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# A Survey of e-Book Awareness and Usage amongst Students in an Academic Library

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This paper reports on an online survey of e-book awareness and usage level in a British academic library. The main objectives of this survey were to: (a) assess students' awareness of the availability of e-books in their academic library; (b) measure the level of e-book usage among the students; and (c) identify the reasons why students do or don't use e-books. A self-selected sampling method was employed to generate a sample of students consisting of undergraduate and postgraduate instructional students registered with the University of Strathclyde for academic year 2005/6. An announcement email was posted to the student web portal for a period of three weeks inviting them to participate in the survey. A total of 1372 of responses were returned representing just under 10% response rate. In general, this survey found that e-book awareness was low as was the level of e-book usage amongst the students: 57% of students were not aware of the availability of e-books from the library and 60% of them had not used an e-book. Non-users commented that e-books were not widely advertised or promoted which has most probably contributed to this lack of awareness and non usage. Despite the low levels of e-book awareness and usage, non e-book users indicated their desire to learn more about e-books.

## 1 INTRODUCTION

At its simplest an e-book is a book, or text, that has been created in, or converted to, a digital form. Many attempts have been made to classify the types of e-book. For example, Hawkins [1] categorised e-books into four different types according to their accessibility whereas Crawford [2] identified nine types of e-books based on various facets including their formats, standard, and length of content. E-books can also be characterised in terms of how the e-book can be displayed or read: on a computer through a network; a standalone desktop PC, notebook or PDA [3,4]; using e-book reader software (e.g. Adobe Acrobat eBook reader); on a dedicated hardware device (e.g. an eBookman); or via the web [5]; Chen [6], on the other hand, defines e-books in terms of four perspectives: media, device, delivery and content.

This paper describes a survey which forms one part of larger study into the usability and use of e-books. For the purpose of this survey, e-books have been restricted to electronic forms of a book that can be viewed and read on a computer or portable device e.g. Palm. The relevant e-book formats have consequently been spilt into two broad categories: (a) computer-based e-books which can be viewed directly on a computer or downloaded as files for later reading and (b) device-based e-books which need a specialised e-book reader (e.g. Sony Reader) or a PDA (e.g. Palm Pilot). This survey has also categorised e-books on the basis of their function. These are: (a) textbooks which are used for formal study of a subject and which are often read in their entirety; (b) reference books which are consulted to find a specific piece of information or a fact (e.g. a dictionary or an encyclopaedia); and (c) manuals or instructional books which contain specialist procedures or instructions for a particular task (e.g. the Manual of Chemistry Analysis or a computer programming manual).

Usage reports from e-book providers usually provide relatively limited data as to how e-books are being viewed or consulted. Typically they provide reports on the number of accesses by subject or title and lists of the most popular e-books, i.e. they detail what books are used rather than how they are used. As a result, assumptions are often made about features which readers find useful when viewing or consulting e-books. Therefore this survey should be beneficial in terms of obtaining a better understanding of e-book usage among students, and the reasons why students do, and do not, use e-books.

## 2 RESEARCH OBJECTIVES AND METHODOLOGY

This survey has investigated e-book awareness among students in a British academic library and their level of e-book usage. The main objectives of this survey were to: (a) assess students' awareness of the availability of e-books in their academic library; (b) measure the level of e-book usage among the students; and (c) identify the reasons why students do or don't use e-books. A self-selected sampling method was employed to generate a sample of students consisting of undergraduate and postgraduate students registered with the University of Strathclyde for academic year 2005/6.

The online questionnaire was designed using HTML coding and a CGI program as a front end to receive the survey data. It was then placed on a server in the department of Computer and Information Sciences at University of Strathclyde which also acted as the repository for all collected data. The online survey was divided into two sections: (a) the first section was targeted at respondents that had used e-books before; (b) the second section was for respondents that had never used an e-book. The reasons for splitting the questionnaire were to ensure that both types of respondents were directed to the appropriate questions and to facilitate data analysis. The online survey consisted of questions that required respondents to provide information on their demographic characteristics, with the remaining questions being designed to measure the respondents' awareness of e-books and their usage levels. At the end of the online survey respondents were also given the opportunity to supply any comments regarding e-books. In addition the respondents were asked if they would be willing to participate in a follow-up survey.

## **2.1 Pilot Testing**

Before conducting a full scale survey, the online survey was pilot tested in early May 2006 at another local university through its online library catalogue webpage. The respondents accessed the questionnaire via a hyperlink provided on the library webpage. For the full scale survey, an announcement email was posted on the University of Strathclyde student web portal (Pegasus) inviting them to participate in the survey over a three week period from the end of May until early June 2006. Two different methods for disseminating the online survey were necessary as there were constraints regarding the access rights of the researchers to student information systems when they were not employees of another university. As one of the methods was used for pilot testing, and hence was primarily interested in how easily a student could participate in the survey, this is not considered to be a limiting factor.

