"I tend to get real books!"

An overview of the use and perceptions of e-books at

Queen's University Belfast

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A dissertation submitted to the University of Wales in partial fulfilment of the requirements for the degree of Magister in Scientia Economica (MSc) under Alternative Regulations

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2010

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Abstract

The purpose of this study is to investigate the use of and attitudes towards subscribed e-book resources at Queen's University Belfast, Northern Ireland. The research aimed to determine the quantity of e-book usage; discover patterns of use over a given period; investigate motivation for use of e-books, and factors inhibiting the use of the resource.

An overview of e-book use was achieved by the quantitative analysis of COUNTER statistics from the various e-book platforms over a period from September 2009 to June 2010. The metrics evaluated included the number of successful title requests by month and title and total searches and sessions by month and service. Trends of use were identified and the statistical data was presented in table and graph format. In order to quantify the statistical data a print questionnaire was administered to library users at the McClay Library. The questionnaire was primarily comprised of Likert style questions and an open text comment box. A total of 129 questionnaires were returned and 112 were deemed suitable for analysis. The questionnaire results were analysed by entering the data into a Survey Monkey Professional account.

The study found that e-book usage was diverse among the different e-book platforms. Generally the statistics suggest that various e-book platforms are well used, however the use of each platform fluctuates. The most intensely used platforms were those providing access to a large volume of e-books. The findings of the questionnaire showed that the majority of respondents (59.8 percent) use e-books provided by the library at Queen's University Belfast. The preferred means for finding e-book resources was QCat, the library catalogue. The results of the Likert questions and open text comments offer an insight into user perceptions regarding e-books at the university.

The outcomes of the research demonstrate the value of e-books and allow for the creation of strategies designed to increase the uptake and use of e-book resources. The research also contributes to the ongoing exploration into how e-books are being used in academic libraries. The study summarises recommendations for further research.

Declaration

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

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List of abbreviations

- CFF   Critical Flicker Fusion
- COUNTER   Counting Online Usage of Networked Electronic Information Resources
- CRT   Cathode Ray Tube
- DRM   Digital Rights Management
- EECO   Early English Collections Online
- EEBO   Early English Books Online
- JISC   Joint Information Systems Committee
- LCD   Liquid Crystal Display
- LMS   Library Management System
- NeBO   National e-Book Observatory Project
- RRU   Royal Roads University
- UWE   University of West of England
- VLE   Virtual Learning Environment

Acknowledgements

Chapter 1: Introduction

1.1 Introduction

In 2006 Williams and Best state that "[i]n the electronic era libraries continually seek to justify expenditure on electronic resources" (p.474). This statement continues to have a distinct resonance in the current economic climate and in a period of intense retrenchment the pressure is upon library staff to continually justify expenditure on library resources. This dissertation aims to explore the use of and attitudes towards e-books amongst library users at Queen's University Belfast, in order to evaluate the relevance of the resource to library users and to potentially validate existing and future expenditure on e-books. Queen's University Belfast is one of the primary universities in the UK and its prestige and size makes it an excellent case study as it will have ramifications for and comparative outcomes with other universities and institutions. The decision to conduct this particular research was taken because a specific, in-depth study of its kind has not been previously undertaken by the library at Queen's University Belfast. The researcher was also aware of the need for rationalisation within University library expenditure and wished to highlight the usage of the resource. The findings of the study may contribute to further collection development planning and assist in devising measures to raise awareness and increase the uptake of e-books.

Queen's University Belfast dates back to 1845 and is now currently one of the top twenty universities in the United Kingdom and Ireland both in terms of teaching and research. Queen's University is part of the Russell Group, the UK equivalent of the US

"Ivy League", and supports over 24,000 students and 3,000 staff. The University estate encompasses more than 300 buildings and is served by several libraries: the McClay Library, Medical Library, Biomedical Library, Antrim Healthcare Library, Craigavon Healthcare Library, HSC Trust Libraries and Agri-Food and Biosciences Institute Libraries (AFBI Headquarters, Veterinary Sciences Division, Loughall and Hillsborough).

1.2 E-book collections at Queens University Belfast

1.2.1 Background to the collection

Queen's University Libraries strive "to provide access to high quality information services and resources". (Information Services, Resource Development and Management Policy, Sept 2006) According to the Resource Development and Management Policy the Library acquires resources in accordance with the University's learning, teaching and research needs. The policy also states that electronic information resources are covered by funding budgets. The policy is intended to be flexible to take into account the changing needs of users and research interests.

The process of acquiring e-books for the library collection at Queen's University Belfast has been underway since early 2000 when 100 "slots", approximately 80-90 titles were acquired from Safari Books Online, an e-book platform specialising in computer science and business and economics titles. The School of Computer Science were eager to acquire the e-titles on the Safari platform as the Department was purchasing a number of books from O'Reilly Media, a major publisher of technology books, at that time. From

1st November 2002 users had access to 44 mechanical engineering titles from the Knovel, an e-book provider offering science and engineering reference textbooks and handbooks. This was a move initiated by both the School of Mechanical Engineering and library staff.

An e-book planning focus group was initiated in 2006 to further develop the e-book collection. The aims of this group were to: gauge users' attitudes to current e-book provision; evaluate existing e-book resources and investigate future options; consider and compare e-book provision with print counterparts; examine and offer improvements for the management of e-books; and conduct a critical review of the e-book resources available on the market (Wildy, 2007). The group comprised of a subject librarian from each subject team, a cataloguer and a member of acquisitions staff and met at several intervals throughout the year. The work of the group culminated in the production of an 'E-books report and recommendations' paper in August 2007.

Following the publication of the report a number of decisions were made, based on the e-book planning focus group's recommendations. The decisions were highly influenced by ongoing Joint Information Systems Committee (JISC) research. JISC had previously commissioned a number of reports in 2002 and 2003 respectively including an e-book mapping exercise, a report on advocating the uptake of e-books in UK academic libraries undertaken by the Gold Leaf Consultancy, the Education for Change Ltd and Stirling University review of the market framework for e-books and an evaluation into the

use of free e-books in UK academic libraries conducted by staff from the Arts and Humanities Data Service for Literature, Language and Linguistics at the OTA in Oxford (Tedd, 2005). The publication of the report of the e-book planning focus group's sparked a major e-books initiative within Queen's library service. The recommendations of the Queen's e-book group included: subscription to the ebrary platform; mixed provision, including subscription to smaller e-book resources to meet the needs of particular subject areas and allowances to purchase individual titles in addition to e-book packages. All acquired e-book titles were required to have MARC (MAchine Readable Cataloguing) records to enable integration into the library catalogue and an e-books web page was created to advertise the resource. User education programmes were instigated to promote e-book resources. The endorsement of e-books was to be flexible to allow for the adaptation of an e-book collection management policy which would be developed in accordance with library users' needs.

1.2.2. Current e-book collection

E-book resources at Queen's libraries are intended to be multi-disciplinary and cater for users teaching and research needs in diverse subject areas. Queen's University libraries subscribe to the following e-book platforms:

- ACLS Humanities E-books: e-books from the American Council of Learned Societies in conjunction with 20 learned societies
- Credo Reference: quick reference books
- Early English Books Online (EEBO): e-books whose original texts were published between 1473 and 1700

- Ebrary provides access to multi-disciplinary books

- Eighteenth Century Collections Online (ECCO): full text versions of 18th century books, pamphlets and ephemera

- Knovel: science and engineering books

- MyiLibrary: teaching and research titles from various publishers

- Safari Books: Online Programming and Information Technology books

- Shakespeare Collection: Arden Shakespeare editions of the full works and other contemporary works

- Wiley InterScience: science books published by Wiley

Web pages devoted to advertising e-books are included on the library website. The pages can be located by scrolling down the navigation column on the left hand side of the library home page and clicking on Online Resources (appendix i). The e-book resources are found under the 'E-books' heading. According to the information on the library web page all e-book titles acquired by the library are integrated into the library catalogue with the exception of the early English and 18th Century titles available from EEBO, ECCO and Shakespeare Collection. A brief description of each e-book database is included on the web page. Instructions can also be found on the e-books pages to assist users in finding required titles when searching on the library catalogue. A further link is included connecting to an A-Z list of e-books; however ebrary titles are excluded from this. The e-book web pages also promote Google Book Search as a means to finding additional full text e-books.

The library at Queen's University also provides a Readings Online service. This gives users registered on a particular module access to scanned journal articles or chapters from print items and electronic journal articles or e-book chapters via Metalib, a consolidated search environment for remote information resources (http://www.exlibrisgroup.com/category/MetaLibOverview). These articles and chapters are relevant to module coursework and feature extensively on recommended reading lists. The Readings Online service has the capacity to actively endorse e-books since the Reading Online project actively provides links to relevant e-book chapters under the module codes on Queen's Online.

1.3 Purpose of the research

The project aims to investigate the usage of and perspectives towards e-books among library users at Queen's University. The exploration of e-book use focuses on the e-books subscribed to by Queen's University Library rather than e-books in general.

The research carried out will be of great benefit to the library, and ultimately to the library users. The systematic review and evaluation of resources is essential, particularly in the present economic downturn, as libraries are faced with reduced budgets and deficits.

> "In order to strategically realign the university's priorities and resources, there has been an institution-wide call for more thorough assessment and accountability" (Sprague and Hunter 2008, p.150).

It is important to understand the value of e-book resources to the library's patrons and essential to devote time to evaluate existing resources. The findings of the study will assist with the development of a collection management policy pertinent to users' teaching and research needs and aid the formulation and implementation of procedures and methods to increase awareness and usage of e-books, making them a more economically viable option.

The study is indispensable in continuing research within the field of e-books and in understanding how libraries and their users use e-books. Furthermore it is necessary to share the research in order to improve the acquisition, development and promotion of e-book resources within academic libraries (Kimball, Ives and Jackson 2009; Sprague and Hunter 2008). Libraries need to know how their users perceive and use e-books in order to get the most from them.

1.4 Research aim and objectives

1.4.1 Research aim

As outlined above the aim here is to gain an insight into the use of and the attitudes towards e-books at Queen's University Belfast a study which has not previously been carried out by the library. The research contained in the study will benefit the library acquisitions department, subject librarians and e-book vendors.

1.4.2 Research objectives

- Measure level of use of e-books amongst library users at Queen's University

- Evaluate e-book usage by analysing e-book vendor generated statistics

- Identify patterns of use from the vendor statistics in a given period

- Investigate how e-books are being used

- Assess the value of e-books to library users

- Ascertain reasons why e-books are not being used

- Assist with the collection development planning process

- Continue the ongoing research into e-books and develop a greater understanding of how e-books are being used in academic libraries

1.5 Research structure

The research begins with a review of relevant e-book research. The following chapter presents and considers the methodology employed to investigate the use of e-books in this study. The results and findings of the exploratory study are then examined and discussed in relation to published research on e-books. The concluding chapter summarises the key outcomes of the study with relevance to Queen's University Belfast and makes possible recommendations for future evaluation and research.

Chapter 2: Literature Review

2.1 Introduction

The rise and fall of e-books has undoubtedly been a common topic within information studies research, particularly over the past ten years. In spite of articles extolling the virtues of e-books and forecasts of the demise of printed texts, information science commentators have claimed that the uptake of e-books has been in a state of flux and that e-book trends have failed to adhere to previous predictions (Connaway and Wicht 2007; Joint 2009).

The present resurgence in e-book research is perhaps due to the outcome of the Joint Information Systems Committee (JISC) National e-books Observatory Project (NeBO) being published in late 2009 and the documentation emerging relating to e-reader technology, the "killer Kindle" (Medeiros, 2009). The subject of e-books has also permeated into the popular press with recent reports that bestselling novelist, the late Stieg Larsson became the first member of the 'Kindle Million Club', the first author to sell one million e-books on Amazon, (http://www.guardian.co.uk/books/2010/jul/28/stieg-larsson-1m-e-books-amazon). This topical commentary on e-books strengthens the argument that the popularity and mainstream acceptance of e-books is increasing again.

This chapter provides a thematic review of the literature on e-books in academic libraries. It firstly provides an indication of the search structure when sourcing material

on e-books and then proceeds to provide a brief definition of e-books, defining what constitutes an e-book in relation to the current study. The chapter then goes on to identify themes arising in e-book research, which will later be developed in relation to the findings of the current dissertation study.

2.2 Literature search methodology

2.2.1. General

There is currently an abundance of literature on e-books ranging from peer-reviewed journals, books and articles available on the web. The search has been limited to those articles and books which have been cited by other authors or are from peer reviewed and edited sources. Other writings on e-books found in profusion on blogs and wikis online have helped to stimulate interest and thoughts on the subject. The date range of the search has been limited to articles and items dating back to the year 2000 to materials published more recently. The search has focused on e-books in academic university and higher education libraries since this is directly relevant to this particular research project. Other comparative aspects such as the surveying of users and the analysis of e-book statistics were also sought in other research material.

2.2.2. Search terms

The search terms used were a combination of 'e-book' and 'academic libraries' or 'universit*' (which included truncation in order to retrieve all possible results) or 'higher education'. Other variants of the term 'e-book' including 'ebook' and 'electronic book'

were also used considering the deviations in spelling throughout e-book literature. Boolean logic was used to link the search words. The search terms were usually entered into the subject fields of the databases when searching, in order to retrieve the maximum number of results.

2.2.3. Search tools

Searches were performed on a number of different sources. The Voyager OPAC at Aberystwyth University, QCat OPAC at Queen's University Belfast and the British Library Integrated Catalogue were all consulted. The thesis list hosted on the DSM1416: Dissertation section of the DIS Moodle site was also reviewed. The main databases used to retrieve research materials include Library and Information Science Abstracts (LISA); Library and Information Science and Technology Abstracts (LISTA) and Web of Science. PsychINFO, a psychology database was also consulted to explore articles relating to e-books and cognitive processes. A number of searches were also carried out using the Cross Search function both on Aberystwyth's elibrary interface and Queen's University's QSearch function. Information Automation Limited (IAL) proved to be an excellent resource since it produces an up-to-date bibliography of publications on e-books. Full text articles were acquired from Emerald, EBSCO, Science Direct, Elsevier, Ariadne, First Monday, D-lib magazine, Information Outlook, Google Scholar and Google. Materials deemed of interest but unavailable through Aberystwyth's University or Queen's University's libraries were requested from the British Library through the Inter Library Loans scheme.

2.3 What is an e-book?

McLuckie (2005) maintains that an e-book can refer to an e-reader device "a piece of hardware, a handheld e-book device created specifically for this purpose, on which to read the digital text" or, on the other hand, "electronic texts which are read on a PC, usually via the internet" (92). Feather and Sturges (1997) describe e-books as texts "analogous to a book that is in digital form to be displayed on a computer screen" (p.130). The frequently asked question pages on the e-books web page on Queen's University Library's website defines e-books as;

> "digital versions of print titles that you can read onscreen or run off pages on your printer"

(http://www.qub.ac.uk/directorates/InformationServices/TheLibrary/OnlineResources/Ele ctronicResourcesHelp/ElectronicBooksFAQ/).

For the purpose of this dissertation study the term e-books refers to digital books, which can be textbooks, reference books and digitised versions of out of print books, comparable to the print version delivered through the internet. The e-books in question are university subscribed resources offered by different e-book aggregators hosted on a variety of vendor platforms.

2.4 Levels of awareness

An overriding theme in the study of e-books is awareness and usage of the resource. Armstrong and Lonsdale's research in the e-book Mapping Exercise (2003) which

explored challenges surrounding managing e-book collections concluded that while there were positive attitudes towards e-books, widespread promotion was needed to increase awareness and uptake. In the same way, the recommendations following the study on the promotion of e-books by the Gold Leaf consultancy suggested that e-book integration into reading lists and library catalogues was essential to heighten awareness and increase uptake of the resource (Dillon 2001; Bennett 2003; Bennett and Landoni 2005). Rao (2003) also maintains that the ability to incorporate e-books into library catalogue is inextricably linked to the increased use of the resource (Ballard 2000). Lonsdale and Armstrong (2010) state that promotional methods should be incorporated into the strategic planning process and that students, staff and e-book aggregators should all play a role in the advocacy of e-books.

Anuradha and Usha (2006) discovered that while the level of e-book use at the Indian Institute of Science was very low, students were more inclined to use e-books than faculty members. Bierman, Ortega and Rupp-Serrano (2010) conducted an online survey followed by individual, face-to-face interviews amongst departmental staff in pure and applied sciences at the University of Oklahoma (OU). The results of the study showed that the eleven participants were familiar with online literature and made frequent use of electronic journals. However only four out of eleven had prior experience using e-books and nine out of eleven did not use e-books for instruction. Only 2 of the 11 participants recommended e-books for course reading and integrated them within virtual learning environments.

Levine-Clark (2006) found that while half of those surveyed (n= 2,067) at the University of Denver campus used e-books, their ratio of use was low. Levels of e-book awareness were at 59 percent. Abdullah and Gibb (2008) first study of students' attitudes towards e-books at the University of Strathclyde indicate that while students were familiar with the term e-book the majority of respondents (57 percent of 1,372 responses) were not aware the resource was available through the library (ebrary 2008a). Similarly 41 percent of respondents (n=1,547) indicated that they did not use e-books in Shelburne's (2009) large scale survey investigating e-book usage amongst students (undergraduate, graduate and professional), faculty members and academic staff at the University of Illinois. The primary reason given for non-use of e-books amongst participants was failure to discover the resource. In the same way Briddon, Chelin, Ince, Sleat and Williams (2009) found that 62 percent of students and academic staff at the University of West of England (UWE) who responded (n=845) used e-books; this figure is comparative with the findings of the JISC National E-books Observatory Project (64 percent of 14,095 respondents). The reason cited as the biggest factor as to why they do not use e-books was lack of awareness of the resource.

