. Only 27% had cited an ETD in a publication. The underuse of ETDs was found to be attributable to specific issues rather than general reluctance to use online resources.

Conclusions: This is the first international study that has explored awareness and use of ETDs, and ETD digital libraries, with a focus on nursing and has set the stage for future research and development in this field. Results show that most nursing scholars do not use ETDs to their fullest potential.

Key Words: Digital libraries; Electronic theses and dissertations (ETDs); Graduate nursing education

Background

Graduate student research, culminating in the production of a thesis or dissertation, should incorporate and reflect the most current, cutting edge, state of the art research in the science of the selected discipline. For over a decade an increasing number of universities have encouraged graduates to submit their theses or dissertations in electronic format. In recent years, many universities have made this a requirement. Among the many reasons for this is the realization that graduate student research will be more accessible to a wider audience if it is available online. It is likely to be used more frequently than traditional paper theses or dissertations (Moxley 2001). Usage figures from early adopters of electronic submissions, such as Virginia Tech and West Virginia University (WVU), reveal the scale of the increase that can be achieved (Virginia Tech 2011; Hagen 2007).

Virginia Tech and WVU are among the leading universities that have sought to promote the concept of the production, storage and provision of theses and dissertations in electronic format. Much of the publicity for these efforts, and the practical means of accessing ETDs via a catalog, has been possible due to the creation of the Networked Digital Library Theses and Dissertations (NDLTD) [<http://www.ndltd.org>]. Operating at a global scale, the NDLTD takes account of international differences in terminology. (For example, the abbreviation 'ETD', accommodates both 'doctoral theses' / 'masters dissertations' and 'doctoral dissertations' / 'masters theses'). The NDLTD also supports annual conferences across the world and provides resources for university administrators, librarians, faculty, students, and the general public on its website. Despite these efforts, many faculty members and graduate students appear unaware of the wealth of

opportunities afforded by access to ETDs. Many are also unaware of the potential benefits that they can take advantage of, as authors, to publish their work via various ETD digital libraries.

There are currently various ways in which ETDs can be made available at no cost to users: for example, via portals maintained through partnership arrangements such as DART-Europe (<http://www.dart-europe.eu>) or Cybertesis.NET (<http://www.cybertesis.net/>), or through a national library such as the British Library's 'Electronic Theses Online Service' (EThOS) (<http://ethos.bl.uk>) or the National Library of Australia's 'Trove' repository (<http://trove.nla.gov.au>). Many universities are also making ETDs accessible online free of charge via institutional repositories (Copeland et al. 2005). This evolving culture of open access to ETDs co-exists with more longstanding subscription based services supplying ETDs for a fee, such as the 'ProQuest Dissertations & Theses Database'. The research reported in this paper focuses predominantly on experiences of open access services that are free of charge and likely to be used in Australia, New Zealand, the United Kingdom (U.K.) or the United States (U.S.). ETDs have the potential to radically change the nature and scope of doctoral dissemination and use of doctoral research (Macduff 2009) by improving access to the research results and by offering researchers the opportunity to use multimedia to express their research results in different ways.

The above benefits and opportunities are as applicable to nursing research as they are to other subject areas. ETDs are a valuable resource for nurse scholars worldwide (Goodfellow 2009). Electronic access to theses and dissertations can provide nurse researchers and students opportunities to examine documents that they might otherwise

not see. Information survives and knowledge thrives when new generations of scholars can access and incorporate the work of others into their own efforts. Access to an international network of ETDs could contribute to the dissemination and preservation of knowledge by facilitating its current and expansive use (Edminster and Moxley 2002).

According to Copeland (2008), evidence from around the world suggests that there is a high level of interest in ETDs and an increasing use of these resources. However, much of the available statistical information is general, rather than specific to nursing. Some university systems publish limited information about the number of times online theses and dissertation are accessed but there does not appear to have been any wide-scale systematic study of the extent to which nursing school graduates' ETDs are searched, retrieved, and then utilized by nurse scholars or others. In fact, little information about ETDs can be found in the nursing literature (Goodfellow 2004; Macduff 2009).

