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# SOME STUDENTS STILL READ BOOKS IN THE 21<sup>ST</sup> CENTURY: A STUDY OF USER PREFERENCES FOR PRINT AND ELECTRONIC LIBRARIES

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#### Abstract

With a rise in the technology for the production of electronic or digital materials, funders and administrators of libraries are increasingly leaning towards providing digital reading materials to users. In crowded cities like Hong Kong where space is a scarce commodity, the save-space feature of digital libraries is an even more attractive reason why users of library facilities in academic and public libraries are being encouraged to read electronic versions of publications. In this article we show that, however laudable the advantages of electronic books may be over physical print books, user preferences in every situation must be carefully analyzed before a paradigm shift from print to digital library resources can be successfully effected. The data for this paper come mainly from a survey of user preferences among students of the University of Hong Kong, which shows that an overwhelming majority (77%) of the respondents prefers print to digital materials. We conclude that the success or otherwise of the paradigm shift from print to digital libraries would depend on measures taken to encourage a positive attitude of users for digital library resources.

#### 1. Introduction

Reading in the 21<sup>st</sup> Century is no longer confined to reading print books. Electronic versions of many print materials have been made available on the World Wide Web. Some of the advantages of using electronic or digital materials include their relative accessibility and flexibility in terms of time and space. Electronic materials also allow the inclusion of multi-media elements like sound and video clips, which cannot be presented in print books. These and other factors have contributed to growing acquisition rates of e-books and e-journals in academic libraries around the world. In crowded cities like Hong Kong, the save-space feature of digital libraries is an even more attractive reason why users of library facilities in academic and public libraries are being encouraged to read electronic versions of publications.

While libraries are encouraging the use of digital resources, a salient issue that one has to take into consideration is the actual acceptability of these materials to users. Are digital materials preferable to print materials, or are print books used more often? Will digital resources replace print ones in the future? Will people still continue to read books in the 21<sup>st</sup> century? This paper seeks to explore user preferences for print and digital resources in academic libraries from the perspectives of students of the University of Hong Kong. We would like to show that, however laudable the advantages of electronic books may be over physical print books, user preferences in every situation must be carefully analyzed before a paradigm shift from print to digital library resources can be successfully effected.

The paper is organized as follows. Section 2 discusses the nature of digital libraries in relation to the concept of digital literacy, which then leads to the study of user preferences presented in Section 3. Section 4 describes the major findings drawn from a survey of a group of undergraduate students and in-depth interviews with 8 students and 2 librarians. Section 5 highlights the various problems we have observed from the survey results with regard to digital library acceptability. Possible solutions and measures are also proposed. Section 6, the concluding part, summarizes key issues of the paper.

# 2. Digital Literacy and Digital Libraries

In this age of information technology, the traditional notion of 'literacy', which is understood as 'the ability to read and write' is far from sufficient. In order to adequately characterize literacy in the 21<sup>st</sup> century, the definition has to capture the relationship between literacy and new technologies. One of such relationships is the ability to process electronic information. In this section, we discuss the concept of digital literacy and its related concepts in the literature. The relationship between digital literacy and our present study of digital libraries is also discussed.

#### 2.1 Re-conceptualizing 'Literacy'

We are living in an era of rapid technological changes. The concept of literacy has to be refined in order to respond to the needs and demands of the information society. Gee (1990/1996), for instance, speaks of the 'plurality' of literacy, focusing on the coinage, 'literacies', which emphasizes that literacy is a dynamic concept which changes over time and space. Bodomo (2000) also recognizes the problem in the traditional notion of literacy and redefines literacy as 'the ability to code and decode linguistic and other symbolic systems for communication and information processing'. Bodomo and Lee (2002) further proposes a 'technology-sensitive' approach to literacy in their study of changing forms of language in the

information age, which is an instantiation of context-sensitive approaches to literacy studies. It is argued that the concept of context-sensitivity may be rather broad, and to really understand the impact of ICTs on literacy, the specification of a technology-sensitive approach is necessary. Lee (2002) provides an in-depth study of digital literacy practices in Hong Kong, especially the way Hong Kong youth use email and ICQ, an instant messaging programme which allows users to 'chat' online.