2.5 Perceived advantages and disadvantages of e-books

The perceived advantages and disadvantages of e-books have been discussed extensively in e-book questionnaire survey studies (ebrary 2008a; ebrary 2008b; Rowlands and Nicholas 2008; Nicholas et al. 2008; and Chu 2003). The benefits of e-books range from accessibility, navigation features to financial savings whereas the negative aspects include the difficulties of reading on screen, technological issues,

licensing models and a tendency to prefer traditional printed texts. It remains to be seen which advantages can be exploited more fully, which preconceptions relating to the shortcomings of e-books can be dispelled and which pitfalls can be overcome.

The fact that e-books can be accessed remotely with 24/ 7 availability and are beyond the confines of library opening hours are major advantages to those using the resource. Briddon et al.'s (2009) study at UWE discovered '24/ 7 availability' was the primary reason for using e-books with 88 percent of respondents (*n*=845) citing this as the primary benefit. The reasons 'instant online access' and 'no visit to the library was necessary' received 77 percent and 68 percent of the vote respectively in the UWE survey. According to Appleton's (2005) study at the Faculty of Health within Edge Hill College of Higher Education Liverpool, students on midwifery courses who were balancing the demands of domestic life with their studies found 'home access' particularly convenient (p.248)**.** Tedd (2005) maintains that e-books are also useful for part time and distance learning students who cannot gain every day access to the physical building of the library. Chu (2003) found that anytime access and the search-ability of e-books were the two most popular reasons for e-book use. Bierman, Ortega and Rupp-Serrano's (2010) participants also cited the 24/ 7 desktop access as one of the top advantages of e-books (p.77).

According to Bierman et al.'s (2010) study other positive features of e-books discussed include full-text search functionality, savings in physical space within the library, cost

savings on purchasing multiple copies of print textbooks, reduction in printed texts resulting in conservation benefits. In the same way Shelburne's (2009) study showed that advantages to e-books included responses such as instant desktop access (27 percent), ability to search using keywords (25 percent), access remotely (17 percent), portability (15 percent) and the fact they are environmentally sound (7 percent). Rowlands, Nicholas, Jamali and Huntington (2008) found that participants at University College London (n=1818) rated e-books highly for several reasons including: ease of copying, currency, space requirements, 24/7 accessibility, convenience, ease of navigation print for ease of reading, ease of marking and ease of annotation.

An additional benefit attached to e-book resources is savings in cost. Rao (2003) upholds the notion that the publication and distribution of e-books is considerably lower than the mass printing of printed text books, an opinion also endorsed by Hayes (2000) and Long (2003). This can be linked to savings in financial budgets which can have major implications for library expenditure. A major disadvantage to replacing printed books with equivalent e-books is the lack of comparable titles. Pomerantz (2010) determined whether e-book aggregator packages would be suitable to replace or supplement the existing nursing and business print collection at Adelphi University Libraries. The author concludes that there the e-book aggregators' offerings do not correlate closely enough with the library's acquisition requirements. Medeiros (2009) recommends that library collecting policies adopt e-book acquisitions as a supplementary resource rather than a direct replacement. Medeiros is highly critical of Cushing Academy's decision to migrate its library collection to a solely electronic

platform. Medeiros like Pomerantz highlights the fact many printed textbooks do not have e-book equivalents and maintains that only a small portion of Cushing's library collection of 20,000 books will fit on an e-reader device.

Carlock and Perry's (2008) qualitative study of faculty experiences with e-books outline problems such as issues with technology and allegations that the process of reading e-books was tedious and time-consuming. The disadvantages listed in Shelburne's study include navigation issues, difficulties locating materials and searching in general, Digital Rights Management concerns and problems with technology and internet access. Joint (2009) maintains that difficulties arise with e-book user education since each e-book vendor offers a unique interface with Henke (2003) stating that e-books lack the appeal of the common e-journal PDF platform. Hodges, Preston and Hamilton (2010) call for greater standardization amongst e-book publishing platforms. Chu (2003) outlines problems such as the suitability of bibliographic data for library use, appropriateness of licensing for library requirements and the limited rights of resale. Challenges also exist in managing e-book collections and sustaining different purchasing models and maintaining cataloguing and metadata standards (Armstrong and Lonsdale 2003).

The disadvantages of e-books also relate to issues such as the unsuitability of reading online for long periods, the problematic nature of the "ergonomics of desktop reading" and the inability to "thumb-through" an electronic text (Bierman, Ortega and Rupp-Serrano, 2010, p.78). The response of Shelburne's (2009) study reiterate the problems

experienced by Bierman's *et al.*'s (2010) participants with 33 percent of those partaking (*n*=11) citing the difficulty of reading text on screen as a major disadvantage. The partiality for printed books may be related to the appeal of the book as a tangible object (Briddon et al. 2010; Gregory 2008). Gregory (2008) maintains students' preference for printed texts is related to the "human love of the book as a cuddle object [which] remains quite strong in the digital age" (p.270). Library users' predilection for printed books over their e-book counterparts is discussed in greater detail in the following section of the chapter.

2.5.1 Preference for print

A recurrent research outcome in studies evaluating attitudes to e-books has revealed that the majority of users prefer reading print books as opposed to their electronic counterparts. The results of Langston's study at the California State University (2003) indicated that 62 percent of respondents (*n*=118) preferred printed books. Despite this, attitudes towards e-books were positive with a growing acceptance towards the resource.

Cox (2004) surveyed and discovered that 63 percent of respondents (*n*=186) disagreed that e-books were easier to read than print texts. Levine-Clark's (2006) survey indicated than over 60 percent of 2,067 respondents would chose a print copy over the e-version. Walton (2007) conducted a survey at Southwest Baptist University (SBU) and found that participants (students, staff and faculty, *n*=204) indicated a preference for print books for

conducting research. Likewise ebrary (2007) discovered that 79 percent of respondents (*n*=906) prefer print when reading a whole book or large sections of text. Rowlands and Nicholas (2008) survey of 1818 staff and students at University College London preferred print for ease of reading.

The preference for print may be partially explained by the difficulty experienced by users when reading from the screen. Kang, Wang and Lin (2008) evaluate the usability of e-books in an experiment that contrasts the differences between reading an e-book and a print book. The study documents responses including reading performance and critical flicker fusion (CFF). The authors conclude that reading online induces a higher rate of eye fatigue than conventional reading from printed text. The study showed that reading from a print book "generated a higher level of reading performance than reading an E-book" (p.49). Sottong (2008) is particularly critical of reading text online. He maintains that reading from CRT (Cathode Ray Tube) and LCD (Liquid Crystal Display) has a number of associated problems including resolution, contrast, flicker and glare. According to Sottong reading linear text on screen is not conducive to study with the result that large amount of text on screen is ignored. Sottong also maintains that users have a tendency to print from e-books so that text can be read in the traditional manner. Likewise eyestrain experienced by those reading e-books is cited as a major disadvantage in several other e-book studies (Shelburne 2009; Levine-Clark 2006; Chu 2003). Liu (2005) maintains that reading from a PC sustains a nonlinear type of reading behaviour. Liu has found that browsing, scanning and keyword spotting are increasing whereas patterns of reading behaviour are veering away from "in-depth and

concentrated reading" (p.707). Liu's study concluded that 89.4 percent of participants (*n*=113) experienced a preference for reading printed text. The findings of the JISC National E-books Observatory Project, (NeBO) (2007-2009) found that the modifiable text within e-books was very useful for users with visual impairment but users suffering from dyslexia and glaucoma experienced difficulty with the e-books interface.

2.5.2 Disciplinary difference

Levels of awareness and use of e-books varies according to different subject disciplines with many studies indicating that science subjects are more suitable to the electronic format. Christianson (2005) discovered that e-books in computer science, technology and some of the other sciences were used more than e-titles in social sciences and humanities following an analysis of data from 24,082 netLibrary titles from five academic institutions: Auburn University; Louisiana State University, University of North Texas; Texas A&M Commerce and Nunuez Community College over a one year study.

The findings of Dillon (2001) at the University of Texas and Ramirez and Gyeszly (2001) at Texas A&M University (TAMU) corroborate the suggestion that students in a variety of disciplines will have a tendency towards e-books. Both authors claim that Computer Science, Economics and Business subjects were all designated as high users of e-books. Similarly Gibb (2001/2002) found that Computer Science, Engineering, Business, Medicine and Literature were the disciplines preferring to use e-book formats. A 2001 study by Bailey found that business, economics and management, computing,

social sciences and medicine all favoured e-books using these more than students of other disciplines. Littmann and Connaway (2004) at Duke University found diverse patterns emerging among different disciplines using e-books. Computers, Psychology, Medicine, Religion, Arts and General Social Sciences all heavily utilised e-book resources whereas subjects such as History of USA, Law, Business, Economics and Management and Literature at Dukes were low users of e-book resources. However other studies demonstrate that while computer science and science disciplines endorse the use of e-books other subject areas will utilise e-books which suggests that the preference for e-books within certain subject disciplines is dependent on individual institutions.

2.6 Print books vs. e-book counterparts: analysis of usage statistics

A number of studies have been conducted which analyse print book and e-book equivalent use based on usage statistics generated by library management systems (LMS) and statistics supplied by e-book vendors. Kimball, Ives and Jackson (2010) compared e-book usage with counterpart print book usage in the Texas A&M University Libraries. Kimball found that the top science titles in NetLibrary and ebrary were used between 3 and 17 times more than the equivalent print titles and the top computer science e-book titles in Safari were used 207 times more than the print editions. Bailey (2006) analysed usage data from netLibrary at Auburn University Montgomery over a one year period (2000-2004). The study discovered that e-book use increased, whereas use of the print book stock declined. However further scrutiny of the netLibrary data was hampered by the fact that netLibrary classifications did not correlate with the Library of

Congress classification, therefore a title by title comparison could not be implemented. Similarly when Langston (2003) examined e-books usage statistics at California State University using netLibrary statistics he found the subject groupings categorized by netLibrary were too broad and incomparable with library subject classification system, therefore making analysis difficult.

Bailey's study concluded that the growth in the use of e-books supports the notion that e-books are accepted and established within AUM's collections. Christianson and Aucoin (2005) conducted a comparative study between print and equivalent e-book titles at Louisiana State University. They measured usage data from 2,852 titles delivered by the netLibrary platform on a monthly basis for a one year period. In contrast to other studies, the research revealed that print books were used more than e-books. However according to Christianson and Aucoin the level of e-book use was extremely focused since the e-books accessed had a higher average use than their print counterparts. Williams and Best (2005) compared a sample, 177 e-books with comparative print titles and discovered that the print versions were the preferred version. However because the Williams and Best analysis was a small local study, the results can only be viewed as indicative and lack any generalisation.

Understanding the limitations of evaluating print and e-book statistics Littman and Connaway (2004) analysed the usage statistics of 7880 print books and their print equivalents in the Duke University Libraries to investigate user preference. They

discovered that e-book titles were used 11 percent more than their print counterparts. Littman however does underline the limitations of the research and of using circulation analysis to compare use of material in different formats. Similarly William and Best also outline the shortcoming of evaluating statistic as they state that statistics generated by library management systems fail to consider the use of print items within the library which often goes unmonitored.

> "One of the main problems with comparing usage statistics of print to electronic titles is the way in which these statistics are gathered" (Williams and Best., p.475).

The authors also maintain that statistics provided by e-book vendors calculate the number of accesses in a given period which could amount to a perfunctory view and therefore e-book statistics are not comparable with print circulation statistics. Sprague (2009) also addresses the problem on e-book studies concentrating on usage statistics supplied by the same e-book vendor. Safley (2006) maintains that there is a lack of consistency amongst e-book vendors when providing e-book usage statistics. The COUNTER (Counting Online Usage of Networked Electronic Information resources) project attempts to address the inadequacies of using usage statistics to evaluate e-book use. The project outlines standards and protocols for measuring the use of information resources and ensuring statistics supplied by different vendors thus ensuring the consistency of statistics produced.

2.7 Summary

This chapter has outlined the methods and terminology used in sourcing material on e-books research. Using existing explanations it has provided a definition of what comprises an e-book in relation to the current case study at Queen's University Belfast.

This chapter then provides a detailed review of e-book literature and defines common approaches to investigations and themes within e-book research. A prevailing area of discussion within this area of research is awareness of e-books and how this ultimately affects the uptake and usage of the resource. This review chapter summarises the significant benefits of e-books represented in various research studies, including round the clock availability, ease of navigation, keyword searching, portability, cost and convenience. It delineates the preconceptions and notions amongst library users in academic institutions when introducing e-books into library collections detailing various problems such as an inclination towards printed textbooks, difficulties reading electronic text, navigation and searching issues and concerns over Digital Rights Management (DRM). It also describes the challenges faced by libraries when implementing e-books such as sustaining different business models and a lack of uniformity amongst e-book packages.

The literature review also deals with studies evaluating attitudes towards e-books where the outcomes have resulted in a distinct preference for print resources. The review also makes reference to an experiment measuring differences reading conventional books

(C-books) and electronic books (e-books). Varying levels of uptake among different subject disciplines may be attributed to the absence of policies to increase awareness of e-books and patterns of reading behaviour in individual institutions. The complexity of using e-book vendor generated statistics to evaluate usage is also highlighted. The themes and issues reviewed in this chapter will be developed where relevant in relation to the findings of this dissertation.

Chapter 3: Methodology

3.1 Background

The previous chapter discussed the literature available on e-books research. It identified common topics within e-book evaluation and investigations, considered issues such as awareness of e-books, arguments relating to the benefits and drawbacks of the resource, and the difficulties encountered when evaluating e-book use, which will be developed in relation to the findings of the project overall.

This research is centred on the use of e-books and aims to determine and understand attitudes towards e-books. It measures awareness and usage of the resource by examining e-book vendor generated statistics and endeavours to discover reasons for use and non use of e-books by actively seeking library user opinions in a questionnaire study. This chapter sets out to detail the research methodology and the methods employed in the study.

3.2 Methodology

There is a growing amount of research into use of e-books. Common methodologies typically employed in e-book research are the evaluation of usage statistics, questionnaires, surveys, interviews and focus groups. For the purposes of this study it was decided to employ a quantitative methodology by analysing e-book use statistics. It identifies the types of metrics to be examined such as sessions conducted and activity

(searches and section requests) performed within the e-book database. The chapter begins by outlining the rationale for evaluating COUNTER statistics. While the investigation of e-book vendor statistics has its limitations it was considered to be a valuable and viable option in usage measurement.

> "These counts, however imprecise and poorly understood, are the closest measures we have for comparing utility" (Christianson and Aucoin, 2005, p. 79).

Given that the evaluation of e-book statistics was not sufficient to gauge library user opinion, a second methodology was employed and this involved the assessment of user attitudes and experiences through a questionnaire. It could be argued that while the questionnaire veers towards quantitative methodology, the design of the questionnaire with its Likert scale rating system and open text comment has a number of qualitative elements. The Likert scale is a "bipolar scaling technique, which allows a respondent to select a choice that best demonstrates their level of agreement with a given statement" (Pickard 2007, p.188). The questionnaire was necessary to corroborate the findings of the e-book statistics and for obtaining information from respondents.

> "The questionnaire is a vital part of interactive IR studies since it is one of the primary vehicles for eliciting data from subjects" (D. Kelly *et al.*,2008,p.123).

3.3 Data collection methods

It was decided to use a combination of two instruments. The first instrument was the analysis of COUNTER compliant e-book statistics provided by the subscribed e-book platforms. A total of sixteen reports were produced from eight different vendor platforms: ACLS Humanities; Credo Reference; Early English Books Online (EEBO); ebrary;

Eighteenth Century Collections Online (ECCO) and the Shakespeare Collection combined under the Gale platform; MyiLibrary; Safari Books Online and Wiley InterScience. These reports were documented in table and graph format. The first part of the analysis concluded with a calculation of mean sessions from each of the e-book platforms. The second instrument was a questionnaire aimed at assessing the reasons for use or non use of e-books while also inviting the viewpoints of users.

3.3.1 Rationale for evaluating COUNTER statistics

The individual custom reports produced by both the ACLS Humanities and Credo Reference platforms exemplify the diversity of e-book vendors' usage statistics reports. Figure. 1 demonstrates that the ACLS resource has a total viewing figure of 27,105. This figure comprises browse searches where users have searched using the author, subject, and to a lesser extent the title. It also encompasses searches conducted using basic, Boolean, proximity, bibliographic and history search facilities. This custom report also indicates that a very high number (25,899) of pages/ images have been viewed.

	browse				search					view			
	author	subject	title	browse total	bibl	bool	prox	simple	search total	pg/img	t.o.c.	text	view total
Aggregated stats	32410	31140	10417	73967	345473	334085	1835	93658	775051	4814679	467548	204070	5486297
Queen's University	267	99	26	392	970	126	7	317	1420	25899	749	457	27105

Queen's University, Belfast, Northern Ireland, UK — **ACLS Humanities E-Book (acls)** — **From Sep 2009 through Jun 2010**

Figure. 1: ACLS Customs Statistics Report

By contrast Figure. 2 shows a custom resource produced by Credo Reference. This report illustrates the total number of searches, sessions and entries viewed over a requested period and the format is less detailed than the ACLS report.