The reasons for the low use of ETDs within nursing are not yet known. As active scholars in the field, we have some formative ideas about possible influences. It is our belief that lack of understanding of the value of ETDs may contribute to lower utilization. Some universities allow public access to their ETD collections while others do not (Goodfellow 2009). We also believe that lack of knowledge of how to access, search, and retrieve ETDs may contribute to their under use in nursing. In light of these impressions, an initial international exploratory study was considered necessary to obtain information that would allow us to better understand the current situation and guide future attempts to address areas where there is need and potential for educational enhancement. To our knowledge, no such study has been undertaken until now.

Aims:

The primary aim of this study was to gain information in regard to the awareness and use of ETDs and ETD digital libraries amongst faculty, current graduate students, and alumni of graduate programs in nursing in Australia, New Zealand, the U.K. and the U.S. The secondary aim was to gain information on ETD usage in nursing that will provide the basis for developing further research and educational development work.

The research questions guiding this study are:

1. What is the nature and scope of current usage of ETDs and ETD digital libraries by nursing school faculty, current graduate students, and graduate student alumni?
2. What trends, if any, are apparent in knowledge and usage within these different groups and within different countries?
3. What benefits, if any, have ETD users/authors experienced, and what factors enabled these?
4. What difficulties, if any, have ETD users/authors experienced, and what factors have contributed to these?

Methods:**Design:**

A descriptive online survey design was used to investigate the awareness and use of ETDs and digital libraries in faculty, current graduate students, and alumni of graduate programs in nursing in Australia, New Zealand, the U.K. and the U.S.

Setting:

This study was conducted through a secure online data collection site called SurveyMonkey (<http://www.surveymonkey.com>). Thus, the setting varied from

participant to participant but the majority of participants are likely to have completed the survey from either their home, school or work computer.

Participants:

Purposeful sampling of specific schools of nursing was used to recruit and survey participants. The participants for this study consisted of faculty, current graduate students and alumni of graduate programs in nursing. For this study we focused on schools that appear to be in the vanguard of nursing ETD development, as manifested in ETD output and statutory submission requirements. The logic in this approach was that if there is use of ETDs and ETD digital libraries anywhere in nursing, it is likely to be found in these institutions. In order to obtain relevant international perspectives, we focused on four countries in the vanguard of English language ETD developments, namely: Australia, New Zealand, the U.K. and the U.S.

We targeted specific schools of nursing from each country based on the following criteria: 1) Having a graduate program (Masters and/or PhD) in nursing; 2) Requiring graduate students to submit their theses or dissertations in an electronic format; 3) English speaking; and, 4) Appearing to be in the vanguard of ETD developments in nursing as judged by ETD outputs in relevant databases.

Once approvals were obtained from the appropriate Institutional Review Boards and Ethics Committees, the research team (nurse researcher and librarian) from each country met to determine the best way to ascertain 20 vanguard schools of nursing in ETD development from their respective countries. Due to the relatively smaller populations of Australia and New Zealand, and their history of co-operation in regard to

ETD databases, the two countries were treated as one unit for sampling purposes; thus, the 20 vanguard institutions included universities from both countries.

The goal was to yield a sample large enough to reveal trends and provide an international perspective on nursing knowledge and use of ETDs and digital libraries. To our knowledge there are no existing standardized international criteria for identifying vanguard institutions in regard to nursing ETD developments. Accordingly we made a pragmatic decision that each country would base its selection primarily on ETD outputs in one “sentinel” database that appeared to be of most relevance for accessing full text ETDs free of charge. In the U.K. this was EThOS (the Electronic Theses Online Service provided by the British Library). For Australia and New Zealand, the Australian Digital Thesis repository information as housed on ARO (Australian Research Online) was used, while the transition to the TROVE database was being enacted. In the U.S. the sentinel database was the Networked Digital Library of Theses and Dissertations (NDLTD) Union Catalog, using the VTLIS Visualizer search tool, in conjunction with a search of WorldCat lists. These databases and associated web portals are all very much in the process of evolving and their functionality in terms of standardised searching varies considerably. Nevertheless, it was possible through these means and subsequent enquiries to identify for each country a list of 20 ostensible vanguard institutions that met our criteria. Consistency across study sites was maintained by using one standardized recruitment approach (email invitation) and by using one online data collection site (SurveyMonkey).

