Evidence Based Library and Information Practice

Evidence Summary

Undergraduate Science Students are Uncertain of How to Find Facts in E-books Compared to Print Books

A Review of:
Berg, S. A., Hoffmann, K., & Dawson, D. (2010). Not on the same page: Undergraduates' information retrieval in electronic and print books. *The Journal of Academic Librarianship, 36(6)*, 518-525.

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Received: 01 Mar. 2011 **Accepted:** 21 Apr. 2011

Abstract

Objective – To observe and compare the strategies that undergraduate science students use to perform information retrieval tasks in e-books and in print books.

Design – Qualitative analysis, employing a "prompted think-aloud" methodology and thematic analysis.

Setting – Taylor Library (serving the Faculty of Science), University of Western Ontario, London, Ontario, Canada.

Subjects – Twenty undergraduate science students (11 females, 9 males) who had completed at least two years of study in Faculty of Science programs at the University of Western Ontario.

Methods – Participants for the study were recruited through informational posters in Taylor Library, science departments, and in undergraduate science classes. Participants were assigned fact-finding tasks in e-book and print versions of eight health, computer science, and engineering textbooks and handbooks available in the Taylor Library. Book titles and tasks are included in a table in the study. Each student completed four tasks using e-books and four tasks using print books. Half of the participants performed tasks in print books first, and half began with tasks in e-books. Print books were "pre-selected" for each participant. The e-books

were all from the same platform: Electronic Book Library. Participants were provided with a laptop computer to access the e-book versions, and a list of questions or facts to locate within each book. Following the methodology of Cotton & Gresty (2006), one researcher prompted students to verbalize actions while performing assigned tasks. A second researcher captured audio and video of the laptop screen as students individually conducted their e-book searches. A third researcher took notes on each session. An exit survey was given to each participant, asking about previous use, knowledge, and attitudes towards e-books. Thematic analysis was then used to examine the collected data.

Main Results – Researchers identified four major themes from the data with regard to use of print versus e-books: linear/non-linear strategies; tangible/intangible aspects of books; met/unmet expectations; and transferable/non-transferable behaviours. Researchers found that participants tended to search print books in a linear fashion, whereas they approached e-books non-linearly. Physicality and familiarity with print books helped participants more readily find answers, compared to e-books, where students tried less successfully to mimic techniques used in print books to locate requested information. Participants used indexes in print books, versus e-books where they did not quickly identify the e-books as having them. The students expected that the e-books would behave as other web-based/online sources or search engines would (such as Google books), and commented that they did not. Transferable actions between print and e-books included developing and using keywords for searching.

Conclusion – The authors of this study found that student participants did not know how to navigate the e-books presented to them compared with their print counterparts. There was a lack of awareness on the part of participants about e-books in general: the students were unaware that e-books were available through the library catalogue; they did not know that e-books have indexes as print books do; and did not know the differences among platforms offered by the library. All of these facts point to the importance of user education. The authors note the importance of testing of e-book platforms by students, faculty, and librarians prior to committing to purchase particular platforms. The authors note that more research is needed on user interaction with e-books, how e-books are used to assimilate information, and how groups other than undergraduates search e-books.

Commentary

The library literature gives many examples of think-aloud protocols in usability testing of library websites, databases, online catalogues, and other online library tools. Its use here for studying how e-books are searched is notable and very timely (see also Hernon, Hopper, Leach, Saunders, & Zhang, 2007).

This is a qualitative study, yet there are some issues with controls: 12 of the 20 students reported having used e-books in the past, leaving eight whose use of e-books prior to the study is either absent or unknown. Should novices versus those with some experience in the use of e-books have been studied separately? The authors don't explain what a "convenience sample" is, (though it generally refers to a nonprobablistic sample of individuals selected from the population at hand) or precisely and convincingly how they determined that the 20 participants met the "point of saturation" (p. 520). The authors stated that science students are regular users of e-books, and yet none of the students had used the Electronic Book Library platform. Pilot testing of the methodology is not described. The rationale both for book titles chosen and the eight retrieval tasks students were asked to conduct is not given. Demographics collected (including ages of participants) and exit survey questions and summary of answers are not included.

As the authors note, science students are not necessarily representative of undergraduates

from other disciplines. Further research on e-book use should include students from additional disciplines, as well as other groups, such as graduate students. Further studies should compare e-book platforms subscribed by libraries with each other, as well as to those available on popular Kindle, NOOK, and iPad devices.

The authors believe that study participants expected e-books they searched to perform similarly to Google searching, especially with its ubiquitous hypertext linking. The authors do not devote discussion to another likely candidate with which science students would be especially aware and well-versed at searching and using: e-journal articles within aggregate databases and e-journal platforms. The authors address this in their introduction (p. 518), but curiously, do not return to this factor anywhere else in the study.

This article has some obvious implications for practice. Reference and instruction librarians should carefully point out differences between searching in print books and searching in library e-book platforms and other online content. Along with evaluating e-book platforms for titles provided, librarians should carefully examine search capabilities of considered platforms, and continue to press publishers and e-book vendors to develop more transparent and robust search functionality.

References

Cotton, D., & Gresty, K. (2006). Reflecting on the think-aloud method for evaluating e-learning. *British Journal of Educational Technology*, *37*(1), 45-54.

Hernon, P., Hopper, R., Leach, M. R., Saunders, L. L., & Zhang, J. (2007). E-book use by students: Undergraduates in economics, literature, and nursing. *The Journal of Academic Librarianship*, *33*(1), 3-13.