Custom Stats Report

Credo Reference 28 Sept 2009 - June 2010

Year	Month	Sessions	Searches	Entries Viewed
2010	1	268	677	314
2010	2	158	335	79
2010	3	238	486	141
2010	4	241	751	219
2010	5	319	1,062	364
2010	6	27	62	20
2009	9	30	97	22
2009	10	367	751	295
2009	11	467	1,267	1,044
2009	12	232	441	254
Total		2347	5929	2752

Figure. 2: Credo Reference Customs Statistics Report

There is a marked disparity in the layout and criteria of the two individual, custom reports; however it should be noted that different reports can be produced from the same vendor database as indicated by Figure. 3 which denotes the entries viewed in Credo Reference by subject category.
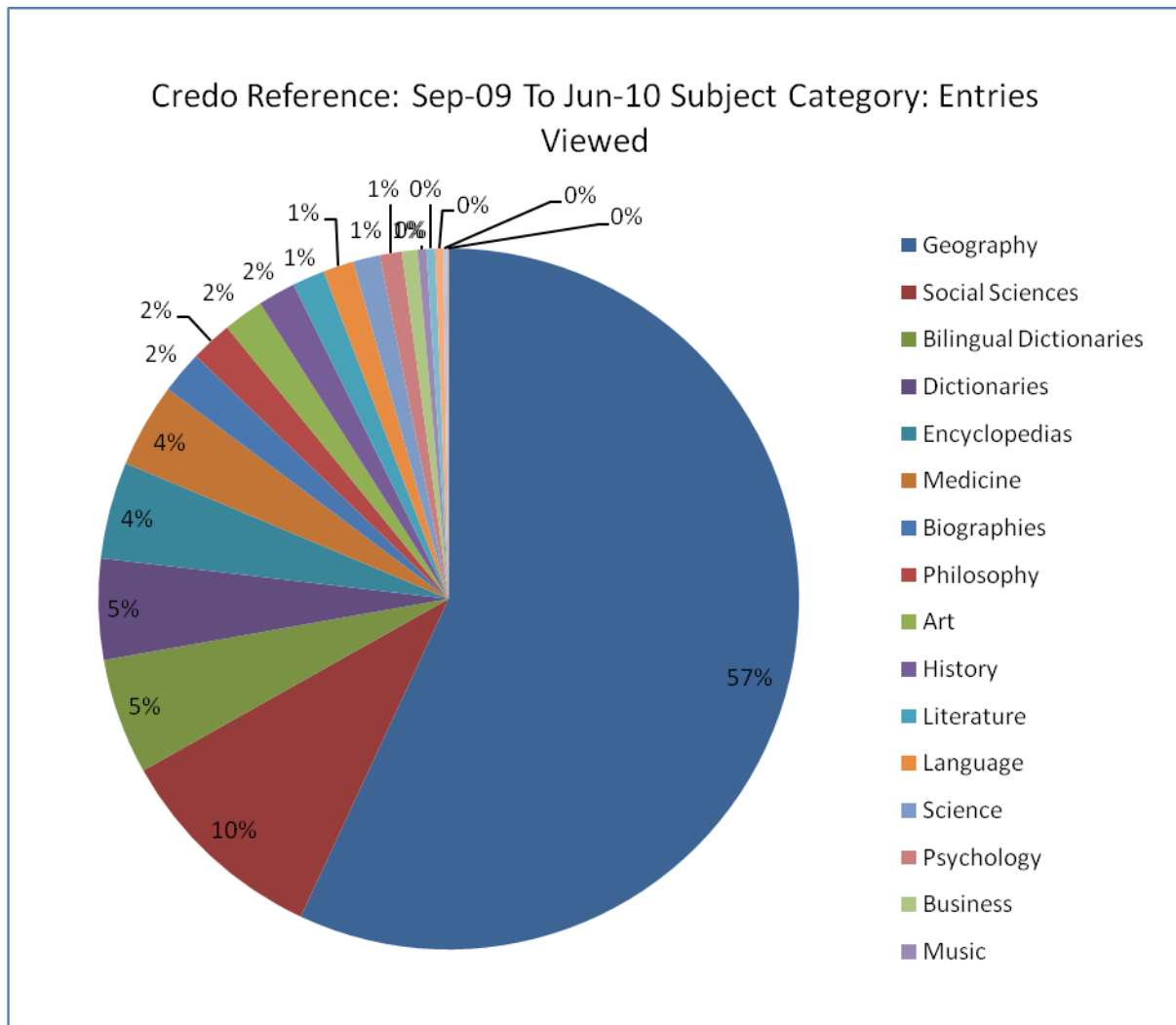

Figure 3: Credo Reference custom report: Subject Category: Entries Viewed

As an alternative to analysing the differing, individual reports produced by each vendor platform, it was decided to use COUNTER compliant statistics to measure usage of Queen's University's e-book resources and to look at two report types. This means that vendors who do not subscribe to the COUNTER code and provide COUNTER compliant statistics, namely Knovel, will not be analysed. However this approach was deemed necessary in order to have a common, compatible denominator when appraising the usage metrics from an assortment of e-book platforms. A number of possible reports can be produced from the COUNTER system however it was decided to opt for three distinct metrics to be examined which are the number of sessions, searches conducted and sections requested.

3.3.2 COUNTER reports

COUNTER aims to make usage statistics consistent so that information from a variety of different electronic resource providers can be measured straightforwardly and accurately. COUNTER compliant statistics ensure that the vendor produced statistics subscribe to the 'agreed international set of standards and protocols governing the recording and exchange of online usage data' (http://www.projectcounter.org/).

The first COUNTER report indicates the number of successful section requests by month and title. The successful section requests, according to Appendix A: Glossary of Terms on the COUNTER report refer to a "chapter" or "entry", "the first level of subdivision of a book or reference work"

(The Counter Code of Practice, Books and Reference Work: release 1, March 2006, http://www.projectcounter.org/code_practice.html).

The second COUNTER report displays the number of searches run and session requests by month and service, except in the case of the ACLS Humanities E-Book where the second COUNTER report produced is the number of successful title requests by month and title. The COUNTER code of practice classifies a search as an "explicit line of intellectual enquiry", while the code defines a session as "successful request of an online service...one cycle of user activity that typically starts when a user connects to the service or database and ends by terminating activity that is either explicit or implicit" (The Counter Code of Practice, Books and Reference Work: release 1, March 2006, http://www.projectcounter.org/code_practice.html).

Specific dates (September 2009 – June 2010) have been stipulated in order to gain an overall picture of the total number of sections requests, searches and sessions run in a given period. The study focused on the usage statistics provided by the e-book providers: ACLS Humanities E-books, Credo Reference, Early English Books Online (EEBO), Ebrary, Eighteenth Century Collections Online (ECCO) and the Shakespeare Collection, MyiLibrary, Safari and Wiley. The e-book vendor statistics are presented in table format, displaying individual access figures and also as line graphs illustrating variances in usage over the academic year.

3.3.3 COUNTER statistics analysis

The COUNTER statistics are presented in table and graph which allows patterns of use to be identified. The tables display the exact number of sessions, searches run and successful section requests, while the graph illustrates the peaks and troughs in use throughout the measured period. Following the discussion of e-book COUNTER statistics, the mean number of e-book sessions is calculated using the descriptive statistics function on the Data Analysis Tool on Microsoft Excel and these are displayed in table and graph format, which allows the most heavily used e-book platforms to be viewed at a glance.

3.4 Questionnaire

The questionnaire was designed to be self-contained with a brief introduction clarifying the purpose of the study, advising users of anonymity and giving the contact details of the researcher (appendix ii). The print questionnaires were identified by an individual reference number which was only inputted once the forms had been returned completed. The questionnaire consisted of 9 questions in total. It opened with a dichotomous question and then directed the participant towards completing the relevant sections of the questionnaire. The question structure was intended to be clear and concise so that respondents were encouraged to take part in the process (Oppenheim, 1992).

Questions 1 to 6 focused on the use and non use of e-books. These questions required a scaled specific response on a Likert scale and were dependent on the participant accurately rating their response.

> "The use of questionnaires in research is based on one basic underlying assumption: that the respondent will be both willing and able to give truthful answers" (Burns, 2000, p.571).

The decision to use the Likert scale rating system on the questionnaire was the result of pilot testing of the questionnaire. The researcher's colleagues were required to pre-test the questionnaire shortly before it was administered. Multiple dichotomous questions were originally planned, limiting user responses. However this approach was abandoned in favour of the Likert system as little information could be derived from non scaled and single option responses which gave minimal insight into users' perceptions concerning e-books. The pilot testing also established that the questionnaire took less than ten minutes to complete.

Questions 7 and 8 requested specific information regarding the respondent's level of study and the respondent's School or Department. The final question was in the form of a qualitative, open text comment box where users were asked to note any further observations that they had on e-books.

The questionnaire was administered in person to library users at The McClay Library, Queen's University Belfast in late June 2010. This period falls outside of term time dates, with undergraduate assessment finishing on 5th June 2010. The questionnaire

was distributed at this time as the researcher was unable to carry out the questionnaire on a date prior to this.

Library users were systematically approached in person and asked if they would complete the questionnaire and return it in the designated box located at the issue or enquiry desks on the various floors in the building. There was no incentive or obligation to partake in the questionnaire process. The use of the questionnaire was an effective method since it could be easily distributed and collected by the researcher. The administering of the questionnaire took place over a period of one day.

A total of 129 respondents returned the questionnaire of which 112 were deemed suitable for analysis. 15 questionnaires had been completed by library staff and it was decided to exclude these from the study as their responses (which were predominantly favouring e-books) may have dramatically affected the end result. 2 questionnaires were returned uncompleted and because of the lack of data could not be included in the study. The administering of questionnaires in person ensured that a definite number of questionnaires were completed, unlike non-obligatory postal or online questionnaires which can elicit poor response rates (Kelly *et al.* 2008).

3.4.1 Consent letter

A consent letter was addressed to the Assistant Director of Information Services at Queen's University Belfast to seek prior permission for the study (appendix iii). The letter outlines the methodology of the study, indicating that it would entail the analysis of statistical data relating to e-books and the administration of a questionnaire amongst users. The letter highlights the benefits of the study, stating that the project supports the library's objectives and will provide an opportunity to learn from the research which will ultimately improve services for users. The letter also states that the study will also contribute to previous and current e-book research studies. The letter stresses that the study has followed the correct procedures in terms of ethics (Statement of Ethical Practice for the British Sociological Association) and data protection (Data Protection Act 1998).

3.4.2 Questionnaire analysis

The data generated from the questionnaire was entered into a Survey Monkey Professional account. As the questionnaire was administered in print format all data collated had to be entered into the account manually. The analysis shows the response rates, the number of skipped questions and numbers of questions answered. The data is then displayed as percentages, in table and graph format to show the levels of user agreement with the Likert statements on the questionnaire.

3.5 Population

The population to be surveyed comprised Queen's University students, researchers and academic staff using The McClay Library. The McClay Library is situated within the main campus of Queen's University in the heart of the student quarter. The library is an amalgamation of the former Main Library, the Seamus Heaney Library and the Science Library. The McClay Library site was chosen to administer the questionnaire because of its popularity, high degree of occupancy and ease of access to the researcher. The newly built McClay Library opened in July 2009 and has over one and a half million texts and places for 2,000 readers. During term 94,000 to 196,000 users entered the library with the single largest footfall in one day rising to 1,200. These occupancy figures decline somewhat during vacation period. The McClay Library operates a controlled entry system whereby access is restricted to Queen's staff and students who are required to use their student, staff or membership card to gain admission. The researcher could therefore be guaranteed that participants in the questionnaire were staff or students of the University.

3.6 Sampling method

This dissertation employed a quota sampling method because of the researcher's ease of access to the sample. This method was necessary because the study was conducted within a limited time frame and without a budget. It was calculated that a sample size of 112 was needed and this was based on a confidence interval of 7.25 and a 95 percent confidence level. The sample estimate was calculated using the Sample Size Calculator on the Survey System website (http://www.surveysystem.com/sscalc.htm). The inability

to use all 129 questionnaires originally collected resulted in the calculable margins of error being higher (7.25) than anticipated at the beginning of the study.

The population size (*n*=286) was based on an average figure for peak occupancy for the month of June. The peak occupancy figures were obtained from the sentry gate system (appendix iv). The peak occupancy figures for June would have been somewhat lower than months during term dates. The size of this sample was considered adequate to gauge user opinion at a given period.

> "Sampling is about finding a group to survey which is enough like the population under investigation that valid generalizations can be made from the population on the basis of the sample" (Sapsford 1999, p.50).

3.7 Ethical considerations

The research was designed in accordance with the Statement of Ethical Practice for the British Sociological Association;

(http://www.britsoc.co.uk/equality/Statement+Ethical+Practice.htm).

All data adhered to the principles of the Data Protection Act 1998 (http://www.legislation.gov.uk/ukpga/1998/29/contents). The usage reports run by COUNTER do not contain any individual user data. The figures generated by these reports supply numerical data based on user access, section retrievals and searches conducted. There were no personal user records attached to these figures. The questionnaire process also guaranteed complete anonymity. Each form was identified by a unique number which was only entered after the form was returned completed. The

number was intended solely for tracking purposes when manually entering the data for analysis. The completed forms were returned in a closed box so no association could be made between the respondent and their selection of choices on the questionnaire. All paper copies of the print questionnaire were manually entered into a Survey Monkey Professional account for analysis and the print questionnaires were then destroyed. There were no vulnerable groups participating in this study.

3.8 Limitations of the methodology

The COUNTER compliant e-book statistics give an indication of resource use throughout the academic year. There are limitations to evaluating statistics and Rowlands *et al.* (2008) maintain that research studies should move towards the observation and examination of user information retrieval activities to gain an insight into resource use.

> "Libraries must move away from bean counting dubious download statistics, and get much closer to monitoring the actual information seeking behaviour of their users" (p.294).

The exclusion of Knovel e-book statistics due to their lack of compliancy with the COUNTER code also means that a comprehensive evaluation of e-book at Queen's University cannot be completed. The study does not take into account miscellaneous e-books on other databases such as Construction Information Service (CIS). E-books that are under this remit could not be evaluated because of the difficulty obtaining statistical data on individual titles and the time constraints placed on this study. It was decided that the evaluation of statistics from COUNTER compliant vendors would give an indication of use since it provided comparative metrics to assess the e-book use.

The questionnaire may lack clarity perhaps failing to provide clear definition of the research terminology. While the questionnaire had an introductory paragraph explaining the purpose of the questionnaire, it did not have an introductory page with an explanation of the term, 'e-book', which was included in the study by Briddon *et al.* (2009) at the University of the West of England. The administering of the questionnaire in the period outside of term teaching dates resulted in a high number of postgraduate and PhD students completing the questionnaire which is perhaps indicative of the library population at that particular time of the year but not indicative of the library population in general. It should also be noted that the questionnaire was administered at one library site whereas library services at Queen's University Belfast are provided by several other libraries located on different sites. The research was not advertised and there was no publicity relating to the questionnaire as it was an individual research study rather than an Information Services driven venture. Therefore a wider range of library users, including those who do not access the library, could not be reached. These factors may suggest that the sample population is not truly representative of the library population

The distribution of the questionnaire by the researcher may have affected responses by participants. Bryman (2005) maintains that people have an inclination to demonstrate a "social desirability bias" when the interviewer is present, and that respondents will be more likely to answer with 'politically correct' responses. Richman at al., (1999) similarly agree that the conditions under which a questionnaire is administered, regardless of whether it is in print, electronic or telephone format may lead respondents to provide socially desirable responses (p.124). However consideration was given to provide

closed boxes for return of the questionnaires so that no association could be made between individuals and their responses. The willingness of participants to include non-obligatory free text comments at the end of questionnaire indicates a lack of inhibition as "some of the most interesting information...came from the direct quotes generated by open-ended questions" (Teddlie and Tashakkori, 2009, p.235).

A further limitation of questionnaire methodology is that there is no means to follow up on participants' responses in order to allow a more comprehensive understanding of the issues raised. The questionnaire could be accompanied by individual interviews with participants or focus groups which would "generate in-depth, contextualised accounts that can furnish explanation" and enable the researcher to probe more deeply on certain aspects of e-books research (Barry, 2001, p.6). Personal interviews and focus groups were not part of the present study due to time restrictions and they would have undoubtedly enabled the researcher to develop the qualitative aspect of the assessment. However these methods could be implemented as part of a long term Information Services strategy investigating the use of e-books at the university.

3.9 Conclusion

This research aims to gain an insight into the use of and attitudes towards e-books at Queen's University Belfast. This chapter discussed the methodology and the data collection methods used in the enquiry. It focused on the underlying principles and

motivation for using the chosen methods. The chapter considered the sampling method, the population and the ethical connotations of the research.