After the schools of nursing were identified, contact information was accessed via the Internet, and specific Deans or Directors were then contacted by email and then by

phone as needed. Communication included an explanation of the study, protection of human subjects' issues, and the link to the data collection site. Also, we requested their support in data collection by forwarding an email to their faculty, current graduate students, and alumni from their graduate program, for participation in the study.

After obtaining agreement to participate, we used a template to announce the study via an email distributed through the schools by their email communication channels. Email reminders to resend the study announcement were sent monthly for three months. A total of 26 Deans or Directors agreed. The numbers per country were as follows: Australia, six; New Zealand, one; the U.K., fourteen; and, the U.S., five. Data were collected from November 2010 through January 2011. A total of 209 individuals participated in this study.

Instrument Used for Data Collection:

The ETD Survey was generated by the researchers to ascertain information from faculty, current graduate students, and alumni of graduate programs in nursing on their knowledge and use of ETDs and ETD digital libraries. The survey is based on the literature and experiences of the researchers. The research team examined and redefined terminology as needed to account for differing usages across the four countries. A pilot study was conducted in Australia, New Zealand, the United Kingdom, and the United States to examine the ETD Survey for ease of use, time to complete, format and clarity of questions. A sample of 17 of the researchers' colleagues served as the participants. The pilot survey consisted of demographic questions, multiple choice questions, and several open ended questions that required participants to write a response. Following the results

of the pilot the open ended question items were modified to include a list from which participants could choose one or more responses, and a text box for comments.

The final version of the survey consists of two parts. Part I includes 11 questions pertaining to participant characteristics including age, role/position, country of origin, and year of graduation from graduate program. Part II of the survey includes 14 questions in regard to participants' knowledge and use of ETDs and ETD digital libraries. The survey was administered online via SurveyMonkey and took approximately 15-20 minutes to complete.

Procedures for Data Collection:

Participants were invited to participate voluntarily by responding to the email notice sent to them through their schools' email systems. A link to SurveyMonkey was included in the email for those who were interested in participating. Once potential participants clicked on the link, a cover letter/consent form further explained the study. Confidentiality of participants' responses and anonymity in study reporting was assured. Those who agreed to participate in the study were prompted to click on the link "I Agree" to indicate consent which activated the ETD survey. Once participants completed the survey, they were asked to click on the link "Submit." Participants were told that they could withdraw from the study at any time during the survey process by simply not submitting their completed survey. Participants were also offered the option of providing their contact information for a separate follow-up study to explore the author/user experiences through a structured interview.

Once data collection was complete, the participants' responses were downloaded into an Excel spread sheet. SurveyMonkey served as an honest broker and automatically

stripped the data of identifying IP addresses. The option of allowing multiple entries from the same computer was allowed to take account of the possibility of current graduate students using a shared laboratory computer. While this presented the possibility of duplicate submissions by the same participant, it was believed that the time required to complete the questionnaire minimized this possibility. Furthermore, the nature of the survey was such that there would be no obvious benefit to the respondent in submitting multiple responses. All study materials were stored electronically in a password protected storage system and all members of the research team had access to the data.

Analysis

STATA Data Analysis and Statistical Software 12 were used for data analysis. Numerical and visual descriptive statistics provided an overview of the total sample population, the subgroups of interest and the main responses of interest, namely: knowing how to access “ETDs in your institution’s digital library”, knowing how to access “ETDs in national or international digital libraries”, having “referenced your ETD in a publication”, and having included “your ETD on your curriculum vitae (CV) as an electronic publication.” Both descriptive and correlation statistics were used to answer the research questions. Chi-square tests were used to determine whether there were statistically significant differences between characteristics for each response of interest. Where data categories were very small (e.g. age 71-80; working or attending university in New Zealand) these were excluded from statistical tests.

Results

A total of 209 nurse scholars completed the survey. Females comprised 82% of the sample population, and 63% of the sample population were 40-59 years of age. For

the country of current school attendance or employment, 16% were working or attending university in Australia, 49% in the U.K., and 32% in the U.S.; 0.5% (one individual) in New Zealand, and 3% (n=6) reported that they did not work or attend university.