Gilster's (1997) conceptualization of digital literacy is one of the various forms of new literacies that have emerged under the impact of new communication tools. The concept is defined as 'the ability to understand and use information in multiple formats from a wide range of sources when it is presented via computers' (Gilster 1997:33). This characterization may be compared with works within the framework of critical literacy, since they have also recognized the multiplicity of skills involved in information processing. They look into the idea of multiliteracies (e.g. Fairclough 2000, Kress 1998, 2000, Luke 2000). Kress even speaks of 'multimodality' in his discussion of the processing of multimedia materials.

Other 'new' literacies being generated in the context of this technological dynamism include computer literacy, visual literacy, information literacy, and IT literacy. All of these concepts have become prevalent in present-day society, especially in the domain of education, due to the increasing use of ICTs in pedagogy. In this paper, we try to discuss the concept of digital literacy in connection with the rise of digital materials in academic libraries.

#### 2.2 Digital Literacy and Reading Digital Resources

Information and skills are indispensable concepts in the characterization of literacy in a knowledge-based society. Digital literacy is concerned with 'the ability to understand information', and to evaluate and integrate information in multiple formats that the computer can deliver' (Gilster, in Pool 1997). The emergence of e-book technology and its related reading practices would be a good manifestation of digital literacy. The increasing availability of this technology has attracted the attention of many university libraries for at least two reasons: (i) electronic materials are convenient in the sense that students can have remote access to these materials; and (ii) e-books can save space.

The experience of reading a book published online, however, differs quite dramatically from reading a print book (Lewenstein 2000). The skills involved are certainly more complex. As Gilster (1997) acknowledges, '[w]e read books but we browse the web'. Interaction between the 'reader' and the e-book is no longer static. The reader has become more 'active' in the process of reading by clicking and browsing through webpages and hyperlinks.

The question, then, is if reading electronic books requires such a new reading experience or even a new kind of literacy, are students of this generation who have been trained with print books ready to fully accept such new technology? In other words, are they digitally literate enough to 'master' e-book reading? What are their habits of using such materials? And more significantly, what do they actually prefer? These are the questions that this paper is concerned with. The study aims to investigate Hong Kong university students' preferences for print and digital materials. We would also like to propose possible measures in aid of a potential paradigm shift from print to digital libraries.

#### 2.3 Previous Studies on Digital Libraries

Some surveys conducted by academic libraries in other parts of the world have already looked into issues that center around digital libraries or the implementation of e-book technology.

The libraries at the University of Texas at Austin conducted an informal survey in 1999<sup>1</sup>. The survey question was: 'If you were to choose between the library's receiving an electronic subscription or a paper subscription to a given journal, which would you prefer?' Of the 788 respondents, 627 (80%) preferred e-journal access, while only 162 (20%) preferred print. Most of those who chose electronic materials stated that e-journals can save resources and are more accessible. The capability of keyword search was also another reason for the preference for electronic materials.

A similar survey was carried out at the California State University<sup>2</sup>. This survey asked users to comment on the NetLibrary system. Interestingly, of the 211 library users who responded, 57% preferred print book version if they had used both the print and e-book version of a book, though no reasons were specified. The conclusion of the survey report was: 'While print books are currently being used at a higher rate than e-books, there is a clear indication that e-books are becoming accepted and used, especially in certain subject disciplines. The use of e-books is likely to increase over time as more materials are available and as users become familiar with them. The use of print books is expected to remain steady.' While accepting the fact that more electronic materials will be available, whether print books will remain popular or not is still unclear. This paper thus suggests that while we are not sure about the future of print books, with the rise of electronic materials, a careful study of user preferences would help libraries acquire appropriate electronic resources and thus encourage higher usage rates. We also propose measures to sustain or enhance e-book access rates.