The methods used in the study include the analysis of COUNTER usage statistics and the evaluation of a print questionnaire. The quantitative data from COUNTER usage statistics established trends and patterns from which deductions could be made about e-book use over the academic year. The level of e-book use was also compared to print circulation issues. The questionnaire administered to library users elicited responses relating to the use or non use of e-books at the university and the subsequent reasons for use or non use. This provided additional quantitative data, with qualitative elements, to further probe e-book use and user perspectives on e-books. The open-ended questions which concluded the questionnaire further developed the evaluation process allowing further insight into user perceptions. While both of these methods have their limitations, the combination of methods allowed the researcher to obtain a glimpse into e-book use and user viewpoints on the subject of e-books. The following chapter will look at the findings of these methods in detail and draw on associations with other e-book research.

Chapter 4: Results and discussion

4.1 Introduction

This chapter firstly presents statistics from the different platforms that support e-books at Queen's University. It looks at the various e-book provider platforms and highlights the main characteristics and features of the user interface. The chapter also discusses in detail, where applicable, the COUNTER compliant statistics.

As already discussed in the previous chapter, it was decided to use COUNTER compliant statistics for the purpose of evaluation since these are presented in a standard and consistent format. Standardization amongst usage metrics is essential where a number of e-book platforms are being assessed concurrently. The period measured dates from September 2009 to June 2010. The statistics obtained from the e-book vendors were presented both in table format and as line graphs denoting usage trends using Microsoft Excel. There follows a calculation of the mean number of e-book sessions and this section of the chapter concludes with a discussion on the evaluation of e-book statistics.

The second part of the chapter provides the results generated from the print e-book questionnaire administered to users at the McClay Library. The questionnaire was essential in order to provide the descriptive data to validate the e-book vendor statistics.

This part of the chapter presents the findings of the questionnaire and concludes with a brief analysis of the open text comments boxes, the final question on the questionnaire. According to Kimball *et al.* (2010) "[a]nalyzing vendors' usage counts of e-books provides a complimentary approach to user surveys" and it is intended that the combination of the two methods will provide a satisfactory indication of the use of e-books at the university (p.71).

4.2 COUNTER usage statistics

4.2.1 ACLS Humanities

ACLS Humanities E-Book provides access to 2,830 full text titles offered by ACLS in association with 20 learned societies, 100 publishers and librarians at the University of Michigan's Scholarly Publishing Office. It is possible to browse for e-books using a title list, opting to search by author or subject (appendix v). Other important aspects include reviews, keyword searching and full catalogue records. The section requests yielded a much higher set of results than the successful title requests, which indicates that users are searching in general terms rather than title specific (Table 1 and 2). According to the COUNTER statistics the beginning of the academic year sees very little research activity on this platform with no section and title requests being recorded during these months (Figure 4).

Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
3	0	0	0	1457	7637	1819	1400	1287	413

Table 1: ACLS COUNTER statistics: Number of Successful Section Requests by Month & Title

ACLS Number of Successful Title Requests by Month and Title Queen's University, Belfast, Northern Ireland, UK									
Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
4	0	0	0	0	10	30	3	21	16

Table 2: ACLS COUNTER statistics: Number of Successful Title Requests by Month and Service

Without the number of sessions it is difficult to assess the use of the resource comparatively with the other vendor statistics. The low levels of activity from September to December in section requests would point to a poorly used resource at the start of the academic year, however this use rises to significant levels from January to May in particular. The month of February 2010 sees a marked number of requests in the successful section requests (Table 1) which would signify an intense period of research activity following the examination period in January.
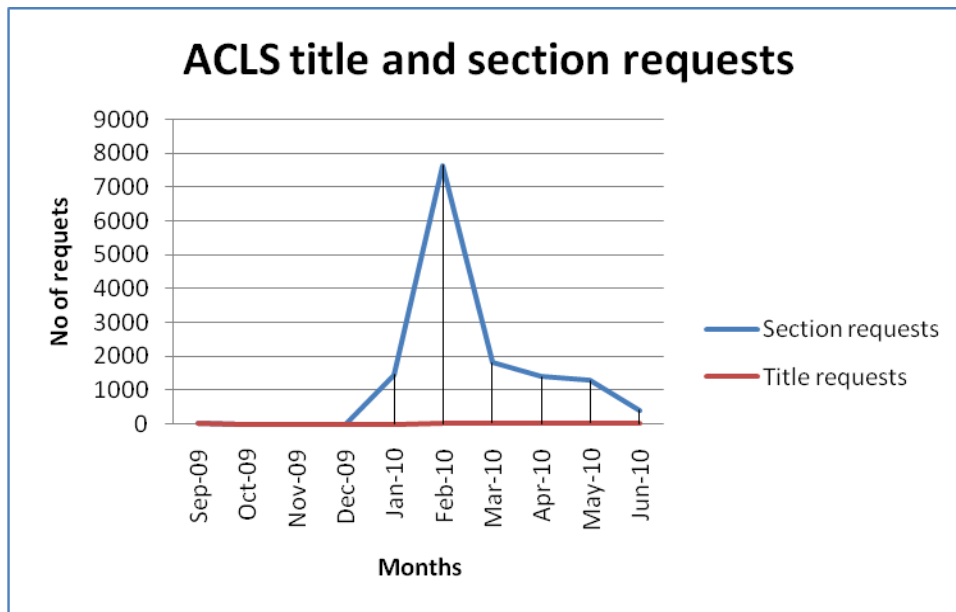
Figure. 4 ACLS successful section and successful title requests

4.2.2 Credo Reference

Credo Reference offers access to encyclopaedias, dictionaries, biographies and bilingual dictionaries. It contains 100 reference books from 36 publishers. It is possible to narrow resources down to subject specifics and to find items using the following options: search, find a book tab, advanced search (appendix vi). Credo COUNTER statistics reports indicate that the Credo resource is used consistently throughout the academic year (Table 3 and 4). The graph in Figure 5 demonstrates that while the number of session requests normally falls short of 300, the number of searches is particularly high and regularly exceeds 500 with searches in November and May rising to over 1,000, signifying research intensive behaviour. This may be attributed to Credo being used as a reference resource and users may be actively scanning and retrieving relevant entries. The highest levels of searching occur in October, November and May.

The sessions and searches almost run in tandem except for a period in November when the number of successful session requests rises significantly (Figure 5).

Credo Number of Successful Section Requests by Month and Title Queen's University, Belfast, Northern Ireland, UK									
Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
95	295	1044	254	314	79	141	219	364	42

Table 3: Credo Reference COUNTER statistics: Number of Successful Section Requests by Month and Title

Credo Total Searches and Session by Month and Service Queen's University, Belfast, Northern Ireland, UK										
	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
Searches	317	751	1267	441	677	335	486	751	1062	158
Sessions	134	367	467	232	268	158	238	241	319	69

Table 4: Credo Reference COUNTER statistics: Total Searches and Sessions by Month and Service
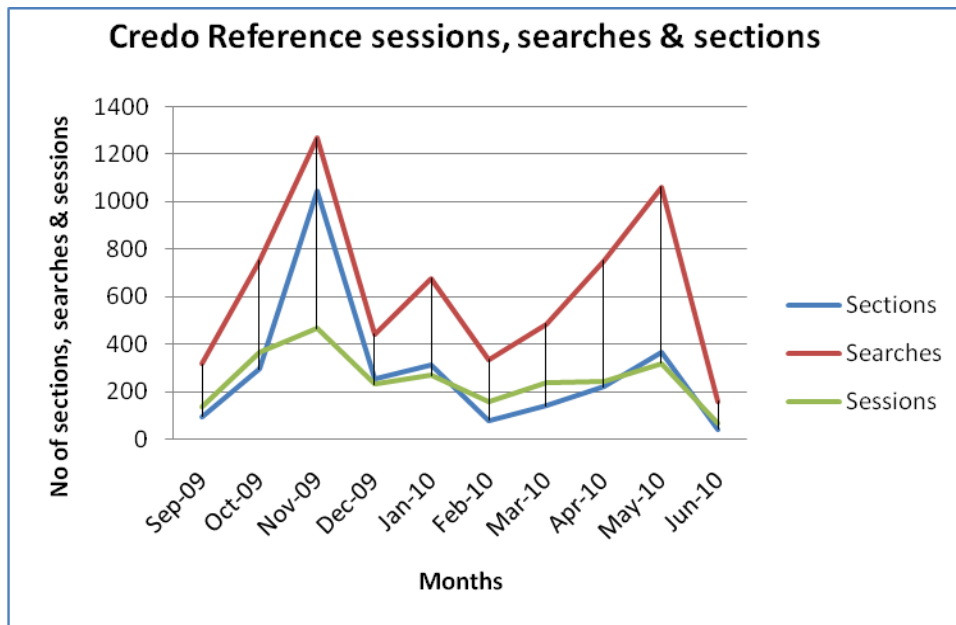
Figure 5 Credo Reference successful section requests, searches run and sessions

4.2.3 Early English Books Online (EEBO)

Early English Books Online (EEBO) consists of 'digital facsimile pages images' of almost every work printed in England, Ireland, Scotland, Wales and British North America and English works that have been printed in other countries from the years 1473 to 1700. Searching is possible through a basic or advanced search function and it is possible to search using the usual options: title, author, subject, keyword and bibliographic number (appendix vii). The consistently high figures throughout the year indicate that the resource is well used. There is a close correlation between the number of searches and sections retrieved although the sections retrieved remains higher than the number of searches. The number of sessions remains much lower than searches and sections retrieved which points to research intensive behaviour (Table 5 and 6). According to the COUNTER report there is a high peak of successful section retrieval and searches run in October (Figure 6). This could be attributed to the training courses

offered as part of the inductions process at the beginning of the academic year and efforts by subject librarians to encourage the use and uptake of the various electronic resources. The level of sessions remains consistent rising to 601 in October and 514 in November. This would indicate that those using the resource are using it intensively to source material. The section requests greatly exceeds number of sessions and searches conducted.

EEBO Number of Successful Section Requests by Month and Title Queen's University, Belfast, Northern Ireland, UK									
Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
2326	3641	2408	977	2042	726	1941	1703	1003	958

Table 5: EEBO COUNTER statistics: Number of Successful Section Requests by Month and Title

EEBO Total Searches and Session by Month and Service Queen's University, Belfast, Northern Ireland, UK										
	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
Searches	479	2508	1594	724	1567	349	632	484	791	422
Sessions	191	601	514	282	313	129	209	190	240	127

Table 6: EEBO COUNTER statistics: Total Searches and Sessions by Month and Service
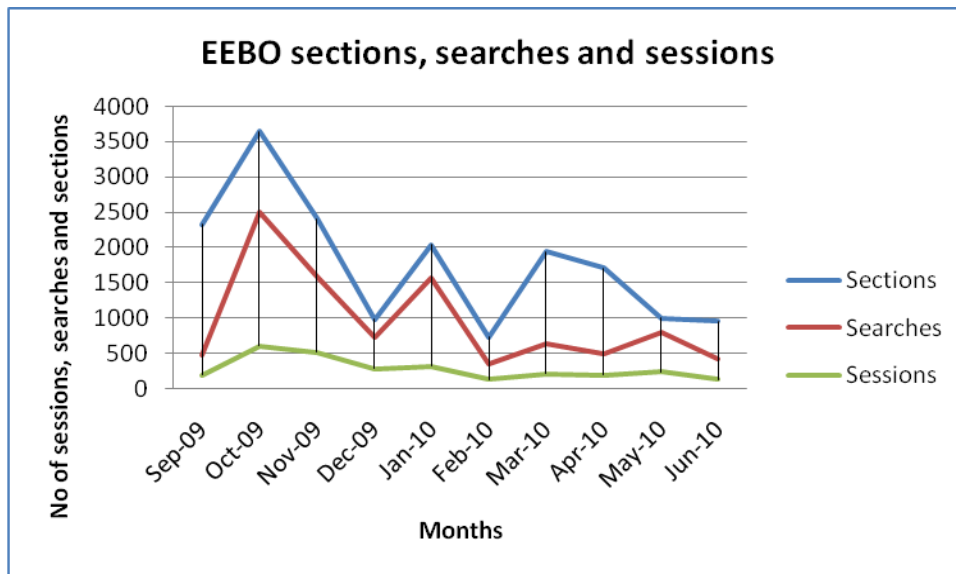
Figure. 6 EEBO successful section requests, searches run and sessions

4.2.4 ebrary

The ebrary resource contains over 30,000 recent publications from a broad range of subject disciplines. On accessing the resource the user is met with an attractive, user-friendly interface and a number of options including quick guides and training videos, the ability to search using a subject or publisher list and a list of new publications accompanied by a review synopsis and book cover images (appendix viii). The library's e-books web page includes a link to a guide to the ebrary resource published by ebrary promoting the various aspects of the platform. The user guide is supported by ebrary's live web based training programme. The levels of successful sections requests are consistently high throughout the academic year with requests exceeding 100,000 (Table 7 and 8). The high usage may be attributed to the fact that the resource contains a large volume of publications and has a broader subject appeal across several disciplines,

appealing to a range of users from different academic areas. There are a number of notable peaks in activity in November, March and April (Figure 7).

ebrary Number of Successful Section Requests by Month and Title Queen's University, Belfast, Northern Ireland, UK									
Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
37,426	103,367	140,151	79,269	81,975	72,378	119,275	98,571	117,308	27,992

Table 7: ebrary COUNTER statistics: Number of Successful Section Requests by Month and Title

ebrary Total Searches and Session by Month and Service Queen's University, Belfast, Northern Ireland, UK										
	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
Searches	2,617	6,764	7,750	4,874	3,969	3,954	7,218	5,467	5,738	1,814
Sessions	1,146	3,039	3,044	1,787	1,689	1,505	2,689	2,067	2,002	591

Table 8: ebrary COUNTER statistics: Total Searches and Sessions by Month and Service
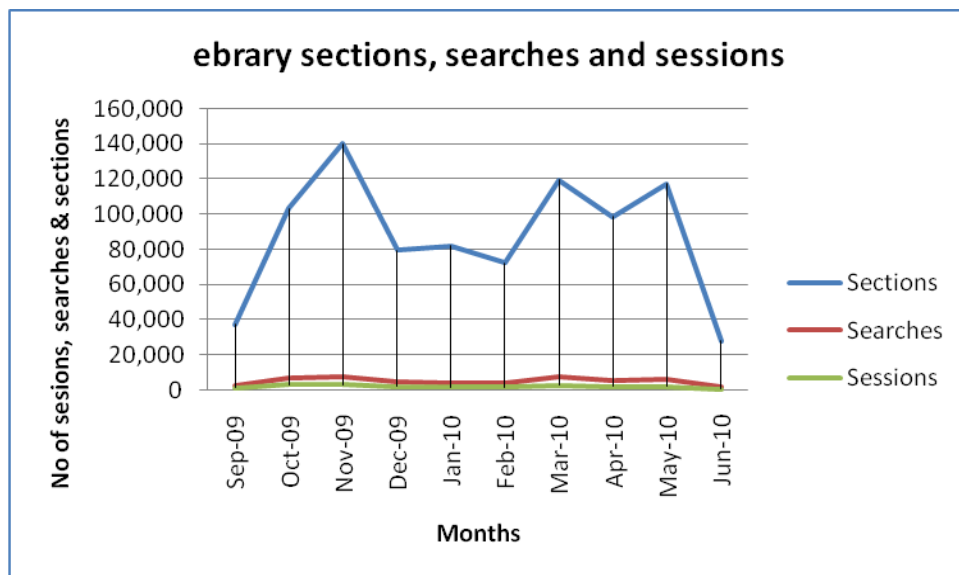
Figure 7 ebrary successful section requests, searches run and sessions

4.2.5 ECCO and the Shakespeare Collection

Both ECCO and the Shakespeare Collection are delivered under the Gale platform; the results are therefore presented jointly. Eighteenth Century Collections Online (ECCO) provides access to 180,000 titles and includes books, pamphlets, essays and broadsides. It encompasses works published in the 18th Century in England and contains a number of assistive research tools such as image gallery, chronology, key documents, and most popular searches (appendix ix). The Shakespeare Collection includes the Arden Shakespeare Complete Works, Gordon Crosse Theatrical Diaries and other works from Shakespeare's time. The Collection includes general reference material, full text periodicals, primary source items, full text criticism and annotated works. The platform provides a basic, subject guide search, a timeline function and a title list (appendix x).

The inclusion of other resources such as essays and broadsides in Eighteenth Century Collections Online and periodicals in the Shakespeare Collection mean that statistics produced by the Gale platform do not solely relate to e-books. The figures therefore do not give a wholly accurate picture but do give an indication of the level of use. The intensity of searches and sessions remain consistent throughout the entire period with peaks in December and January and particularly March (Figure 8). The number of sections requests is drastically lower in comparison with less than 10 sections retrieved in several months of the year (Table 9). This could signify intense searching, yielding poor retrieval results.