Bachelor degrees were reported for 22%; 44% reported Masters; and 28% reported PhD (6% reported other). Over half (62%) of the participants reported that they are currently conducting research and 94% said they had undertaken a literature search using electronic databases during the past year.

Descriptive and inferential statistics were used to answer Question One: "What is the nature and scope of current usage of ETDs and ETD digital libraries by nursing school faculty, current graduate students, and graduate student alumni?" and, Question Two: "What trends, if any, are apparent in knowledge and usage within these different groups and within different countries?" A total of 91 (44%) participants reported knowing how to access ETDs in their institutions' digital library but only 37 (18%) participants reported knowing how to access ETDs through a national or international digital library. Those in Australia were significantly more likely to report knowing how to access ETDs in their institutions' digital library ($p=.033$) and/or through a national or international digital library ($p=.037$) compared to those in the U.K. or the U.S. Those with a PhD (56%) were more likely to know how to access ETDs in their institutions' digital libraries than those with a Master's (44%) or Bachelor's degree (28%). Those currently conducting research (55%) were significantly more likely to report knowing how to access ETDs in the U.K. and the U.S. Those with a PhD (56%) were more likely to know how to access ETDs in their institutions' digital library ($p<.001$) and/or through a national or international digital library ($p<.001$) compared to those not currently

conducting research (24%). Only 27% of the participants had actually cited an ETD in a publication. Table 1 shows the percentage of participants who reported knowing how to access ETDs in their institutions' digital library and knowing how to access ETDs through a national or international digital library, by characteristics.

Of the 209 participants, 45% (n=95) had submitted or planned to submit their own theses or dissertations electronically through their universities. Twenty seven percent (n=56) had not planned an electronic submission and the survey question was not applicable for 28% (n=58) of the participants). Fifty nine participants had a PhD (and 91 had a Masters degree) as their highest qualification, yet only 14 people had referenced their own ETDs in a publication and only 14 had included their ETD on their CVs as an electronic publication. Those working or attending university in the U.K. (4%) were less likely to have included their ETDs on their CVs than those in the U.S. (11%) or Australia (9%). Table 2 shows, by characteristics, the percentage of participants who reported having referenced an ETD in a publication or included their ETDs on their CVs.

When asked, "Have you undertaken a literature search using electronic databases during the past year?" 94 % (n=196) of the participants answered yes. The Cumulative Index of Nursing and Allied Health Literature (CINAHL) and MEDLINE/PubMed were both used by 88% (n=183) of the participants; Google Scholar was used by 67% (n=140); Nursing@Ovid by 54% (n=113); ScienceDirect by 45% (n=94); PsycINFO by 44% (n=93); Google by 42% (n=87); Web of Science/Web of Knowledge by 33% (n=68); British Nursing Index by 30% (n=63); and, EMBASE by 28% (n=59).

Forty-five percent (n=93) of the participants reported that they had accessed or searched an ETD digital database. However, only 28% (n=59) of the participants had

done so, five times or less, during the past year. Of the ETD digital libraries generally searched, 21% (n=43) of the participants used ProQuest Dissertations and Theses database; 9% used EThOS (UK Electronic Theses Online Service) (n= 19), the Royal College of Nursing Steinberg Collection (n= 19) and the ADT (Australasian Digital Theses) database (n=18). This database ceased operation on 28 March 2011, and its data was harvested by ARO (Australian Research Online) while the TROVE database was being developed. Other sources such as the Networked Digital Library of Theses and Dissertations (NDTLD) Scirus ETD Search, NDTLD VTLS Visualizer, and DART-Europe were used by only a small percentage of participants (<5%).

In response to the survey question, "Have you ever used an ETD as resource for research or clinical practice?" 36% (n=76) of participants had used an ETD for research, while only 5% (n=10) had used an ETD for clinical practice. 13% (n=28) reported that they had used an ETD as a resource for both research and clinical practice.

