

E-books: Search and Download in the Life Sciences?

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INTRODUCTION

E-books have a place in academia, but the sudden growth of e-book publishing has librarians grappling with user reading behaviors in relation to collection development. Surveys have identified an increasing interest in e-books; however studies on reader interactions with e-books are only now coming to the forefront. E-books have filled a critical niche as reference sources, but a review of netLibrary e-book use statistics in the life sciences at the University of Colorado at Boulder has shown a wider range of reader interests. Poised for the e-book revolution academic librarians must identify reader behaviors in order to make informed e-book purchases that further the academic mission.

WHAT DO WE KNOW?

The advent of digital media has transformed all elements of information gathering, from discovery to publishing, “Whether people like digital media or not, reading and literacy are being redefined by the arrival of digital technology.”¹ Studies have shown that readers use e-books, but just how they are using them remains unclear.

For librarians a working definition of e-books is, “any piece of electronic text regardless of size or composition (digital object), but excluding journal publications, made available electronically (or optically) for any device (handheld or desk-bound) that includes a screen.”² The e-book market has grown rapidly since 2004 with revenues up 23% in 2005 along with a 20% increase in titles published.³ In spite of the marked increase, a report from 2006 found that worldwide e-book sales represent about 1% of the increase in U.S. book sales, but less than one-twentieth of 1% of total U.S. book sales.⁴ The

advent of a single standard for e-books released by the International Digital Publishing Forum (IDPF) in December 2006 will undoubtedly be a boon to e-book publishing and sales. The Open eBook Publication Structure Container Format,” will allow publishers to release a single standard file into their sales and distribution channels and will also enable consumers and library patrons to exchange unencrypted ebooks and other digital publications between reading systems that support the new standard.”⁵

Studies have provided librarians with a partial perspective on readers, identifying distance education and reference as two areas where web-based e-books fill an important niche. A report from 2003 found that students are interested in using e-books and that “e-books are able to enhance the interaction between educators and students when dealing with teaching and learning materials.”⁶ Reference materials found in collections such as Knovel Library, Wiley InterScience and SpringerLink provide access to prestigious scientific publishers including CRC Press and McGraw Hill. Functioning as aggregators these vendors often provide enhanced features such as interactive tables and graphs, full-text searching, and hyperlinks.⁷ Other advantages to readers of web-based e-books are portability, availability (24/7), multimedia connectivity, and simultaneous access.

The downside for the reader is the difficulty of extended reading from a computer screen. The backlit technology is fatiguing to the eye and apparently the brain. A 2005 study cited by Thomas (2007) found that “undergraduate students who read online text find it to be more difficult to understand, less interesting,” and they even considered the authors less credible than when reading the printed version.⁸ Printing is another drawback due to the various constraints protecting copyright and revenues that restrict copying. Although lap tops are portable they are awkward to hold and have limited battery life.



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WHAT ARE WE DOING NOW?

Libraries are rapidly changing with the digital media. According to one study over 93% of new information produced is being created digitally.⁹ E-books have the potential to become a much larger player in the digital age and “are coming into their own as research resources in our electronic information environment.”¹⁰

In the life sciences e-book purchases have generally fallen into the guidebook, handbook, and reference categories. The University Libraries at the University of Boulder in Colorado (CU), like many institutions, have purchased a variety of e-book packages including: Knovel Library, Wiley Interscience, ChemNetBase, ENVROnetBase, and ENGnetBase. Studies have shown that reference materials offer significant value to readers in the e-book format and many titles in these collections are reference-oriented.¹¹ Although, reference resources have dominated science e-book acquisitions, changing user needs may require collections with more in-depth content.

The University Libraries also acquired a substantial number of e-books through a netLibrary consortial purchase agreement that ended in 2004. A statistics pull for 2006 of netLibrary titles grouped by subject found a total of 1,681 life science titles were accessed. The majority of readers ‘checked-out’ medical e-books totaling 1,270, followed by biology 246, agriculture 89, and chemistry 76. These figures provide insight to e-book activity. It’s not surprising that medical e-books account for the largest circulation, but what was unexpected was the in-depth subject coverage of many of the user-selected titles. It is well known that the main impetus for open access to journal literature was the need to disperse research on health related issues, perhaps so too with the e-books. These statistics provided one piece of the puzzle, but how these e-books are used remains unresolved.

The netLibrary usage statistics also indicated that natural histories, subject overviews, and ‘trends in..’ serve a purpose for the reader as well. Francis Bacon, as quoted by Ojala (2007), once said “Some books are to be tasted, others to be swallowed, and some few to be chewed and digested.”¹² As librarians we

should remember that adage as we educate ourselves about the interaction between scholar and e-book.