Gale Number of Successful Section Requests by Month and Title Queen's University, Belfast, Northern Ireland, UK									
Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
16	103	4	21	1	74	17	6	4	1

Table 9: Gale (including ECCO and the Shakespeare Collection) COUNTER statistics: Number of Successful Section Requests by Month and Title

Gale Total Searches and Session by Month and Service Queen's University, Belfast, Northern Ireland, UK										
	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
Searches	1532	1947	2151	2500	2426	1498	2061	1456	1291	1066
Sessions	761	1483	1938	2553	2594	1588	4087	2193	1559	904

Table 10: Gale (including ECCO and the Shakespeare Collection) COUNTER statistics: Total Searches and Sessions by Month and Service
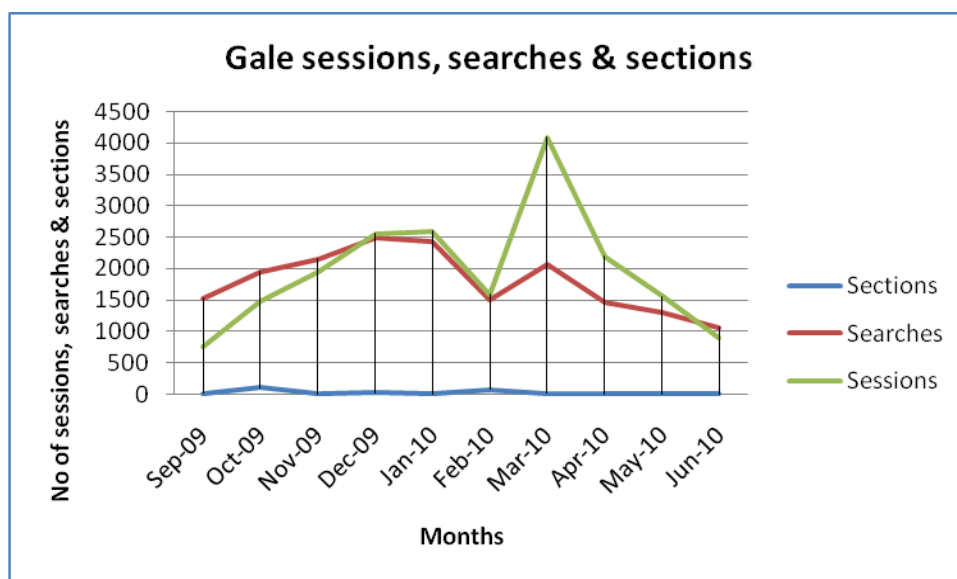
Figure 8 Gale successful section requests, searches run and sessions

4.2.6 MyiLibrary

MyiLibrary platform allows users to browse by viewing a complete list of e-books, lists by subject, lists by publisher and a quick search option (appendix xi). It is possible to create an account in the resource in order to store searches and notes. MyiLibrary, like ebrary is extremely user orientated and offers a virtual tour of the platform. The number of sessions and searches is distinctly lower than the number of sections retrieved (Figure 9). The sections requests reach a peak in May. The high numbers of sections retrieved and low number of searches indicate that users are reading several chapters or sections of the e-books at one session (Table 11 and 12).

MyiLibrary Number of Successful Section Requests by Month and Title Queen's University, Belfast, Northern Ireland, UK									
Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
2373	7249	7591	5251	6163	8692	9578	8335	12643	1558

Table 11: MyiLibrary COUNTER statistics: Number of Successful Section Requests by Month and Title

MyiLibrary Total Searches and Session by Month and Service Queen's University, Belfast, Northern Ireland, UK										
	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
Searches	264	583	664	433	525	628	729	681	1097	155
Sessions	175	290	296	91	157	171	88	120	177	48

Table 12: MyiLibrary COUNTER statistics: Total Searches and Sessions by Month and Service
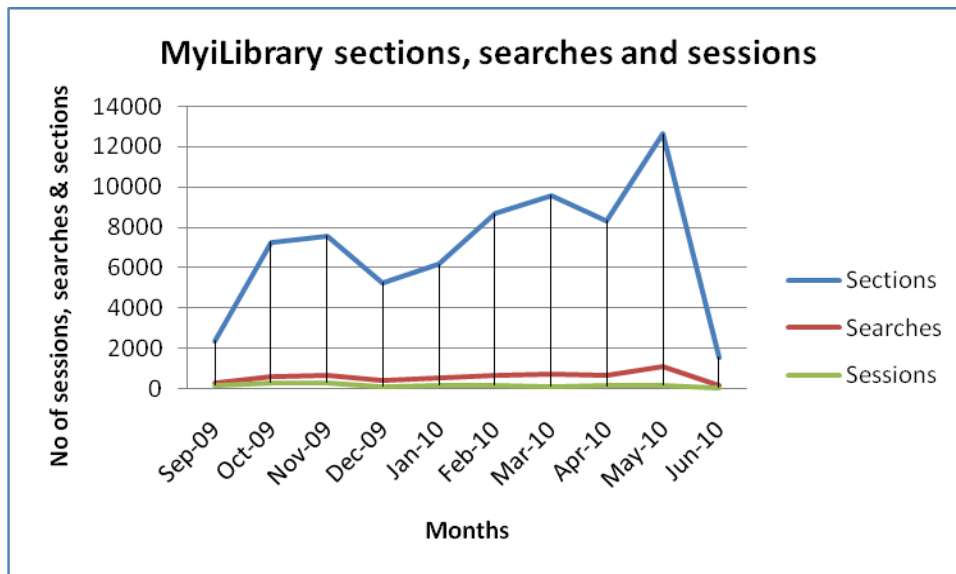
Figure 9 MyiLibrary successful section requests, searches run and sessions

4.2.7 Safari

The main subjects covered by Safari Books Online are technology, digital media and business. On the initial log in screen it is possible to conduct a basic or advanced search (appendix xii). A featured categories search, with a new enhanced categories search option is also available. The interface, like the aforementioned MyiLibrary and ebrary, is user friendly with custom collection section highlighting the top titles used by the subscription university (appendix xiii). The platform has a commercial aesthetic with book cover images accompanying the title and author details. Similar to the MyiLibrary resource the sessions and searches are considerably lower than the number of section requests signifying that users are reading detailed sections of text online (Table 13 and 14). There is a marked increase in section requests during January, the first exam period of the academic year (Figure 10).

Safari Number of Successful Section Requests by Month and Title Queen's University, Belfast, Northern Ireland, UK									
Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
342	439	616	250	1628	660	370	87	133	451

Table 13: Safari COUNTER statistics: Number of Successful Section Requests by Month and Title

Safari Total Searches and Session by Month and Service Queen's University, Belfast, Northern Ireland, UK										
	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
Searches	66	75	49	15	40	16	36	13	20	214
Sessions	46	61	52	25	41	30	24	15	12	40

Table 14: Safari COUNTER statistics: Total Searches and Sessions by Month and Service
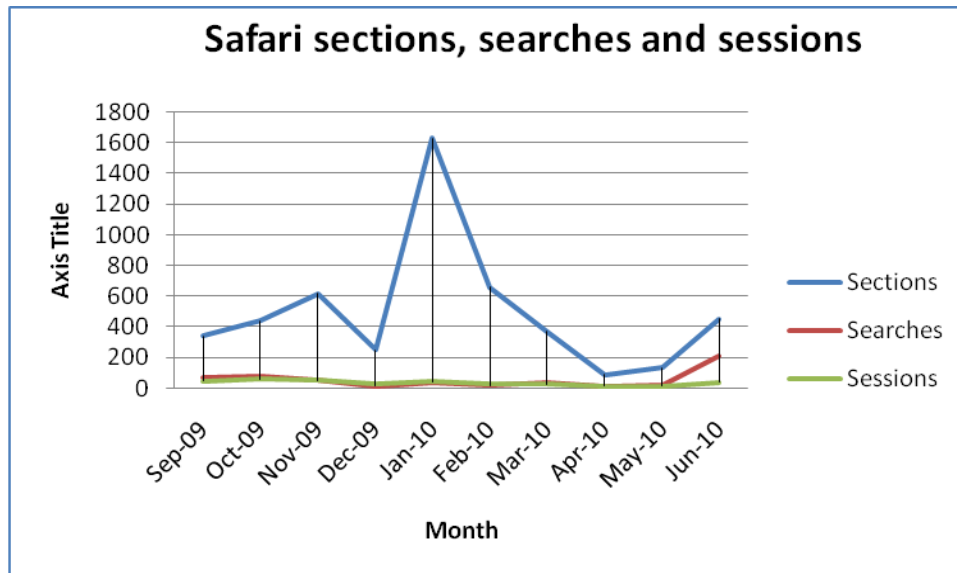
Figure 10 Safari successful section requests, searches run and sessions

4.2.8 Wiley Interscience

Wiley InterScience Online provides access to science titles published by Wiley. Access to the resource is provided by an A to Z list on a Queen's University interface with subscribed e-books clearly denoted by the library copy symbol on the right side of the page (appendix xiv). The platform offers a basic search facility, the ability to search by publication or by subject (appendix xv). A number of help resources are available including tutorials, webinars, user guides, personalization features and an email alerting service. The number of e-books Queen's University Library subscribes to on the Wiley platform is low, however usage of the resource is consistent despite the limited title offerings (Table 15 and 16). The levels of searches and sessions follow a similar pattern, usually remaining below 30, with the number of section requests far exceeding either the sessions or searches, indicating that users are retrieving significant sections or chapters of the e-books at one session log on (Figure 11). The retrieval of section request peaks on a number of occasions throughout the period, October, December, March and May with notable high use in April.

Wiley Interscience Number of Successful Section Requests by Month and Title Queen's University, Belfast, Northern Ireland, UK									
Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
22	131	25	137	70	74	124	213	135	41

Table 15: Safari COUNTER statistics: Number of Successful Section Requests by Month and Title

Wiley Interscience Total Searches and Session by Month and Service Queen's University, Belfast, Northern Ireland, UK										
	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10
Searches	3	20	6	7	6	1	7	4	0	5
Sessions	19	25	16	16	14	14	31	11	32	22

Table 16: Safari COUNTER statistics: Total Searches and Sessions by Month and Service
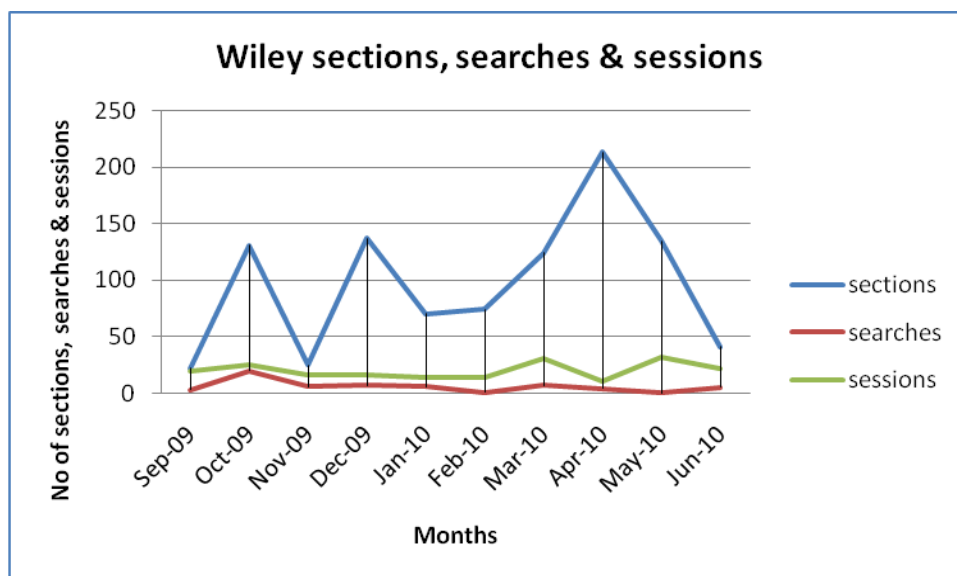
Figure 11 Wiley InterScience successful section requests, searches run and sessions

4.3. Mean e-books sessions

In order to attain an overview of e-book use from the different platform providers it was decided to calculate the mean number of e-book sessions. While the number of sessions on each of the different platforms varies considerably over the period being examined, September 2009 to June 2010, a common average was needed to approximate session use. The mean total for each platform represents an average

session per platform provider.   The mean for each platform was calculated using the descriptive statistics function on Microsoft Excel Data Analysis Tool.

The mean number of e-book sessions is illustrated by the table in Figure 12 and the bar graph in Figure 13. The mean ranges from 7.302967 in Credo Reference to 1,966 on the Gale platform. E-book platforms such as Gale and ebrary display high average uses and this may be attributed to the huge volume of e-books that can be accessed on both platforms. Both Eighteenth Century Collections Online and the Shakespeare Collection under the Gale platform provide access to 180,000 titles and a combined 1,456,720 documents respectively, whereas ebrary offers access to 30,000 publications. On the other hand Credo Reference has the lowest mean and the session use is recorded as negligible on the bar chart illustration. Credo contains only 100 reference books, a distinctly lower figure than the two aforementioned e-book providers. It could be asserted that the high number of sessions is inextricably linked to diverse and multiple resources being provided under a single platform.

E-book platform	Mean
Credo	7.302967
EBBO	279.6
Ebrary	1955.9
Gale	1966
MyiLibrary	161.3
Safari	34.6
Wiley	20

Figure 12 Mean e-book sessions by platform provider
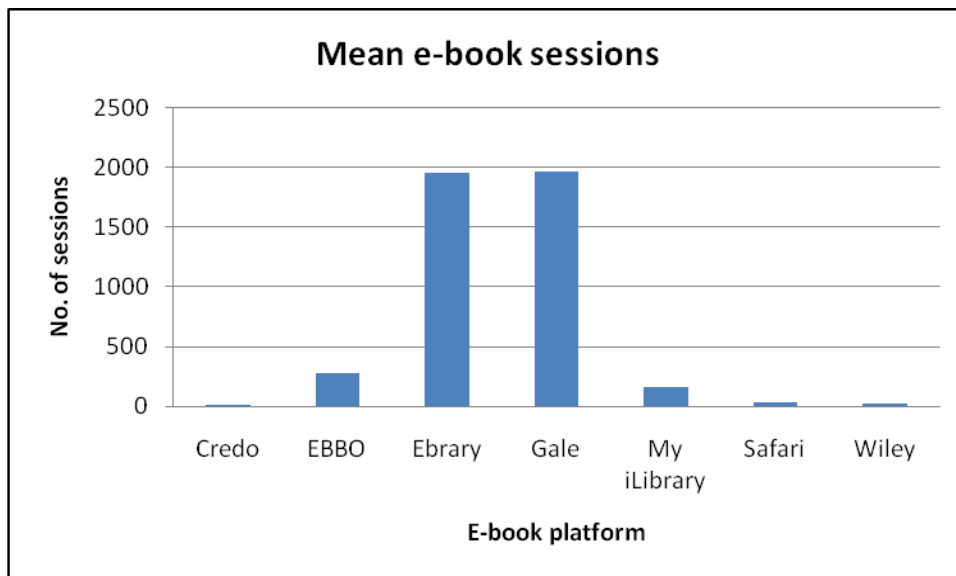
Figure 13 Mean e-book sessions by platform provider: graph illustration

The mean for ACLS resource was not calculated as COUNTER compliant statistics relating to total sessions by month and service could not be obtained from this platform. Without the number of sessions for ACLS it is difficult to gain an exact overview of e-book use. The addition of other resources such as essays and broadsides in Eighteenth Century Collections Online and periodicals in the Shakespeare Collection imply that statistics provided by the Gale platform relate to other resources other than e-books. The accuracy of the Gale e-books statistics is therefore questionable as they do not solely reflect e-book use. However this study is concerned with e-books statistics which subscribe to the COUNTER code and not all platforms such as Gale or ACLS adhere completely to the same principles of the code which results in discontinuity in output statistics.

4.4 E-book statistics: discussion

From the COUNTER statistics presented it is apparent that activity on each of the different e-book platforms follows an individual pattern according to the needs of its user. Periods of intense retrieval could be credited to information skills and induction programmes particularly at the beginning of the academic year or examination, assignment or research deadlines; however the level of e-book use fluctuates and this is illustrated by the graphs representing each platform. The statistics from each platform follow a distinct, individual sequence according to use. Intensity of use could also be accredited to the range and diversity of e-books available under the various platforms. E-book platforms that offer a considerable volume of e-books will undoubtedly appeal to a broader spectrum of users resulting in a higher degree of use.

Conyers (2006) for the NESLi2 study, the scheme which manages negotiations for e-journals, proposes ranges and subdivisions to indicate nil, low, medium and high use of electronic resources. The nil and low range applies to under 10 requests; the medium range relates to 10 – 99 requests and the high range pertains to 100 or more requests (p.41). If the criterion used by Conyers (2006) for NESLi2 study is applied to the COUNTER statistics evaluated in this dissertation then the usage pattern for the various e-book platforms generally falls into the high category.

In this study e-book use is "counted whenever an e-book is opened" (Langston, 2003, p24). Langston maintains that the level of usage cannot be determined by e-book

statistical reporting and in the same way the length of time spent reading an e-book is not measured by COUNTER statistics in the present study. Langston states that "usage reports do not indicate how a particular book is used" (p.28). Bailey (2006) maintains that the data generated by netLibrary for his study of e-book use at the Auburn University Montgomery Library did not provide any information about the actual use of the collection. Bailey advocates user surveys to investigate e-book behaviour and generate longitudinal data (p.59)

Another metric frequently used to gauge e-book use is the comparative analysis of e-books with their print counterparts. Littman and Connaway (2004) compared netLibrary e-book use on a title by title basis to its print equivalent. The study was conducted at Duke University libraries, examined 7,880 print titles and their e-book equivalents and was based on data supplied by netLibrary and print circulation statistics provided by the library management system. According to Littman and Connaway 3,158 e-books were accessed and 2,799 print books were issued. They discovered that 27 percent (1,125) of print titles were circulated but not used as an e-book, 34 percent (1,484) were used as e-books but the print title was not borrowed, whereas 39 percent (1,688) used both print and e-book titles.