Question Three: "What benefits, if any, have ETD users/authors experienced, and what factors enabled these?", was addressed by one specific question on the survey that asked what benefits, if any, have you had in using ETD digital libraries? Participants were able to choose as many options as applicable from a list and, if they desired, were allowed to include a comment. Forty-two percent (n=87) of the respondents indicated that free access to nursing research was a benefit, and 23% (n=49) indicated that a benefit was quick / 24 hour access to full text theses and dissertations. Interestingly, 30% (n=62) of the respondents selected the "No Benefits" option. Table 3 addresses the benefits, response percentage and response count.

In the same manner and format described above, Question Four: "What, if any, difficulties have ETD users/authors experienced, and what factors have contributed to these?" addressed one specific question on the survey. Participants were able to choose from a list of difficulties and also include a comment. Forty-five percent of the responses indicated that participants found it difficult to locate ETD digital libraries and 32% (n=67) indicated that they did not know how to search the databases effectively. In addition, almost 30% (n=62) of the respondents found it very frustrating when entries led not to full text documents but only to bibliographic details, abstracts or partial documents. Table 3 also presents the factors that have contributed to difficulties in use, with associated response rates.

Discussion

The results of this exploratory descriptive study provided us with answers to questions about ETD usage in nursing not previously addressed in the literature (Goodfellow 2004; Macduff 2009). Results showed that, even in ostensible vanguard institutions, the majority of faculty, graduate students and alumni of nursing in Australia, the U.K. and the U.S. have little knowledge in regard to accessing ETD digital libraries and few have used ETDs to their fullest potential. Although evidence from around the world indicates a high level of interest and increasing use of ETDs, this unfortunately may not apply to nursing scholars.

The survey revealed that less than half of the nursing faculty, PhD students and PhD alumni who responded knew how to access an ETD from their institutions' digital libraries and less than a quarter knew how to do so through a relevant national or international database. Those who are currently engaged in conducting research appeared

to be more familiar than others with various aspects of ETD use and expressed appreciation for key benefits such as free, quick, 24 hour access. Interestingly, however, very few participants had ever used an ETD as a resource for clinical practice. Although nearly half of the participants had reported accessing or searching an ETD digital database, less than one third had done so more than five times during the past year. Less than 10% of the participants had ever accessed or searched ETD digital libraries other than ProQuest Theses and Dissertations database, and only 21% of participants reported using ProQuest. This does not appear to reflect a reluctance to use online information resources, since most participants (94%) utilized other electronic databases to search for research reports (i.e. databases that do not include ETDs). Rather it appears to reflect a lack of awareness of the value of this particular type of resource. This is evidenced by the few participants who reported having cited an ETD in a publication and the few who reported that they had referenced their ETDs on their CVs. This view corresponds to Goodfellow's perusal of reference lists in nursing research journals and preliminary conclusion that ETDs are underutilized in nursing (2009). These findings are important, particularly since the group surveyed represents those identified as most likely, within the nursing community, to have an awareness of ETDs. The findings indicate the need for educational enhancement.

The survey results indicate that under use of ETDs and ETD digital libraries can be attributed to a number of factors including a lack of awareness and understanding of the value of theses and dissertations and the means of accessing them. A significant number of respondents indicated that they found it frustrating when they were not able to retrieve or download full text ETDs and instead were led to just bibliographic details or

abstracts. Accessing ETD digital libraries has been problematic and is an issue addressed in both the library science literature as well as the nursing literature (Copeland and Penman 2004; Macduff 2009). The results of this survey indicate that access to full text dissertations is still inadequate: whether due to practical difficulties or lack of knowledge. Clearly, both nurse scholars and librarians need to do more to ensure that, in future, doctoral research results are publicized more and made available more easily. At present, nurse scholars living in developing countries that do not have access to the Internet, or have only intermittent access, will still be at a disadvantage compared to some of their colleagues elsewhere. However, services such as EthOS will supply hard copies of these for a small cost and Internet access has become more widely accessible through the use of Internet Cafes at a minimal cost per hour (Goodfellow 2009). Moreover, mobile phone technology is helping to make online resources more accessible to users. Hopefully, nurses from all countries will soon be able to take advantage of ETDs if they are aware that they exist and if ETDs are made more easily available. The results from the current study of schools that appeared to be in the vanguard of nursing ETD development (as manifested in ETD output and statutory submission requirements) in Australia, New Zealand, the U.K. and the U.S. cannot be definitively generalized to all faculty, graduate students and alumni in nursing in these countries. Moreover, the study focused only on ETDs written in English and emanating from a few prominent westernized countries. As the general ETD literature shows (Bailey 2011), many other countries are very active in developing ETDs so there may be much value in conducting a larger international nursing ETD study involving a more culturally diverse sample.