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<sup>1</sup> The results of this survey are available online at: http://www.lib.utexas.edu/admin/cird/surveyresponse.html

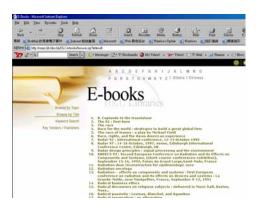
<sup>&</sup>lt;sup>2</sup> The California State University NetLibrary Service Survey Results: http://www.calstate.edu/SEIR/eBK\_FINAL\_RPT/eBk\_Final\_RPt\_Svy\_Result\_1.pdf

# 3. The Study

The context in which this paper is situated is the University of Hong Kong (HKU)'s rich set of digital library collections. To the best of our knowledge, academic libraries in Hong Kong have not conducted any large-scale surveys or studies on user preferences for digital library resources, especially among students. Such a survey is long overdue. This paper would like to address this issue with specific reference to the libraries at HKU. It also highlights the relationship between students' level of digital literacy and their preferences for e-materials.

#### 3.1 Electronic Resources at HKU Libraries

Since 1997, HKU libraries have been acquiring web-based electronic resources. These electronic resources mainly include e-journals, e-books, and e-newspapers. The University has subscribed to most of the key online research databases like ProQuest, LEXIS-NEXIS Academic Universe, and ERL Database. Over the years, there has been a significant increase in the number of electronic materials in the libraries to the extent that one can safely state that HKU has one of the richest digital collections in the Asia-Pacific region.





Figures 1 & 2: HKU e-books and e-journals access homepages

From June 2000 to June 2002, there was an increase of over 57,000 new titles in the electronic library collections, of which over 3,000 were e-journals and over 30,000 were e-books<sup>3</sup>. Overall, according to the libraries' Annual Report, the HKU libraries have acquired a total of 13,755 e-journals and 63,961 e-books in the 2001/2002 academic year. With these figures, it is obvious that the University strives to enhance the accessibility of library

<sup>3</sup> We thank staff members at the Reference Department of the HKU libraries for providing statistical data of the university's acquisition of electronic resources from 2000 to 2002. It has to be stressed that the definition of an electronic material has changed slightly over the past few years.

information by encouraging library users to access electronic resources. The actual access rates of digital materials, however, are yet to be explored. This paper, therefore, highlights this issue and attempts to look into users' preferences for, as well as their habits of, using digital libraries.

#### 3.2 Methodology

The data for this paper come mainly from a library user preference survey conducted in February 2003 (Lam 2003). In this study, both quantitative and qualitative data were collected. First, a questionnaire survey was conducted. 35 undergraduates of HKU participated in the questionnaire survey. They were asked questions in three major areas: (i) self-evaluation of level of computer literacy, (ii) their habits of using print and electronic materials, and (iii) their preferences for print and digital library resources. Possible correlations of these aspects are discussed in Section 5.

To better understand the reasons behind the users' preferences, we also interviewed 8 of the respondents who participated in the questionnaire survey. The qualitative data serve as further evidence and explanation for the results drawn from the questionnaire survey.

Apart from the above study, we also interviewed 2 staff members of the HKU libraries. With opinions from the librarians, we hope to obtain a fuller picture of the current situation of acquiring and using digital library resources in HKU.

# 4. Findings

In this section, we present some of the most significant findings of the study, which lead to a more substantial discussion of our observations in the Section 5. These findings are presented according to students' (i) level of computer literacy, (ii) habits of using library resources, and (iii) preferences for print and digital library resources. Results from the questionnaire survey are first presented, and are then followed by a summary of the interview results.

#### 4.1 Self-Evaluation of Level of Computer Literacy

We have already discussed the concept of digital literacy and we have also recognized that reading electronic materials requires a different set of skills. Therefore, we asked students to evaluate their own level of computer literacy, which might or might not directly affect their preferences for digital library resources. The question was 'Do you think you are highly proficient in using computers?' The result is shown in Figure 3 below:

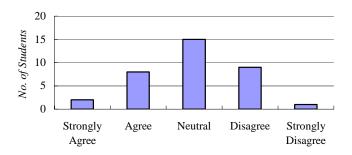


Figure 3: Do you think you are highly proficient in using computers?