Similarly Christianson and Aucoin (2005) compared netLibrary e-book titles and their print equivalents at Louisiana State University. They discovered that print stock was used more than the electronic books. However e-books had a higher average use and

they concluded that the e-books were used more extensively the than their print counterparts. Christianson and Aucoin (2005) point out the drawbacks to measuring print books use, they state that because of the open stacks "not all print use could be counted" (p.79). The same open access policy to print books is also in place at the McClay Library and it is difficult to measure all print use.

In the case of this present study, a title by title comparison would undoubtedly give a more accurate, comprehensive assessment of e-book use weighed against print book use. However this study was designed to give an indicative overview of e-book use at the Queen's University rather than an in-depth analysis. Further research involving specific titles could explore the analysis of e-books and their print counterparts more fully and allow further insight into the use of e-books. Although the COUNTER statistics provided by the different vendor platforms in this study gives an indication of e-books use, they do not, as Langston maintains, reveal what e-book titles are being used, how long users spend reading them or disclose user perceptions towards e-books. The decision to administer and analyse an e-books questionnaire amongst library users at the McClay Library, Queen's University Belfast attempts to address the shortcomings of the e-book COUNTER statistics and it is intended that the combination of the two methods will provide an acceptable insight into e-books use at the university .

4.5 E-books questionnaire

4.5.1 Response to the questionnaire

A total of 129 print questionnaires were administered to library users at The McClay Library, Queen's University over a one day period. A total of 112 questionnaires were completed by library users and this has formed the basis of the results of the second part of the investigative study into the use of and attitudes towards e-books at Queen's University.

42 percent (47 of the 112 respondents) of those participating in the questionnaire were studying at postgraduate or masters level. 21.4 percent (24 of the 112 respondents) were undergraduate students and 21.4 percent (24 of the 112 respondents) were PhD candidates. A further 9.8 percent (11 of the 112 respondents) were staff. 5.4 percent (6 of the 112 respondents) were the other category, comprising associate borrowers and students visiting from other universities. Table 17 illustrates what School or Department the respondents belong to. A wide range of respondents from the various academic Schools at Queen's University participated in the questionnaire. The School of Sociology and Social Work is the only school not represented. The highest response rate was from the School of Planning, Architecture and Civil Engineering who accounted for 19.6 percent (n=22) of the respondents (n=112).

Table 17: Question 2, Page 2: Which School or Department do you belong to? *n*=112

School of Biological Sciences	2.7%
School of Chemistry and Chemical Engineering	4.5%
School of Education	6.3%
School of Electronic, Electrical Engineering and Computer Science	5.4%
School of English	0.9%
School of Geography, Archaeology and Palaeoecology	2.7%
School of History and Anthropology	2.7%
School of Languages, Literature and Performing Arts	0.9%
School of Law	8.0%
Queen's University Management School	7.1%
School of Mathematics and Physics	6.3%
School of Mechanical and Aerospace Engineering	4.5%
School of Medicine, Dentistry and Biomedical Sciences	2.7%
School of Music and Sonic Arts	1.8%
School of Nursing and Midwifery	7.1%
School of Pharmacy	3.6%

School of Planning, Architecture and Civil Engineering	**19.6%**
School of Politics, International Studies and Philosophy	3.6%
School of Psychology	4.5%
School of Sociology, Social Policy and Social Work	0.0%
Other	5.4%

_____

4.5.2 Use of e-books

The questionnaire comprised nine questions in total. Six questions relate to the users use of, and attitudes towards e-books. Two questions ask for demographic details and the question at the end of the questionnaire is a non obligatory open comment box.

The results showed that 59.8 percent (67 of the 112 respondents) of users stated that they had used e-books at Queen's University (question 1). This figure falls short of the JISC National E-books Observatory project (2009) where 64.6 percent of university students and teachers (n=14,095) indicated that they are using e-books. The majority of the respondents in this study, 61.8 percent (42 of the 112) who use e-books indicated that they had sourced the e-books through QCat, the Library catalogue at Queen's University (question 2). This correlates closely with the findings of the JISC project which discovered that the library catalogue and library web pages are the main routes

by which users sourced e-books (p.6). The fact that the majority of e-book users are locating e-books through library sources would indicate that library promotion is working to a degree. However the fact that 40.2 percent (45 of 112) of respondents at the library at Queen's do not use e-books that are available through the library would suggest that a large proportion of users are unaware of the library efforts to promote and advocate the use of e-books.

The questions presented four statements which required participants to rank their responses on a Likert scale, indicating their level of agreement or disagreement. The tables illustrate the statements with the highest percentage of agreement or disagreement with the assertions. The questionnaire indicated that the abbreviated letters corresponded with the meanings as follows: (SA) strongly agree; (A) agree; (U) undecided; (D) disagree and (SD) strongly disagree.

In response to Question 3, 67 of the 112 respondents who stated that they used e-books provided by the Library at Queen's University were required to point to their reason(s) for using e-books. Table 18 and Figure 14 illustrate the highest rated answers from the 67 respondents who stated that they had used university library-provided e-books. The top answers were: they are free to use (56.9 percent), they are available 24/ 7 (53.8 percent) (percentage of respondents choosing strongly agree) and they are useful for quick reference (48.4 percent) (agree).

I use e-books because	SA	A	U	D	SD	Aver
They have been recommended for my reading /coursework	22.4%	25.9%	20.7%	12.1%	19.0%	2.79
They are available 24/7	**53.8%**	35.4%	4.6%	6.2%	0.0%	1.63
They are free to use	**56.9%**	32.3%	6.2%	4.6%	0.0%	1.58
I do not have to carry them	42.9%	27.0%	9.5%	17.5%	3.2%	2.11
No print copies are available	32.3%	26.2%	23.1%	13.8%	4.6%	2.32
They are easily searchable	20.6%	47.6%	14.3%	17.5%	0.0%	2.29
They are useful for quick reference	35.9%	**48.4%**	9.4%	6.3%	0.0%	1.86
They have useful features (highlighting, bookmarking, links to dictionaries, thesaurus etc.)	27.4%	25.8%	29.0%	14.5%	3.2%	2.40
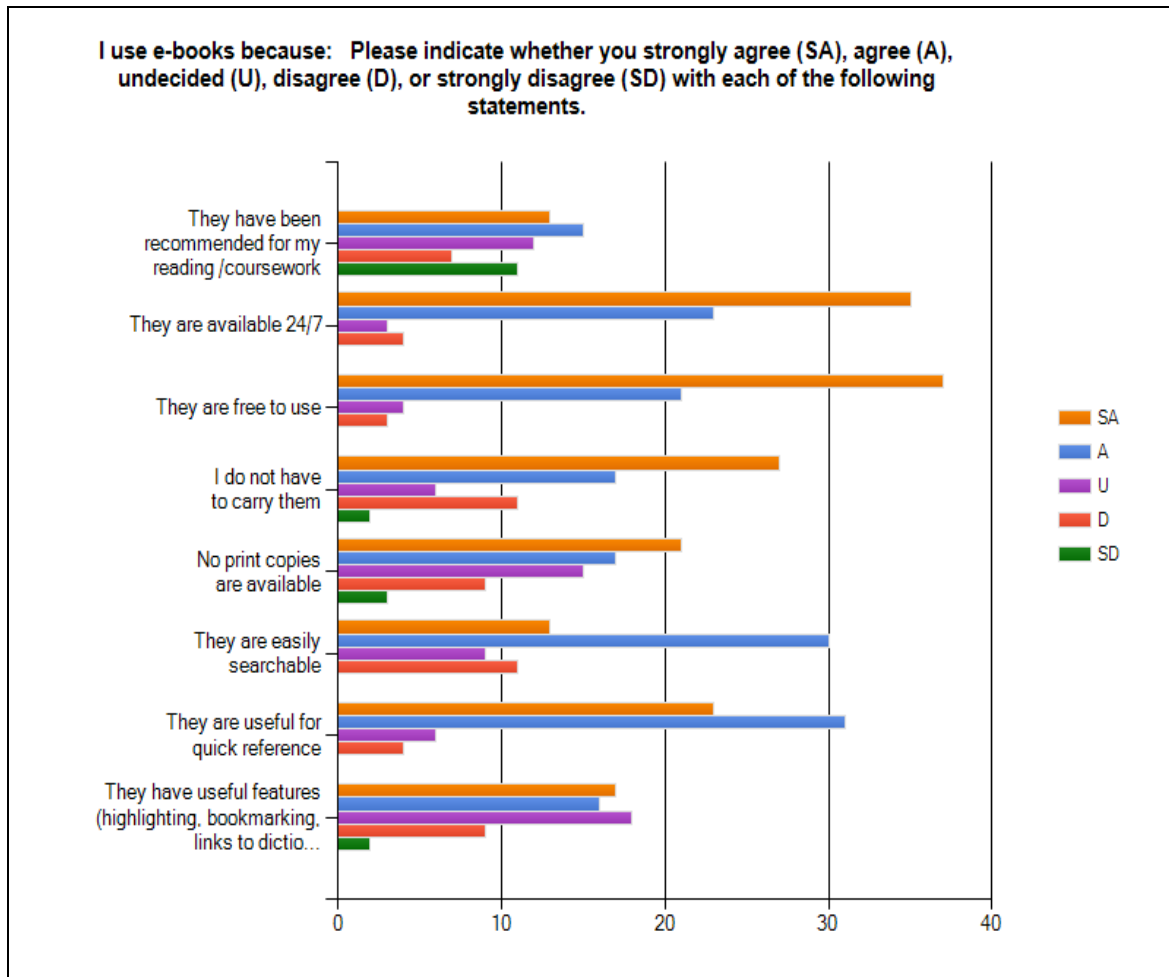
Figure 14 : Question 3, Page 1: I use e-books because: *n*=67

Question 4 asked users their purpose for using e-books. The three top-rated reasons from the 67 respondents, who had used e-books, were: to read one whole chapter (51.7 percent), for quick reference (50.8 percent) and to read several chapters (46.9 percent). This data is presented in Table 19 and Figure 15.

Table 19: Responses to Question4, Page 1: *n*=67

I use e-books	SA	A	U	D	SD	Aver
To read the whole book	3.4%	13.6%	6.8%	49.2%	27.1%	3.83
To read several chapters	15.6%	**46.9%**	6.3%	23.4%	7.8%	2.61
To read one whole chapter	21.7%	**51.7%**	16.7%	8.3%	1.7%	2.17
To scan	41.0%	44.3%	4.9%	8.2%	1.6%	1.85
For quick reference	**50.8%**	34.9%	6.3%	4.8%	3.2%	1.75
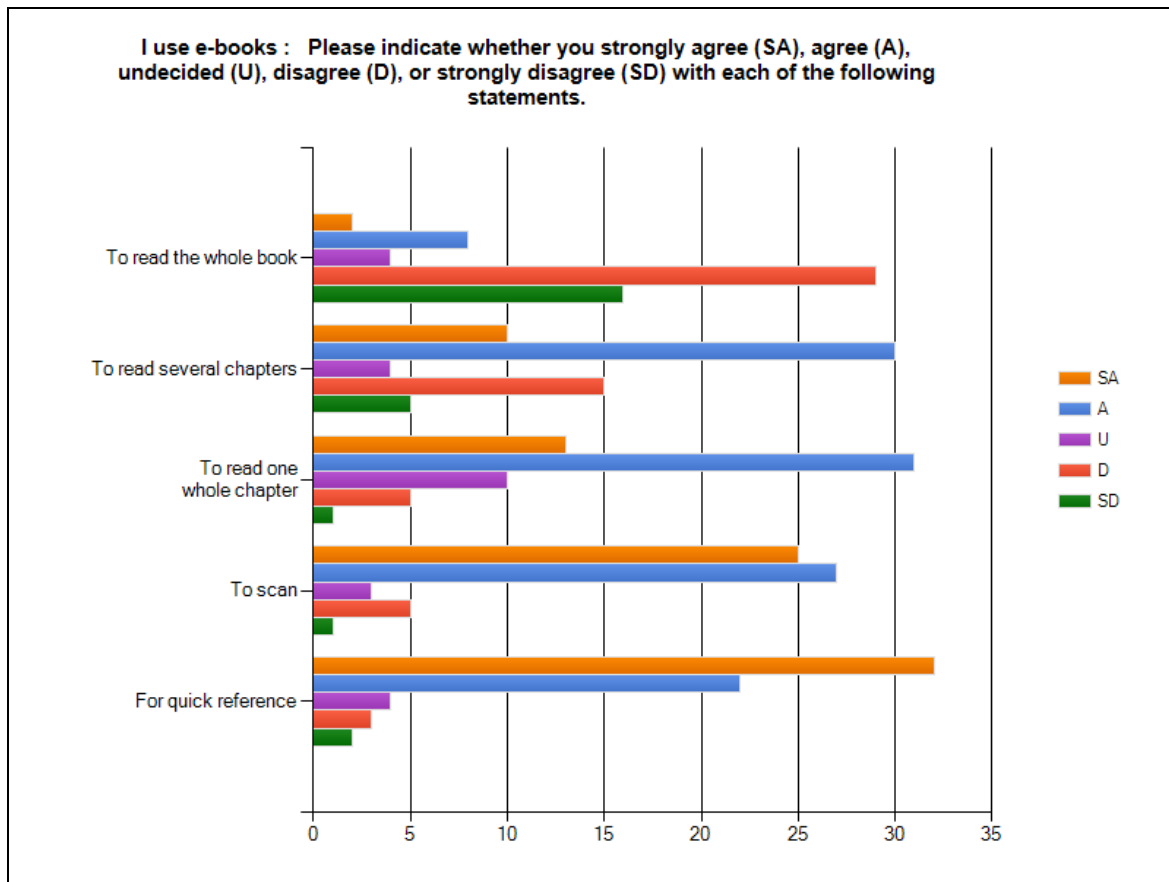
Figure 15 : Question 4, Page 2: I use e-books: *n*=67

Participants agreed with reading e-books for use of a single or multiple chapters while they strongly agreed with the statement that they used e-books for quick reference. A large percentage of respondents (49.2 percent) disagreed that they would read an entire e-book. This outcome is similar to that of the study conducted by Levine-Clark (2006) where 56.5 percent of 2,067 respondents used e-books to read a chapter, 36.4 percent read a single entry or sections and 80 percent would alternate between the two reading approaches.

The question must then be raised; are library users choosing to read limited amounts of text in e-books or is e-book technology impeding concentrated and prolonged reading practice? Appleton (2004) maintains that e-books tend to be read in "randomly accessed segments, rather than being read sequentially" (p.247). This would suggest that reading patterns have metamorphosed into a format complimentary to the reading of e-books. Levy (1997) refers to a "general societal trend toward shallower, more fragmented, and less concentrated reading" when discussing the development of digital libraries. (p.202). Over a decade later, Nicholas, Huntington, Tenopir, Jamali and Dobrowolski (2008) make reference to the "bouncing and power browsing form of information seeking behaviour" which is a characteristic activity of the current digital user (p.312) (Nicholas, Rowlands, Clarke, Huntington, Jamali and Ollé, 2008). They claim that users scan e-books for relevant sections or chapters to satisfy their information needs. This practice of scavenging e-books for relevant segments, chapters and quick reference seems to be the type of information seeking behaviour that library users allude to in response to being asked their purpose for reading e-books.

Appleton (2004) further maintains that certain types of book lend themselves to use in the electronic format more easily than others: "books that you consult or read in short sections are more suitable as e-books than those you read at length" (p.250). Sottong (2008) advocates choosing e-book titles that are used for reference or for a short time only. However this prescriptive approach would be inhibiting in a collection development policy in any institution and it would be preferable for e-books to be chosen based on the specific needs of users. Dillon (2001) maintains that certain subjects "lend themselves to the quick reference-style look ups common to Internet usage" (p.119).

4.5.3 Non use of e-books

A total of 45 questionnaire participants stated that they did not use e-books available from the library at Queen's. According to the Survey Monkey data analysis, 48 respondents answered this statement even though it only applied to those who stated that they did not use e-books. Therefore three users who had stated that they had used e-books at Queen's University also answered this question. The reasons for non use were queried in Question 5 where users had to state why they did not use e-books. 41.9 percent of respondents strongly agreed with the statement that they preferred printed books. 40.5 percent concurred that they are easily distracted, while 37.2 percent agreed that they disliked reading online. 45.5 percent indicated that they neither agreed nor disagreed with the assertion that they did not use e-books because there were no relevant titles for their module or subject (Table 20 and Figure 16).