The current study, however, has provided us with valuable baseline data on the knowledge and use of ETDs and ETD digital libraries in nursing. The information gained has set the stage for future research and development in the field of nursing and ETDs. Future research is needed to further understand the experiences and needs of authors of material in ETD digital libraries and those who access this material. In addition, an online educational intervention is needed to promote the use of ETDs and ETD digital libraries as a valuable resource for researchers and others who want to stay current in the science of nursing including nurses in practice and midwives. Nurses in academia as well as in non-academic settings need to be made aware of how to access ETDs from digital libraries, most of which are free of charge. The survey itself can be replicated for use with other disciplines or with nursing schools in other areas for comparative studies. It may also be used with the same institutions for the purpose of longitudinal studies.

Conclusions:

To our knowledge, this is the first international study of its kind. The results show that the majority of nursing faculty, students and alumni have little awareness and understanding of how to access ETD digital libraries and few have used ETDs to their fullest potential. The information gained in this study will be used to develop further research and educational developmental work. A future study will seek to gain an in-depth understanding of the experiences and needs of authors of material in ETD digital libraries, and those who access this material. As Macduff (2008a and 2008b) points out, there are both technical and conceptual issues in this area that require further explanation, engagement and development. A long term educational goal will be to obtain the information necessary to develop an online educational intervention to promote the use of

ETDs and ETD digital libraries, as a valuable resource for researchers and others who want to stay abreast of current developments in the science of nursing.

References

- Bailey, C. (2011) Institutional repository and ETD Bibliography 2011. *Digital Scholarship*, Houston, Texas. Available. <http://www.digital-scholarship.org/> (accessed 27 October 2011).
- Copeland, S. (2008) Electronic theses and dissertations: promoting 'hidden' research. *Policy Futures in Education*, **6** (1), 87-96. Available. doi: 10.2304/pfie.2008.6.1.87 (accessed 27 October 2011).
- Copeland, S. & Penman A. (2004) The development and promotion of electronic theses and dissertations (ETDs) within the UK. *New Review of Information Networking*, **10** (1), 19-32. Available <http://hdl.handle.net/10059/46> (accessed 27 October 2011).
- Copeland, S., Penman A., & Milne, R. (2005) Electronic theses: the turning point. *Program: Electronic Library and Information Systems*, **39** (3), 185-197.
- Edminster, J. & Moxley, J. (2002) Graduate education and the evolving genre of electronic theses and dissertations. *Computers and Composition*, **19** (1), 80-104.
- Goodfellow, L.M. (2009) Electronic theses and dissertations: a review of this valuable resource for nurse scholars worldwide. *International Nursing Review*, **56** (2), 159-65.
- Goodfellow, L.M. (2004) Electronic Theses and Dissertations. In J. Fitzpatrick & K. Montgomery (Eds), *Internet for Nursing Research: A Guide to Strategies, Skills, and Resources*, Springer.
- Hagen, J. (2007) Building effective discovery tools for academic promotion and tenure evidence: the added value of ETD and Institutional Repository metadata, citations and access. Morgantown: West Virginia Libraries, USA. Available.

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.105.1089&rep=rep1&type=pdf>,
(accessed 28 October 2011).

Macduff, C. (2008a) Think out loud: how to get your dissertation or thesis published online, *Nursing Standard*, **22** (21), 62-63.

Macduff, C. (2008b) Editorial: The PhD thesis as a virtual guest house. *Journal of Clinical Nursing*, **17**, 2381-2383. Available. doi: 10.1111/j.1365-2702.2007.02256.x.

Macduff, C. (2009) An evaluation of the process and initial impact of disseminating a nursing e-thesis. *Journal of Advanced Nursing*, **65** (5), 1010-1018. Available. doi: 10.1111/j.1365-2648.2008.04937.x.