A surprising consideration from the netLibrary statistics was that readers were locating e-books from the catalog without any promotion or marketing by the Libraries. The CU Libraries catalog provides one means of e-book access along with notices to faculty/students from subject bibliographers informing them of purchases; however a well-developed marketing scheme has the potential to increase both awareness and use. E-book expenditures are on the increase and marketing these resources should be considered an informational requirement to our users, by promoting e-books to “particular user groups through targeted and structured strategies.”¹³

WHAT DO WE NEED TO KNOW?

As e-books gain footing in the academic research endeavor, librarians need to know not only what e-book users read, but why and how.¹⁴ A study from the University of Denver Penrose Library found only 7.1% read the entire book, with 56.5% reading a chapter or article within a book and 36.4% read a single entry or a few pages.¹⁵ Interestingly, the authors noted a study in 1985 that found that the majority of science scholars (75%) read only small sections of print books.¹⁶ This is the kind of information librarians need to know so as not to de-value the e-book reader’s interaction with the book. Skimming, much like browsing, can lead to serendipitous discoveries.

Another study coming from the UK will hopefully shed new light on reader’s interactions with e-books. The SuperBook Project originated with e-journals applying “deep-log analysis of the digital ‘fingerprints’ left by the users of e-journals.”¹⁷ Dave Nicholas, at the School of Library, Archive and Information Studies, University College of London (UCL) and his colleagues are applying the same methodology to e-books. The premise of the study is that expanded availability of e-books may drive a shift in user behaviors. The study will “evaluate awareness of, and attitudes towards e-books, the impact of e-book intervention on learning, book usage, satisfac-

tion with e-book content, and whether, as a result of these interventions, users demonstrate different patterns of study from the non-users.”¹⁸ The ‘virtual scholars’ will be UCL students, researchers and staff utilizing an e-book collection of more than 3,000 titles from Oxford Scholarship Online, Wiley Inter-science, and Taylor & Francis. The study officially began in November 2006 and will run one year.

Librarians need to stay current with the new technologies, and in particular, handheld readers for e-books. The emerging readers are meant to replace books and even newspapers. Readers have come and gone in the past with barely a fanfare, leaving no lasting impression on the print world. The advent of new technologies such as organic light-emitting diodes (OLEDs) and electronic paper displays may be the impetus for an e-book revolution. Sony’s E-Book Reader introduced in the fall of 2006 utilizes a new digital ink display that “provides paper-like reading comfort and long battery life.”¹⁹ Sony’s reader is similar to a paperback approximately six inches long, 9 ounces in weight, with a leather cover that folds back for reading comfort. Light is required for reading as the display is not backlit. The Sony Reader can hold up to 80 books and additional e-books can be purchased from Sony’s CONNECT eBook Store stocked with 10,000 titles. Additional features include free RSS feeds from CONNECT and the ability to listen to unencrypted MP3. The cost of the reader is \$350.

The question remains whether a single-function device such as the Sony E-Book Reader without Internet connectivity will actually satisfy the readers. As society becomes more interconnected a stand alone device, even one with hyper-links, music, and portability, may not significantly fulfill user’s e-reading requirements. Another alternative in the e-book evolution are advances in the software for reading e-books on the computer. Adobe has released a new version for managing and reading digital publications which according to the company, “is an improvement to the Adobe e-book reader and an answer to the confusing proliferation of e-book formats.”²⁰

Studies have synthesized user preferences down to 3 basic requirements: a cheaper product, the ability to print and manipulate text, and portability that can

be used on all their electronic devices.²¹ Interconnectivity may in fact be an essential attribute for any e-book. As the SuperBook study in the UK unfolds and the e-book readers are put through their paces perhaps a more precise picture of readers and their books will begin to emerge.

DISCUSSION

E-book user studies are an opportunity for discovery on the nature of reading and research. Continued studies, such as the SuperBook Project, on how readers find books, read books, and use books will provide a foundation for strategic library acquisitions. User studies will continue to inform librarians, but perhaps we can take it a step further at the local level. When arranging e-book trials librarians could create pop-up user surveys, to be displayed when a book is ‘checked-out,’ thereby assessing the users’ interaction with the e-book. The print medium has been a barrier to the book in the e-learning environment; however “Relevant information exists not only in journal and news formats, but also in books which are coming into their own as research resources in our electronic information environment.”²² Full-text searching in e-books may breathe new life into life science research as readers point and click extracting chapters or saving data to spreadsheets. The use of the e-book “within higher education communities could lead to a paradigm shift influencing e-learning, research and the nature of academic publishing.”²³ Academic librarians must continue to explore the utility of the e-book, matching books to users, ensuring Ranganathans Law, “every book it’s reader.”²⁴

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