No changes to the questionnaire were found to be necessary after the pilot testing. However, the data storage method was modified: instead of storing survey data separately from email addresses, they were stored together in order to filter out multiple submissions. If two or more responses were recorded from the same e-mail address, only one response (the first one) was analysed and the rest were deleted. A total of 50 respondents answered the pilot survey. Of these, the majority (58%) were aware of the availability of e-books from the library. The pilot survey revealed there was a 54% level of e-book usage among students, with e-textbooks being the most popular category.

## **3 RESULTS AND DISCUSSION**

A total of 1372 of responses were returned in the full survey out of a target population of 14,142, representing just under a 10% response rate. The target population consisted of all undergraduate and postgraduate instructional students registered in academic year 2005/6. The survey showed that 54% of the respondents were female, 45% of them were male, with the remainder declining not answer to the question. The majority of the respondents (90%) were undergraduate students, with only 11% of them being postgraduate students. The responses were spread across disciplines which were categorised as business, humanities, social sciences, medicine, science, engineering and other, with the highest (22%) coming from the sciences and the lowest (2%) from the humanities. This result is interesting as the humanities are normally perceived as being more book-oriented. The most likely explanation is that science students are more technology oriented and thus more at home with digital information in the broad.

### **3.1 Students' Awareness of the Availability of e-Books in an Academic Library**

Given the definition of an e-book as "an electronic form of a book that can be viewed and read on a computer or portable device e.g. Palm", 72% of the respondents signified that they were familiar with the term e-book before the survey. However a majority of them (57%) pointed out that they were not aware of the e-book availability from the library. This is in contrast with Bennett and Landoni's [7] findings where 54% of their respondents were aware e-book holdings in the library. When asked about how they found out that the library held e-books, 50% indicated that it was from the library website, 22% from a lecturer, 13% from other sources and 8% from a librarian. It is interesting to note that respondents who answered "other" to this question indicated that they found out that the library held e-books from participating in the survey, with friends or the library catalogue being other minor sources.

### **3.2 Total Level of e-Book Usage**

The findings revealed that a majority of the students (60%, 823 out of 1372) had not used an e-book

before. This is in line with the findings of previous studies: Ismail and Awang Ngah [8] reported that 61% of their respondents had not used e-books before their survey; Chu [9] found that 67% of respondents had not used e-books; Bennett and Landoni [7] found that 61% of their student respondents were not e-book users and Anuradha and Usha [10] also found that 66% of their respondents had not used e-books on a trial basis. These findings are shown in the Fig.1 below:

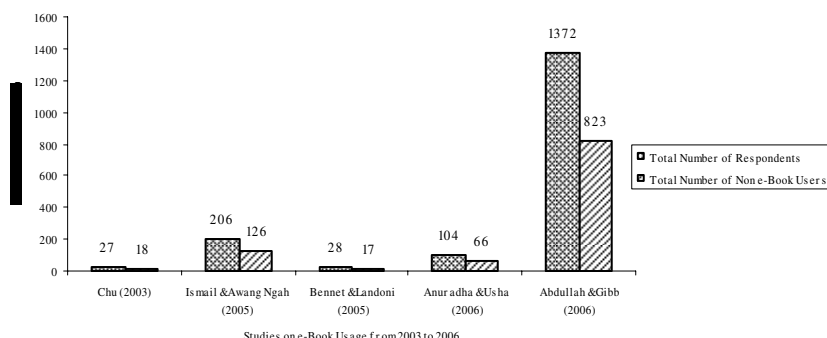


Fig. 1. Non Usage Level of e-Books in Academic Environments

### 3.3 Details of e-Book Usage

Of the 549 students who had used an e-book, 57% had read or used 3 or less e-books before the survey, with the most popular format being a computer-based e-book. This is probably because they are freely available from the library and from the internet, whereas device-based e-books (e.g. those for a Palm Pilot) represent an additional cost in terms of essential hardware. Of the three categories of e-books defined for this survey (textbook, reference book, and manuals or instructional books) the textbook was the most commonly used (68% of respondents). This is probably because the majority of respondents were undergraduate students and this type of book is the dominant source of content for their studies. The most popular reading method was on screen (94%) although students also liked to print them out (35%). In both of the usage cases, respondents could select more than one option.

### 3.4 Purposes for Using e-Books

Table 1 ranks the purposes for which students used e-books. The survey revealed that students who selected ‘other’ noted in their comments that reading for pleasure and leisure was the main purpose for reading an e-book, with “to read as a recommended course book” being the second most popular choice.

Table1. Purposes of using e-books

Frequency (n=549)	Purpose of using e-books
496	Other
441	To read as a recommended course book
413	To read as a textbook for a course
359	To look up the answer to a specific question
298	To support research work
111	To find materials for a project or essay

Note: A respondent could select more than one reason.