Moxley, J. M. (2001) Universities should require electronic theses and dissertations. *Educause Quarterly*, **3**, 61-63. Available. <http://net.educause.edu/ir/library/pdf/eqm0139.pdf> , (accessed 25 October 2011).

Virginia Tech Digital Library and Archives. (2011) ETD Statistics and information. Available. <http://scholar.lib.vt.edu/theses/data/> (accessed 27 October 2011).

Table 1. By Characteristics, Percent of Participants who Know How to Access ETDs

	Know how to access ETDs in your institution's Digital Library		Know how to access ETDs through a national or international Digital Library
	N	Percent	Percent
Gender			
Male	37	40	24
Female	172	44	16
Age			
21-30	27	22	22
31-40	38	53	18
41-50	63	52	19
51-60	69	41	16
61-70	11	36	9
71-80	1	0	0
Working or attending school in			
Australia	33	64**	33**
New Zealand	1	0	100
United Kingdom	103	38	16
United States	66	47	14
Highest Degree			
Bachelors	46	28	13
Masters	91	44	13
PhD	59	56*	27
Other	13	38	23
Affiliation			
Nursing Faculty	99	49	19
MS Student	14	14	0
PhD Student	54	48	19
MS Alumnus	6	17	17
PhD Alumnus	11	45	27
Other	25	32	16
Conducting Research			
Yes	130	55***	25***
No	79	24	5

Note. *= P=.04; ** = P=.03; *** = P<.001. Because there was only one person reporting from New Zealand, New Zealand was not statistically compared to the other countries.

Table 2. By Characteristics, Percent of Participants who Referenced ETDs in Publications or Included their ETD on CV

	Referenced ETD in Publication		Included ETD on CV
	N	Percent (%)	Percent (%)
Gender			
Male	37	0	5
Female	172	8	7
Age			
21-30	27	0	7
31-40	38	5	3
41-50	63	6	6
51-60	69	12	9
61-70	11	0	9
71-80	1	0	0
Working or attending school in			
Australia	33	9	3
New Zealand	1	0	100
United Kingdom	103	4	2
United States	66	11	15**
Highest Degree			
Bachelors	46	0	4
Masters	91	4	4
PhD	59	17**	14
Other	13	0	0
Affiliation			
Nursing Faculty	99	8	6
MS Student	14	0	0
PhD Student	54	2	7
MS Alumnus	6	0	17
PhD Alumnus	11	27*	27*
Other	25	8	0
Conducting Research			
Yes	130	8	8
No	79	5	5

Note. * = $P=.046$; ** = $P=.002$. Because there was only one person reporting from New Zealand, New Zealand was not statistically compared to the other countries.

Table 3. What benefits and difficulties have you had in using ETD digital libraries? (N=209)

Menu Options	Response Percent (%)	Response Count (n)
Benefits		
Free access to nursing research	41.6	87
Serendipity - find relevant research from other disciplines	17.2	36
View more ETDs than paper / microfilm versions of theses and dissertations since there are no 'Interlibrary loan' costs	13.4%	28
Easy to browse ETD databases for potentially useful resources	18.2	38
Easy to find specific theses and dissertations and information within them	15.8	33
Quick, 24 hour access to full text theses and dissertations	23.4	49
Enables me to download full text that supports my research or clinical practice	20.6	43
Enables me to see research output conveyed in multimedia format (video clips, etc.)	1.9	4
No benefits	29.7	62
Difficulties		
Do not know where to find the ETD libraries	45.0	94
Do not know how to search ETD portals and databases effectively	32.1	67
Confusing as each database is so different with different search functionality	22.0	46
ETD databases do not contain items relevant to my research or clinical practice	3.8	8
Lack of full text - frustration when entries lead to only bibliographic details, abstract or partial content	29.7	62
Can identify relevant ETDs but have difficulty downloading them	4.8	10
Deterred by length of time to download large multimedia files	6.7	14
Have limited Internet access	1.4	3
No difficulties	12.0	25

Note. Participants were asked to select as many benefits and difficulties as applicable from a pull down menu of options.