Table 20: Responses to Question 5, Page 2: *n*=48

I do not use e-books because	SA	A	U	D	SD	Aver
Not aware they are available	31.0%	9.5%	7.1%	28.6%	23.8%	3.05
Prefer printed books	**41.9%**	39.5%	11.6%	4.7%	2.3%	1.86
Dislike reading online	27.9%	**37.2%**	18.6%	11.6%	4.7%	2.28
Not familiar with e-book technology /functionality	14.0%	30.2%	14.0%	18.6%	23.3%	3.07
No relevant titles for my module/subject	11.4%	20.5%	45.5%	13.6%	9.1%	2.89
I am easily distracted working online	14.3%	**40.5%**	14.3%	28.6%	2.4%	2.64
Need special equipment /internet connection	12.2%	12.2%	34.1%	26.8%	14.6%	3.20
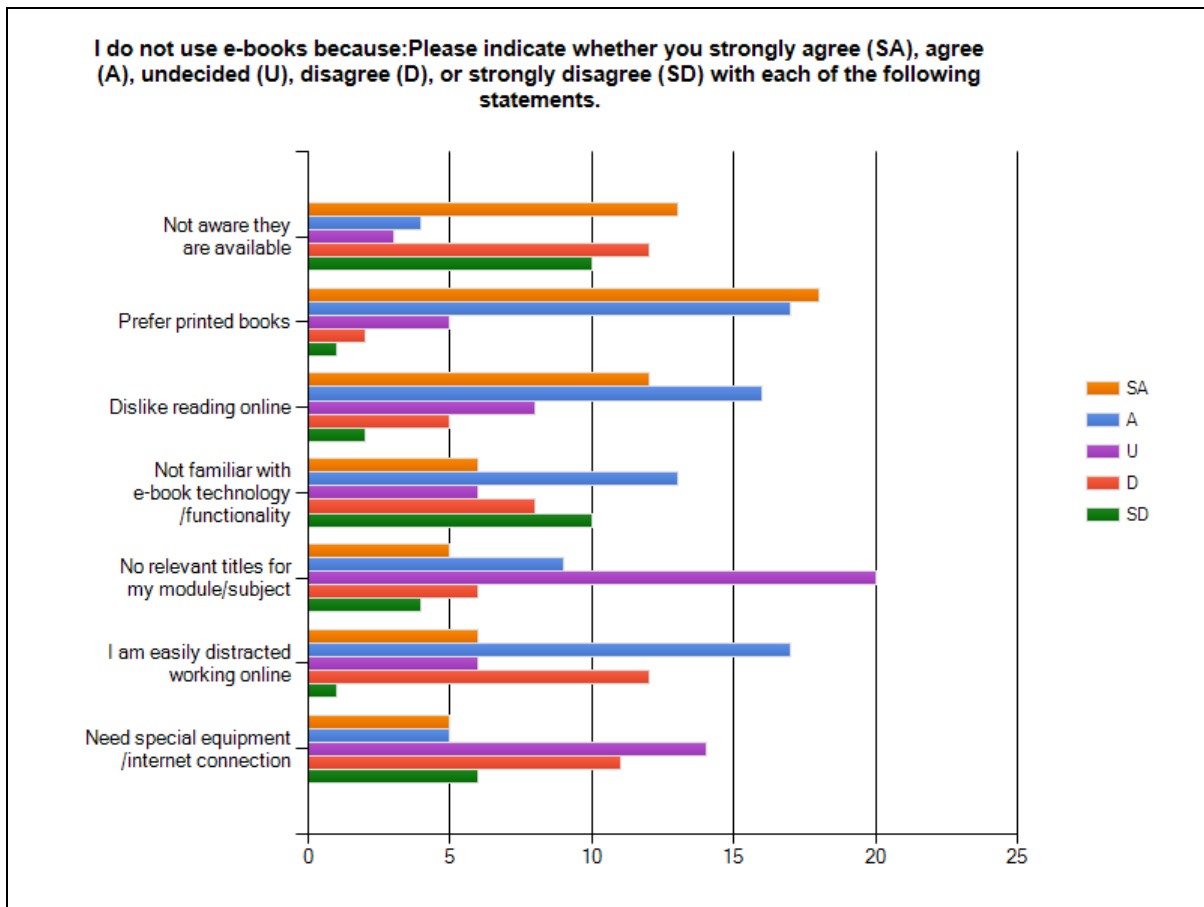
Figure 16: Question 5, Page 2: I use do not use e-books because: *n*=48

A predilection for printed books as opposed to electronic books has been demonstrated in other e-book studies. Langston (2003) found that given the choice of print or electronic books, 62 percent of 118 users opted for the print version. Ebrary's global survey in 2007 discovered that 79 percent of 906 faculty staff stated that they would be more inclined to use print books when reading a whole book or several sections.

4.5.4 Reasons to use e-books more, or for the first time

When users were asked if they would use e-books more or for the first time, 108 participants indicated their level of agreement or disagreement. This indicates that 4 users skipped this question. 38.2 percent strongly agreed and 37.3 percent agreed that they would use e-books more if there were more titles available that were relevant to their research. 33.3 percent agreed and 29.3 percent strongly agreed that if there was more information available this would act as an enticement towards using e-books. 31.6 percent disagreed that the availability of library PCs or laptops affected the uptake of e-books (Table 21 and Figure 17).

Table 21:Responses to Question 6: *n*=108

I would use e-books more or for the first time	SA	A	U	D	SD	Aver	
There was more information available	**29.3%**	**33.3%**	17.2%	16.2%	4.0%	2.32	
The library offered more training	17.7%	27.1%	20.8%	27.1%	7.3%	2.79	
There were more PCs/laptops available in the library	13.7%	20.0%	20.0%	31.6%	14.7%	3.14	
There were more titles available relevant to my research	**38.2%**	**37.3%**	16.7%	5.9%	2.0%	1.96	
The library provided e-book readers e.g. Kindles, iPads, Sony Readers	24.0%	31.3%	20.8%	16.7%	7.3%	2.52	

I would use e-books more/ for the first time if:Please indicate whether you strongly agree (SA), agree (A), undecided (U), disagree (D), or strongly disagree (SD) with each of the following statements.
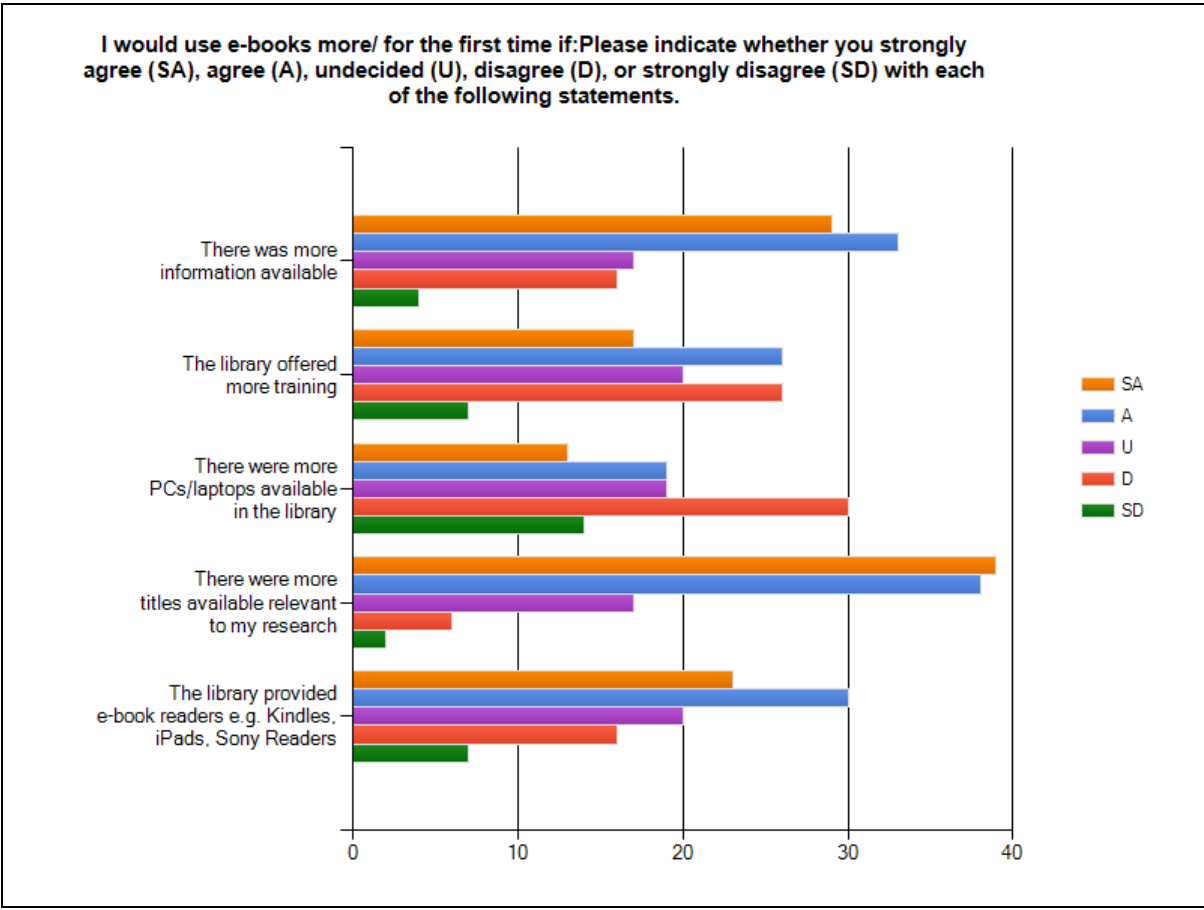
Figure 17: Question 6, Page 2: I would use e-books more / for the first time: *n*=108

The various e-book platforms at the library at Queen's University Belfast offer a wide range of multi-disciplinary titles. The fact that users feel that there is a lack of relevant titles to their area of study or research may indicate that they are unable to use the retrieval tools such as the QCat library catalogue or the relevant e-book databases listed on the library web page to effectively search for appropriate material.

4.6 Open text comments

30.4 percent (34 of 112) respondents included comments in the open text comment boxes. 58.8 percent (20 of 34); of responses were negative, 26.5 percent (9 of 34) were positive with a further 14.7 perecent (5 of 34) being neutral. A full list of the open text comments can be found in appendix xvi. The negative textual comments can be divided into several distinct categories: awareness issues, dislike of reading online, navigation problems, and a lack of relevant titles. This section details and discusses the open text comments.

4.6.1 Awareness issues

Lack of awareness was cited as the most common reason for not using e-books at a survey conducted at Royal Roads University (RRU), Canada, in 2009 (Croft and Davis 2010) and at University of West of England (UWE) in a study undertaken by Briddon *et al.*(2009) and a number of respondents of the e-book questionnaire in this study, maintain that the library should play a greater role in e-book advocacy.

> *"In general not completely sure what they are! I remember seeing one available on QCat when I searched for the following title 'Cement Chemistry' H. F. W. Taylor. Maybe an email could be sent around to all students reminding them about the e-books facility – maybe give some stats on amount of ebooks available"* (C.1)

> *"Didn't know the library had them until I read this! This would be a popular idea if more people were aware"* (C.11)

> *"Advertise them more through library – to highlight they are available"* (C.17)

Bennett and Landoni (2005) claim that "most users are willing to try them once their awareness has been raised" (p.14). Bennett and Landoni also point to a lack of endorsement by academic teaching staff as a key issue in raising awareness of the resource. As indicated by Briddon *et al.* (2009), the uptake and increased use of e-books is linked with user education and integration of e-books into the library catalogue and other online resources.

4.6.2 Dislike of e-books

Several respondents had issues with reading from the PC screen and cited problems such as eye strain as a primary reason for dislike of e-books.

> *"E-books are very useful, however if I am reading a book that I can hold, I am less likely to have sore eyes and a sore neck as I stare at the computer screen. In this case, iPads and Sony Readers would help reduce the stress of reading information off the computer screen."* (C.2)

> *"I find reading on the screen bad for my head/ eyes and also printing out large quantities from ebooks not very easy or environmentally friendly so overall I don't really like ebooks"* (C.19)

> *"While e-books are useful if you can't be in the library. I find reading from a screen can be difficult on the eyes at times and more difficult to concentrate on than hard copies. I only use an e-book if there is no hard copy available"* (C.30)

Kang, Wang and Lin (2008), conducted a study amongst junior college students, sponsored by the National Science Council in Taiwan, to evaluate the usability of e-books and found that e-books induce a significantly higher eye fatigue than print books. The fatigue was attributed to the low contrast and resolution on e-book interfaces. Kang *et al.* also maintained that the reading of printed books was a practice learned in childhood and users were naturally more inclined towards printed texts.

There also exists the viewpoint that e-books are somewhat inferior to their print counterparts. One of the respondent's states:

> *"Not a huge amount of e-books come up in searches I make on psychological topics – I tend to get real books"* (C.12)

The comment about 'real books' brings to mind Gregory's (2008) report on the survey conducted at the College of Mount St. Joseph's Archbishop Alter Library in 2004. Gregory recalls an incident where a member of the college library staff directed a "traditional-aged patron" to an e-book, and, according to Gregory, the patron retorted: "[b]ut I want a real book and gesticulated with her hands the opening and closing action of a book" (p.267). Gregory also commented that students would sometimes request a print copy of specific titles through inter library loan rather than use the available e-books. Gregory makes reference to the viewpoint that the print book is perceived as a "cuddle object", that users "like to have ... in hand/hold and take home" (p.270). Dillon (2001) also explores the idea of the printed book as a "physical object that ... was durable, and could be counted on to persist into the future just as it has always persisted in the past" (p.350). He describes the printed book as a tangible and concrete object which has distinct connotations of knowledge and trustworthiness: "the very physical heft and feel of the printed book suggested ... both words and wisdom" (p.350). It is also clear from the open text comment in the questionnaire conducted at Queen's University Belfast that a predilection for printed texts still exists amongst certain users.

4.6.3 Navigation problems

The assertion that the navigational aspects of e-books cause problems for users could be related to user issues with e-book interfaces and perhaps indicates the need for the library to initiate more user instruction. Comments such as:

> *"I find scrolling down much more tedious and difficult than browsing through a book"* (C.21)
>
> *"search engine for words could be better"* (C.6)
>
> *"Sometimes hard to navigate through/ search"* (C.2)
>
> *"Many times they are not user friendly. The scrolling etc. is not attractive to me"* (C.31)

relate to the ergonomics of reading online which is intrinsically linked to user preference for printed books.

4.6.4 Lack of relevant titles

A lack of relevant titles was the statement most questionnaire participants agreed with in response to Question 6, and a number of open text comments echoed this response.

> *"I use them personally but I just don't find or hear of many for my university work. I mostly use research journals"* (C.23)
>
> *"More cell signalling texts should be available"* (C.28)

As already discussed, user education could establish better practices in sourcing relevant e-books, which would make better use of existing subscribed resources. Soules (2009) claims that "librarians are the key brokers for students and faculty in the use of e-books" (p.16).

4.6.5 Affirmative comments

While the aforementioned comments have focused on the negative responses, a number of affirmative comments were included on the questionnaires. The responses refer to advantages which have been cited in other e-book studies. They include portability:

> *"I think it is a brilliant idea. Some of our books are extremely heavy and as we also need our notes our bags are packed to the top. As there are no lockers provided to us we end up with sore shoulders and backs from carrying heavy books so I think e-books is a great idea."* (C.32)

convenience of access:

> *"Generally find e-books very accessible and easy to use."* (C.15)

and useful for quick reference.

> "*There should be more available, they are super for a quick detailed scan."*
> (C.24)

However while many of the comments focus on the positive aspects of e-books they are also imbued with suggestions for improvements to the e-books service.

> *"Accessible at anywhere and organize a programme or awards to encourage people using e-book for awareness."* (C.27)

The open text comments undoubtedly provide a valuable insight into user attitudes towards and perceptions of e-books.

4.7 Conclusion

This chapter presented an analysis of COUNTER statistics from the e-book platforms. The various metrics examined included the number of sessions, searches performed

and successful section requests. The COUNTER compliant statistics allowed data from several different vendor platforms to be measured in a standard and consistent manner. The COUNTER statistics were represented figures in table format and also as line graphs using Microsoft Excel to indicate use. This section of the chapter concludes with a calculation of the mean number of e-book sessions in order to summarize usage and discussion of the results in relation to previous e-books research. The indication from the analysis of the COUNTER statistics is that e-books usage is varied according to each platform and this may be the result of fluctuating teaching practices or the variable demands of research within certain disciplines. Another factor influencing the use of e-book databases is the availability of a wide selection of titles under one platform. The heavily used platforms tended to be those which provided access to a wider range of e-books.

The second part of the chapter analyses the findings of the print e-book questionnaire administered to users at the McClay Library. The questionnaire was crucial in supplementing the data provided by the COUNTER e-book statistics. The findings provide user responses concerning the use and non use of e-books, an indication of the purpose of use of e-books and reasons to utilise e-books either for the first time or on a more frequent basis, drawing on previous e-book research throughout. The questionnaire findings section concludes with a review of the open text comments boxes and deduces that the uptake and efficient use of e-book databases is heavily dependent on library promotion through user education, and the integration of e-book resources into the library catalogue and web page.

Chapter 5: Conclusion

5.1 Introduction

The purpose of this research was to examine e-book use and gain an insight into the perceptions of users regarding e-books at Queen's University Belfast. The research aimed to measure levels of e-book usage, identify patterns or trends of use over a given period, enquire why users were using e-books and discover what would motivate users to make better use of e-books, or increase uptake of e-books, among non-users. Littman and Connaway's (2004) assertion that the evaluation of e-books is needed to justify expenditure on the resource was a major impetus for the study. The outcomes of the research would be used to demonstrate the value of e-books when formulating future collection development policies for the university. The research was also intended to contribute to the ongoing investigation into how e-books are being used in academic libraries. This final chapter details to what extent the aim of the research has been realised and makes recommendations for further research.