### 3.5 Reasons Why Students Do or Do Not Use e-Books

As shown in Table 2, the most common reason for using e-books were “they are freely available in the library”. This is in agreement with Chu’s [9] findings where his respondents tended to use freely available e-books (from the library or Internet) which did not require students to incur any additional expenses. The next most popular reason was “no equivalent printed book was available”. Some students commented they have to use e-books through EEBO (Early English Book Online) simply because there was no equivalent printed book available. Students who selected the “other” option provided the following additional reasons for using e-books: they can be remotely accessed; they do not have to go to the library; they are available from the Internet; and e-books are easy to use and carry.

Table2. Reasons for using e-books

Frequency (n=549)	Reasons for using e-books
263	They are freely available in the library
197	No equivalent printed book was available
190	They have features that are not available in printed books (e.g. search function, link to dictionaries or a thesaurus)
168	They have features which are in a printed book but are easier to use in a digital one (e.g. hyperlinked table of content, or index to the text, bookmarks, annotations)
78	Other

Note: A respondent could select more than one reason.

Table 3 summarises the reasons why participants had not used e-books. “not aware of their availability” and “prefer printed books” were the top two reasons, although students also pointed out that “they dislike reading on screen” which was often described as causing eyestrain over extended periods. In the main, students who answered “other” stated that they had “no need to use e-books” and that they “do not know how to access e-books”.

Table3. Reasons for not using e-books

Frequency (n=823)	Reasons for not using e-books
518	Not aware of their availability
326	Prefer printed books
249	Dislike reading on screen
145	e-books are not as portable as printed books
103	It takes time to get familiar with the technology
70	No relevant e-book titles are available
70	Other
59	e-books need special equipment (e.g. a computer with network access or a dedicated e-book reader)

Note: A respondent could select more than one reason.

## 4 CONCLUSIONS

This survey is unusual in terms of the number of responses which were obtained. Other surveys have yielded similar results but have been based on much smaller samples. The survey has proved useful not only in providing data on the levels of usage and awareness but has also raised these levels, as can be judged from comments that some respondents only became aware of e-book provision through the survey itself. The gateway into the survey was also shown to be important. The pilot testing was carried out using the host library’s web-site and produced significantly lower returns (52 versus 1372) and the vast majority of respondents were postgraduate students. This can probably be explained by the more intense use made of library resources by postgraduate students and the higher visibility of the student portal which is used to access a wide variety of essential information regarding classes, timetables, examinations, etc.

The survey found that e-book awareness amongst students at the University of Strathclyde was low as was the level of e-book usage, though this is in line with other surveys. This is demonstrated by a lack of awareness regarding e-book availability being the main reason for not using e-books. Additionally, comments from non-users highlighted that e-books were not widely advertised throughout the university which most probably contributed to the lack of awareness and non usage. Bennett and Landoni [7] have also reported that the majority of their respondents were not aware of e-books even when their academic libraries’ had significant holdings of e-books. In order to improve e-book awareness and usage level, Summerfield and Mandel [11] reported that encouraging academic staff to include e-book titles in their reading lists helped to increase e-book usage. Additionally, including e-books in a library catalogue is also reported to have increased e-book usage [12]. Other than that, academic libraries should actively and attractively promote the e-book through their library website, brochures, posters, training session or workshop.

This survey revealed that the most popular reason for using e-books was “other”, which was mainly described as reading for pleasure and leisure instead of using or reading for academic purposes, though Gunter [13] has found that early e-book usage was primarily for reference work rather than reading for leisure and entertainment. This would indicate that e-books are not seen as mainstream sources by either students, and probably their lecturers who do not yet place digital sources on their reading lists in significant numbers.

A wide range of positive and negative comments were provided by e-book users which revealed some important and interesting findings. On the positive side, students value e-books as important and convenient sources of books in high demand or of works that are out of print. In addition, e-books can be accessed around the clock, are remotely accessible and easy to search for specific information. Students with special needs found these characteristics of particular importance. However, on the negative side, apart from the much repeated comment that reading on screen for extended periods was uncomfortable, students commented that e-book provision in their library was limited in terms of viewing times and print quotas. Therefore copy and print policies for portions of e-books should be reviewed by e-book providers or vendors to promote more usage of e-book within copyright and fair use guidelines. Comment from non-users on the other hand, pointed out that they had not used an e-book because they could not underline, make notes or highlight the e-book as they could in printed versions. This demonstrated that non-users were unaware or not well informed of annotation features that are available in e-books. Despite a low rate of e-book awareness and usage level among students reported in this survey, non e-book users indicated their desire to learn more about e-books.

To summarise, the response rate for this survey was high in terms of volume and trends can be viewed with some confidence. However, for generalisability, the results should be compared with those from other academic libraries, using a stratified sampling method to generate an equal proportion of respondents in terms of their level of studies and academic disciplines. It is important to note that this online survey was dependent on respondent self-selection. This meant that there was no central control over the return of sample profile (e.g. gender, level of studies, academic discipline).

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