It is found that, of the 35 respondents, only 10 agreed or strongly agreed that they were computer literate. Most of the respondents were not sure about their levels. The rest disagreed with the fact that they are proficient computer users. Although this is a self-evaluation and may not accurately reflect the actual level of computer literacy, we may conclude that more than half of the subjects were not completely confident in using the computer.

#### 4.2 Habits of Using Print and Electronic Library Resources

The survey also looks into students' habits of using print and digital library resources. Respondents were asked to indicate, in the past three months, how often they used (i) print materials and online materials, (ii) physical libraries and digital libraries, and (iii) e-books and e-journals. These are summarized in the following charts (Figures 4-6). Figure 4 below shows that more than half of the respondents *never* used an e-book in the past three months.

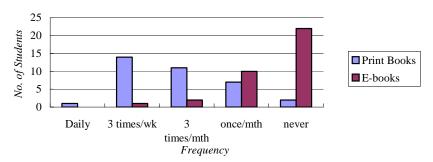


Figure 4: Habits of using print and electronic books

Though none of the respondents 'visited' any of the libraries daily, physical libraries were used more frequently, as shown in Figure 5. Of the 35 respondents, 26 went to a physical library more than once a month, while only 14 used digital libraries more than once a month. 10 of them even claimed that they never used digital libraries in the past three months.

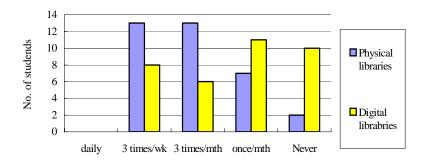


Figure 5: Habits of using physical libraries and digital libraries

We also compared students' habits of using print journals and e-journals. As illustrated in Figure 6, the frequencies of using these two types of journals were quite similar, though print journals were used slightly more often.

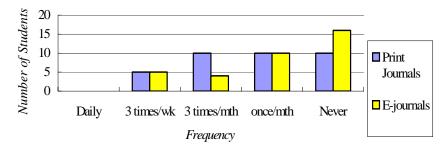


Figure 6: Habits of using print journals and e-journals

In sum, online materials were used less often than physical ones. The most significant evidence is found in the comparison between print books and e-books. More than 20 (60%) respondents never used one in the past 3 months. However, only 2 of them never used print books during the specified period of time.

## 4.3 Preferences for Print and Electronic Library Resources

As shown in Figure 7, 27 of the 35 respondents (approximately 77%) preferred print materials, while only 3 had a preference for digital resources. The results seem to correspond to the respondents' habits of using these two types of materials. The previous section has shown that students used physical print resources more often than digital ones, which reflects their preferences for these materials.

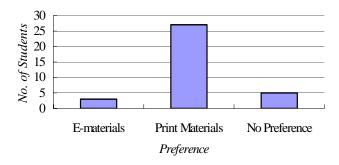


Figure 7: Preferences for print materials and e-materials

There are 3 main reasons for the preferences, as can be seen in Figure 8 below. The majority who preferred print materials said that using print resources was a habit they had developed. Others thought that using print materials was more convenient as print books are actually more portable. In cases where respondents answered 'others', 4 of them found that reading physical materials is better for the eyes.

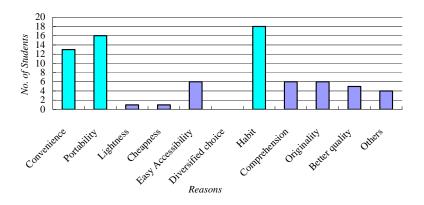


Figure 8: Reasons for choosing print materials

#### 4.4 Interview Results

This section reports on results drawn from in-depth interviews of 8 of the respondents who participated in the survey (Lam 2003). They were mainly asked to comment on the salient issue of whether print materials would be replaced by digital ones.

In general, the students recognized that digital libraries were very convenient since they did not need to actually go to libraries and could still read and download books or journals from home. They, however, did not think that digital libraries would entirely replace physical libraries. Print books still have their advantages. Students indeed enjoyed the experience of reading with the physical presence of a bound book.

The interviewees raised three main issues regarding a potential paradigm shift from print to digital libraries.