5.2 Literature Review

The literature review established common themes within e-book research. It detailed how resource discovery was linked to increased usage of the resource. According to Pan (2006), "the best purchases are effectively worthless if they cannot be found, and in this e-books are no exception" (p.S15). Various e-book studies have shown that there are several advantages to e-books including 24 / 7 availability, remote access, convenience of navigation and key word searching and cost. The review of literature on

e-book studies revealed that users hold a number of negative connotations in relation to e-books such as issues pertaining to eye strain when reading online, problems relating to navigation and searching and a preference amongst users for the tactile nature and the traditional format of printed texts. Previous research highlighted the difficulties experienced by libraries when integrating platforms from diverse e-book aggregators. These e-book platforms support different interfaces and contain different functionalities which can lead to problems educating users. It also leads to problems within acquisitions as different business models must be supported.

5.3 Methodology

This dissertation measured the use of e-books at the McClay Library, Queen's University Belfast through the appraisal of COUNTER statistics from the various e-book platforms. The metrics evaluated included the number of successful title requests by month and title, and total searches and sessions by month and service. The statistics were then displayed in table and graph format to allow for the interpretation of trends in use throughout the period September 2009 to June 2010. A calculation of the mean number of sessions identified the most heavily used e-book platforms.

In addition to analysing the COUNTER statistics from the various e-book providers, the research sought the opinions of users regarding e-books through a print questionnaire primarily quantitative in nature. However the inclusion of Likert style questions and the option to include open text comments on the questionnaire produced qualitative data.

The questionnaire results were analysed by entering the data into a Survey Monkey Professional account.

5.4 Results

The results of the COUNTER statistics show that e-book usage was diverse among the different platforms. Overall the statistics indicate that various e-book platforms are well used, however the use of each platform varies. The fluctuations in use could be attributed to sporadic requirements of coursework or changes in research patterns in the university. The platforms that received the greatest use were those providing access to a large number of e-books.

The findings of the print e-book questionnaire revealed that the majority of those surveyed (59.8 percent of 112 respondents) use e-books provided by the library at Queen's University Belfast. The preferred channel for finding e-book resources was through QCat, the library catalogue. The predominant reasons given for e-book use were: they are free to use, they are available 24/7 and they are useful for quick reference. Participant responses indicated that users tended to use e-books for reading one whole chapter, for quick reference or to read several chapters. The main reasons given for non e-book use was a preference for printed books, being distracted easily when working online and a dislike of reading online. When users were asked what would entice them to use books more or to try them for the first time the two chief responses were: if there were more titles available that were relevant to research, and,

if there was more information available. 30.4 percent of questionnaire participants (34 of 112) added comments in the free text, 58.8 percent of the comments (34) had negative implications.

The questionnaire was essential in providing data that substantiated the COUNTER e-book statistics. The results of the questionnaire offer an insight into user perceptions regarding e-books and allow for the formulation of strategies designed to increase the uptake and use of e-book resources.

5.5 Recommendations

Policies aimed at raising the profile of e-book resources and encouraging the use of e-book are essential within a collection development planning process. Lonsdale and Armstrong (2010) maintain that promotional planning for e-resources should be incorporated into a strategic plan and state that this proposition is supported by other research studies (Woods, 2007; Schmidt, 2007; Turner *et al.*, 2004; Pan et al., 2009 cited in Lonsdale and Armstrong 2010 p.188).

Dinkleman and Stacy-Bates (2007) advocate increasing e-book exposure by making them visible on several levels including the library catalogue and library website.

> "Multiple access routes increase the likelihood that patrons will locate the information they are seeking" (p.47)

Promotion of e-books is also necessary in order to appeal to users with different learning styles as well as to those seeking an alternative to the print copy which they cannot obtain.

Langston (2003) maintains that the "issue of users being uncomfortable with electronic resources can be viewed as an issue of user education" (p.29). Devising e-book workshops and training sessions could alleviate negative associations with e-books.

The endorsement of e-books by academic teaching staff would undoubtedly increase usage of the resource amongst users. Links to e-books or relevant sections of e-books on the recommendation of academic teaching staff have already been included on Readings Online, a scheme where relevant articles and chapters for individual modules are made available collectively on Queen's Online, the University's Virtual Learning Environment (VLE). The convenience of material such as e-books, being made readily available to users on Readings Online and the support of teaching staff indisputably increases awareness leading to word of mouth marketing and ultimately to increased use.

The Library at Queen's University Belfast has successfully established an online presence on Facebook and Twitter. The advertisement of e-books on these sites would raise awareness of the resource and encourage user interaction. The feedback and interaction received from users would in turn inform and develop future user training.

The adoption of new technology such as the Kindles and Sony Readers would act as advocacy for e-books. Five Kindle DXs with a number of planning e-book titles have been purchased by the Library for the School of Planning, Architecture and Civil Engineering (SPACE) at Queen's The 'Check out a Kindle' project, which was launched in September 2010, aims to broaden students' experience using new technology, extend students' reading and knowledge skills; alleviate some of the demand for heavily borrowed items and facilitate users with disabilities (appendix xvii). If the project is deemed a success other e-readers will be acquired and titles for other subject areas purchased.

The willingness of respondents to provide open text comments signifies the need for further research and evaluation. Queen's University Libraries currently undertake a number of surveys (Book Availability Surveys, Short Loan Surveys) throughout the academic year and an annual assessment of e-book use could be incorporated into Information Service's Divisional Objectives. Further research could be in the form of either a large scale questionnaire distributed throughout Queen's libraries to gather the views of a wide range of library users, or a small scale study concentrating on particular Schools or subject areas. A comparative analysis of print titles and their e-book counterparts similar to other e-book studies would also be beneficial. Focus groups and personal interviews with users would generate supplementary qualitative data which would inform promotion approaches and user education.

5.5.1 Summary of recommendations

- E-resources Strategic Plan incorporated into Divisional objectives

- Incorporate e-books into Library Catalogue (QCat)

- Make e-books more prominent on Library web site

- Facilitate user education: workshops and training sessions

- Endorsement and recommendation by Academic teaching staff

- Increase exposure on Queen's Online

- Word of Mouth Marketing WOMM

- Advertise e-books on Facebook / Twitter

- Endorse new technology i.e. kindles, Sony Readers

- Encourage user communication on e-books via:

    o Large scale / small scale concentrated questionnaire (print / electronic) administered across all Queen's University Libraries

    o Focus groups to obtain further qualitative data

5.6 Conclusion

While this study gives an indication of e-book use and user perceptions of e-books it does not describe in detail the types of e-books being used or document how exactly users are exploiting them. This was beyond the scope of the current study both in terms of time and resources available. Further investigation involving focus groups and a large scale questionnaire distributed throughout all the branches of Queen's University's Libraries and over a longer time span would undoubtedly give more information about the use and manner of use of e-books.

Nonetheless this current study builds on previous research in the field of e-books and a number of parallels can be drawn between the results of this study and the research considered in the literature review. This overview of e-book use at Queen's University is a study not previously undertaken by the library. However the requirement of universities to rationalize resources, particularly in the current economic downturn, will ensure that libraries must continually provide a thorough assessment of resources, resulting in ongoing evaluation to justify expenditure.

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Appendices

Appendix i: E-books webpage at Queen's University Belfast

Appendix ii: e-book questionnaire

e-books questionnaire

<div style="text-align: right;">☐ ☐ ☐</div>

This research project is being undertaken as part of a Masters in Library & Information Studies at **Aberystwyth University**. It aims to explore the use of and attitudes towards e-books amongst library users at Queen's University Libraries.

All responses will be treated confidentially and all data will be destroyed once the results are published. If you have any queries regarding this questionnaire please email g.obeirn@qub.ac.uk

_____

I hereby, understand that by completing this questionnaire I am giving my consent for the data I have provided to be used for the process of research.

1. Do you use e-books that are available from the Library at Queen's University?
   ☐ Yes
   ☐ No

2. How did you find out that the Library at Queen's University provides e-books? (tick one)
   ☐ QCat (Online catalogue)
   ☐ Library website
   ☐ Library staff
   ☐ Lecturer
   ☐ Queen's Online
   ☐ Students
   ☐ Other (please specify) _____

   Please indicate whether you (1) strongly disagree (SD), (2) disagree (D), (3) undecided (U), (4) agree (A), or (5) strongly agree (SA) with each of the following statements. Circle only one answer for each statement.

3.	I use e-books because :	SD	D	U	A	SA
(a)	They have been recommended for my reading / coursework	1	2	3	4	5
(b)	They are available 24/7	1	2	3	4	5
(c)	They are free to use	1	2	3	4	5
(d)	I do not have to carry them	1	2	3	4	5
(e)	No print copies are available	1	2	3	4	5
(f)	They are easily searchable	1	2	3	4	5
(g)	They are useful for quick reference	1	2	3	4	5
(h)	They have useful features (highlighting, bookmarking, links to dictionaries, thesaurus etc.)	1	2	3	4	5

4.	I use e-books :	SD	D	U	A	SA
(a)	To read the whole book	1	2	3	4	5
(b)	To read several chapters	1	2	3	4	5
(c)	To read one whole chapter	1	2	3	4	5
(d)	To scan briefly	1	2	3	4	5
(e)	No	1	2	3	4	5

5.	I do not use e-books because	SD	D	U	A	SA
(a)	Not aware they are available	1	2	3	4	5
(b)	Prefer printed books	1	2	3	4	5
(c)	Dislike reading online	1	2	3	4	5
(d)	Not familiar with e-book technology /functionality	1	2	3	4	5
(e)	No relevant titles for my module/subject	1	2	3	4	5
(f)	I am easily distracted working online	1	2	3	4	5
(g)	Need special equipment /internet connection	1	2	3	4	5

6.	I would use e-books more/ for the first time if	SD	D	U	A	SA
(a)	There was more information available	1	2	3	4	5
(b)	The library offered more training	1	2	3	4	5
(c)	There were more PCs/laptops available in the library	1	2	3	4	5
(d)	There were more titles available relevant to my studies /research	1	2	3	4	5
(e)	The library provided e-book readers e.g. Kindles, iPads, Sony readers	1	2	3	4	5

7. Are you

☐ Undergraduate ☐ Postgraduate/Masters ☐ PhD ☐ Staff
☐ Other (please specify) _____

8. Which School or Department do you belong to?

_____

9. Please write any additional comments you may have on e-books

_____
_____

Thank you. Your input is greatly appreciated.

Appendix iii: Consent letter

Dear Elizabeth,

As part of a Research project for Master's Dissertation MScEcon Information and Library Studies at the Department of Information Studies, Aberystwyth University I will be conducting a study on the use of and attitudes towards e-books amongst library users at Queen's University Libraries. The study will involve:

- Data analysis of e-books statistics provided by the different e-book providers

- Print/online questionnaire administered to library users at The McClay Library site

Participation in the questionnaire by library users in this study is entirely voluntary.

There are numerous benefits to this study; the research carried out will be of great benefit to the library, and ultimately to the library users; it will evaluate awareness and usage of e-books; and offer the opportunity to learn from this research project and compare findings with other UK academic libraries.

This study has been approved by my Dissertation Supervisor Lucy Tedd. It has been designed in accordance with the *Statement of Ethical Practice for the British Sociological Association*. All print / electronic questionnaires will be kept securely in accordance with the Data Protection Act 1998 and will be destroyed at the end of the study.

If you have any questions or concerns about this study, please do not hesitate to contact me:

Geraldine O Beirn

Science and Engineering Team

The McClay Library

10 College Park

Belfast

Appendix iv: The McClay Library Peak Occupancy: June 2010

The McClay Library June 2010 Peak Occupancy	
Day / Month	Peak occupancy
01/06/2010	265
02/06/2010	168
03/06/2010	277
04/06/2010	273
05/06/2010	317
06/06/2010	Closed
07/06/2010	699
08/06/2010	293
09/06/2010	304
10/06/2010	253
11/06/2010	619
12/06/2010	298
13/06/2010	Closed
14/06/2010	298
15/06/2010	264
16/06/2010	257
17/06/2010	554
18/06/2010	270
19/06/2010	273
20/06/2010	Closed
21/06/2010	313
22/06/2010	325
23/06/2010	243
24/06/2010	206
25/06/2010	214
26/06/2010	129
27/01/1900	Closed
28/01/1900	114
29/01/1900	115
30/01/1900	95
Total	7436
Average	286

Appendix v: ACLS Humanities E-Book search page

Appendix vi: Credo Reference search page

Appendix vii: EEBO search page

Appendix viii: ebrary search page

Appendix ix: ECCO search page

Appendix x: The Shakespeare Collection search page

Appendix xi: MyiLibrary search page

Appendix xii: Safari search page

Appendix xiii: Safari custom page

Appendix xiv: QUB A-Z list of Wiley Electronic Books

Appendix xv: Wiley Online Library

Appendix xvi: Open text comments

Please write any additional comments you may have on e-books

1. In general not completely sure what they are! I remember seeing one available on QCat when I searched for the following title 'Cement Chemistry' H.F.W. Taylor. Maybe an email could be sent around to all students reminding them about the e-books facility - maybe give some stats on amount of ebooks available.

2. Sometimes hard to navigate through/ search.

3. Sounds like a good idea.

4. E-books are very useful, however if I am reading a book that I can hold, I am less likely to have sore eyes + a sore neck as I stare at the computer screen. In this case iPads + Sony Readers would help to reduce the stress of reading information off the computer screen. Finally e-books have no-one else's writing on them.

5. Quick reference, free, easy to find (don't have to leave computer)

6. search engine for keywords could be better

7. IT very helpful while doing assignments

8. Added into PG training course regarding to ref work introduction.

9. Difficult to copy + paste at times, as content is not replicated exactly.

10. I don't use them very much due to the availability of other research sources.

11. Didn't know the library had them until I read this! Think it would be a popular idea if more people were aware.

12. Not a huge amount of e-books come up in searches I make on psychological topics - tend to get real books

13. I find them not to be particularly user friendly particularly on a regular PC, and tend to only use them as a last resort.

14. Great instead of carrying around many, many heavy books.

15. Generally find e-books very accessible and easy to use.

16. Very bad quality if you want to print a chapter and difficult to specify page numbers for printing as page numbers on electronic copy differ from printing pages. Again when you print pages the definition and quality is very poor to unreasonable.

17. Advertise them more through library- to highlight that they are available.

18. Comments mostly about ejournals

19. I find reading on the screen bad for my head/ eyes and also printing out large quantities from ebooks not very easy or environmentally friendly so overall I don't really like ebooks!

20. No need for them in purely Chemistry context although access to research papers if greatly appreciated.

21. I find scrolling down much more tedious and difficult than browsing through a book.

22. Unaware ebooks are available and benefits would be of most if publicized

23. I use them personally but I just don't find or hear of many for my university work. I mostly use research journals.

24. There should be more available, they are super for a quick detailed scan.

25. I use Knovel mostly - but it could do with more books.

26. I think they are a great idea, I didn't know we had this facility so I am going to look now!!

27. Accessible at anywhere and organize a programme or awards to encourage people using e-book for awareness.

28. More cell signalling texts should be available. There should definitely be more advertising on QUB library website to raise awareness of e-books.

29. Harder to use than PDF's

30. While e-books are useful if you can't be in the library. I find reading from a screen can be difficult on the eyes at times and more difficult to concentrate on than hard copies. I only use and e-book if there is no hard copy available.

31. Many times they are not user friendly. The scrolling etc. is not attractive to me.

32. I think it is a brilliant idea. Some of our books are extremely heavy and as we also need our notes our bags are packed to the top. As there are no lockers provided to us we end up with sore shoulders and backs from carrying heavy books so I think e-books is a great idea.

33. E-books are useful but often if reading for a long time I would prefer hard copies

34. Still yet to use them

Appendix xvii: Check out a Kindle webpage at Queen's University Belfast

The Library

Library Catalogue (QCat)

Online Resources

QSearch

E-Journals

E-Books

Online Resources by Subject

Arts and Humanities

Engineering

Medicine and Health Sciences

Physical and Life Sciences

Social Sciences, Education and Law

Refworks

SciFinder Scholar

Web Search Engines

Researchers' Handbook

Using the Library

The McClay Library

Medical and Healthcare Library

AFBI (Agri-Food and Biosciences

Check out a Kindle!

Information Services (IS) has been awarded a grant from the Queen's Annual Fund for an Amazon Kindle project targeting the School of Planning, Architecture and Civil Engineering (SPACE). Five Kindle DXs have been purchased for loan to students and staff. E-books have also been purchased and loaded on the Kindles. If the project is successful, it will pave the way for the service to be expanded to include other schools and e-readers from other manufacturers.

E-books

The Kindle e-books all relate to planning. Due to publisher restrictions, the titles on Kindles 1 to 4 differ from those on Kindle 5:

- E-books on Kindles 1 to 4
- E-books on Kindle 5

Borrowing

- Available from the Borrower Services Desk in the McClay Library
- Limit of one Kindle per student or member of staff
- Loan periods:
    - Undergraduate - 4 weeks
    - Taught Postgraduate - 4 weeks
    - Research Postgraduate - 12 weeks
    - University Staff - 12 weeks