First of all, some of them were concerned with the technical problems in using electronic resources. They doubted if the computer systems could always preserve all the materials. There might be unpredictable failures or bugs in the digital library system, the Internet server, or even their own computers. There would be no guarantee that users can always retrieve whatever they want. But with print materials, unless a book is lost or checked out, the book would always exist without any technical concern.

The second consideration is the issue of copyright. Students are not familiar with the copyright regulations governing digital materials. They are not sure to what extent they can make copies of digital resources.

The subjects also pointed out that some people in Hong Kong neither have a computer nor any knowledge of computer usage at all, and thus they do not have access to resources like digital libraries. This shift from print to digital literacy would take place only if computers and the Internet are widely used.

#### 4.5 Views from the Librarians<sup>4</sup>

So far, we have only looked at views from students i.e. from a user perspective, which shows that there is a general preference for print materials and only a cautious acceptance of digital resources. However, we should not neglect views from the people who actually administer the acquisition and management of electronic resources. We, therefore, interviewed two librarians at the HKU libraries. In the interview, they were asked to provide general information as well as their own opinions of the acquisition and usage of digital resources at HKU.

Unlike the views from the student respondents, these two librarians enthusiastically supported the acquisition of electronic resources in the libraries. They both thought that digital resources are highly accessible from the users' perspective i.e. they can get the materials without actually visiting the library. Another attractive advantage, from the library administrators' perspective, is that e-books and e-journals do not take up much storage space in the physical libraries. This is very important for a densely populated city like Hong Kong, where space considerations pose many more challenges than in comparable cities in Europe and North America.

<sup>&</sup>lt;sup>4</sup> We are grateful to two librarians at HKU, Mr. David Palmer, Systems Librarian, and Ms. Gayle Chan, Collection Development Librarian, for the invaluable information they provided in interviews conducted on June 12<sup>th</sup> 2003.

When asked their opinions of the future of libraries, they said that the number of electronic resources would continue to rise, given the save-space advantage of e-materials. One of the interviewees even predicted that e-journals would eventually replace all the print journals at HKU libraries.

# 5. Problems Observed and Measures Proposed

The findings presented above underlie three potential problems in using electronic materials in Hong Kong: (i) the low user preference for digital resources, (ii) the low access rates of digital libraries, and (iii) a possible communication gap between library users and library administrators.

# **5.1** Low Preference for Digital Resources

Our study has shown that print materials are still highly preferred, though the amount of electronic materials acquired in the libraries is on the rise. As compared to the results of user preference surveys conducted in other parts of the world, Hong Kong students seem to have a relatively low preference for digital resources. This may be attributed to two main reasons: (i) lack of promotion done by libraries and other authorities, (ii) low awareness of using digital resources i.e. students have not developed a 'habit' of using books published through 'unconventional' media. In other words, students are not 'digitally ready' to read e-books. 'Being digitally literate is multidimentional and interactive' (Gilster 1997). As has been discussed, special 'acts' like clicking and hyperlinking are involved in processing electronic information. Students are still more used to the experience and literacy practices of reading bound and print books.

Apparently, the access rates of digital resources are still low, as demonstrated in Figures 4-6 in the previous section. Students consider print books more portable than digital ones, since a print book can be carried to places while reading a digital book requires a networked computer or other special devices. Although various portable e-book readers are available on the market, this technology is not very popular in Hong Kong. Having spelt out these issues, we then attempt to propose some possible measures to tackle the problems raised in our study.

#### **5.2** A Disregard for User Preferences?

Based on the data collected from students and librarians, we noticed that there exists a gap between user and provider expectations towards digital libraries. The findings clearly indicate that, while the libraries hold a positive view for digital resources, most of the students, the users, actually still prefer print materials. We have thus realized that a successful implementation of

the idea of digital libraries should take into account the actual acceptability and user preferences for different types of materials.

#### 5.3 Enhancing Access Rates of Digital Libraries

In order to address the issues discussed above, some measures have to be taken. Here we propose the following solutions to the problems we have observed regarding the implementation of the concept of digital libraries in Hong Kong and beyond.

## (i) Promoting the advantages of digital materials

One of the most significant findings of this study is that librarians appreciate the potential values brought by digital resources while students are still quite skeptical about using these rather 'unconventional' resources. As such, one of the major tasks for library administrators and e-book developers is to pay careful attention to the needs of their users. They should emphasize the advantages of electronic materials over the print. Once users come round to realizing that reading e-books is an equally enjoyable experience, they might begin to develop a positive attitude towards reading electronic materials.

#### (ii) Raising awareness of the rich collection of electronic materials

Even though there is a huge collection of electronic resources in the libraries, it may not be surprising that not many users know the actual coverage of electronic resources. This may have contributed to the low access rates of electronic resources. Therefore, we suggest that academic libraries should emphasize the dissemination of information about digital materials, such as announcing new additions of e-journals and e-books much more regularly, in order to draw potential users' attention to the availability of these vital resources.

#### (iii) Taking full advantage of electronic media in publishing e-books

Some e-book versions of print books today are not exact duplicates of the original print versions. Images like photos or charts and book covers may be missing. It is hoped that developers of electronic resources would do their best to keep all contents of the print versions in the electronic versions, or better still, incorporate multimedia elements which can only be done on the electronic version.

### (iv) Enhancing e-book technologies

Portability is one of the major criteria that users consider in evaluating digital materials. Although we recognize that electronic materials possess a certain level of flexibility and they save storage space, using e-books and e-journals is not necessarily more convenient than using print books. A number of restrictions are often imposed on electronic materials,

just as they are imposed on print books. For instance, e-journals and e-books in academic libraries can only be accessed by authorized users within the registered computer network or server. If users wish to use e-books or e-journals from home, they must first connect their computers to the registered network. Such inconvenience may discourage the acceptance of electronic resources to a certain extent. Portable e-book readers like eBOOKMAN® and AlphaBook have been launched in recent years. It is hoped that such technologies will soon be more widespread and become a solution to the problem of portability.

## (v) Encouraging the use of electronic books in other education sectors

Most of today's e-books are reference works or academic materials for people at the tertiary level. If, however, students could begin using e-books at an early age, they would develop an early awareness of the advantages, or at least, the 'existence' of electronic materials. We suggest that the provision of electronic materials should not only be confined to university libraries. Other sectors like primary and secondary schools should also enjoy the benefits of electronic materials, especially since space in school libraries would be very limited in a place like Hong Kong. Of course, due to the high subscription fees of electronic materials, not many schools can actually afford the implementation of such technologies. It is hoped that funding bodies would continue to support not just tertiary academic libraries, but also primary and secondary school libraries.

### (vi) Clarifying copyright policies governing electronic resources

Based on information provided by one of the librarians we interviewed, copyright laws of electronic materials are still unclear to library users and even to professional librarians. This has also contributed to the low user preference for electronic resources. We, therefore, suggest that copyright laws which govern the use of electronic information be made clearer to library users as well as library administrators. The extent to which users can copy, share, disseminate, and use the materials should be stated. Relevant guidelines can be disseminated in the form of seminars, pamphlets, or perhaps some guidelines on the Internet.

# 6. Concluding Remarks: the Future of Print Resources

Electronic resources seem likely to replace most of print materials, especially journals, but uncertainty still remains. Some students still prefer print books in the 21<sup>st</sup> century. The paradigm shift from print to digital libraries, if this were the target at all, would depend on measures taken to encourage a positive attitude of users of digital resources. The fact is that, most students of this century are more accustomed to print books. Schools in Hong Kong

adopt more print literacy practices than electronic ones, i.e. students are trained to be more 'print literate' than 'digitally literate'. It is thus understandable that there is a long way from full acceptability. In another 10 years' time, when e-book technologies would have become more developed and widespread, we may not be surprised to see a paradigm shift, where more students prefer e-books to print books.

Future studies should take into consideration user preferences across disciplines. It is believed that students of the humanities may access electronic resources less often than those in the hard sciences. Of course, this needs to be supported by further evidence. Other user preference studies could, for instance, include e-book reading habits of undergraduate vis-à-vis research postgraduate students, user preferences for e-books vis-à-vis e-journals, and user preferences for reference materials vis-à-vis fiction.

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