

2009 OLA Super Conference: Session 1802  
“Determining the Usability of eBooks using the Think-Aloud Method”  
Diane (DeDe) Dawson, Selinda Berg, Kristin Hoffmann

**Determining the Usability of eBooks Using the “Think-Aloud” Method**

Saturday January 31, 2009  
OLA Super Conference

Kristin Hoffmann, University of Western Ontario  
Diane (DeDe) Dawson, MLIS candidate, UWO  
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**Presentation Outline**

- Background
- Objectives/Hypotheses
- Methodology
- Findings
- Limitations
- Future Directions

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**Background**

- eJournals wildly successful... but what about eBooks?
- Most literature on eBooks =
  - Opinion pieces
  - Research based on surveys of various user groups, or librarians
  - Few usability studies

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**Objectives**

1. To gain an understanding of user experiences in accessing information via electronic and print books.
2. To help Western Libraries librarians make informed decisions about electronic books.

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**Hypotheses**

1. Information retrieval behaviours will differ between print and electronic books.
2. There will be variations in information retrieval, independent of format.

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**Methodology Outline**

- Participant selection
- Books & tasks
- Why EBL?
- Think-aloud method
- Data collection & analysis

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**Participant Selection**

- 20 undergraduate Science students
  - Primary user group of Taylor Library
  - Undergraduates a good place to begin
  - 20 is a manageable number for a qualitative study
- Recruitment:
  - Pamphlets and posters
  - Announcements in classes

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**Books & Tasks**

- 8 titles selected
  - Currently available in Taylor Library's collections in both print and electronic format
  - Represent a range of Taylor's subject areas
- Each participant looked at 4 titles in print, and 4 titles in electronic format

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**Books & Tasks**

- One information-retrieval task was developed for each title
  - Involved searching for discrete pieces of information or general sections in the resource
  - Can be achieved via several different conceivable methods

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## Books & Tasks

- Task example:
  - What are the effects of Dichloro-Diphenyl-Trichloroethane (DDT) on eggshell formation in birds?
  - *“Endocrine disruption: Biological bases for health effects in wildlife and humans” Norris & Carr, 2006*

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## Why EBL?

- Electronic Book Library (EBL)
  - Focus on one platform
  - Currently available to users of Western Libraries
  - Provider used by Taylor Library for individual eBook purchases

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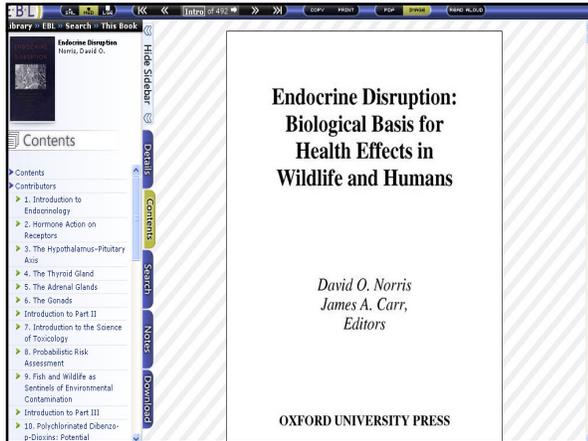
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### Think-Aloud Method

- “Concurrent verbal protocol”
  - Participants instructed to verbalize all thoughts while completing tasks
  - Allows immediate access to thought processes, decision-making, short-term memory etc

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### Data Collection & Analysis

- 3 researchers in room with participant
  - Prompter/facilitator
  - Note-taker
  - Video-taker (of print book and laptop screen)
- Each researcher independently reviewed the notes and videos at the end of the study
  - Identify emergent themes

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**Findings**

- 7 main themes:
  1. Physicality
  2. Certainty
  3. Information Gathering
  4. Learned Methods
  5. Expectations
  6. Navigation
  7. Transferability

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**I. Physicality**

*“Keep [my] finger where the index is because it's easy to go back to”  
(participant using Print book)*

- Print Books:
  - Easy to know location within text
  - Use of finger as placeholder, or tracker
  - Rapidly flip pages (back & forth)

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**I. Physicality**

- eBooks:
  - Use of cursors to track text mimics finger in print
  - Moving through eBooks much slower, more cumbersome
  - Convenience of access, portability

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### I. Physicality

*“I would always choose the electronic version unless I needed to look at a large amount of text as I was writing or flip back and forth between several pages... [Electronic books overcome] space and portability issues”*

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### 2. Certainty

*“So, I am just going to go there and hopefully find something because I do not see any subtitles related”*  
(participant using eBook)

- Print Books:
  - High degree of certainty in finding methods
  - Pursued a strategy to completion
- eBooks:
  - Hope for serendipity, less certainty
  - More likely to abandon search strategies early

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### 2. Certainty

- eBook example:

Participant looking at the table of contents, clicks on the chapter on DDT,  
*“There is a chapter on DDT right here”*  
Does not continue to explore the chapter, but instead uses search function.

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## 2. Certainty

- eBook example:  
*“I am just browsing through the contents and I see that there is a chapter on Garlic, Chapter 12”*  
Does not view Chapter 12.  
*“I will go to the search again”*  
Searches for garlic heart disease.

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## 3. Information Gathering

- First approach to each task: select keywords
- Print Books:
  - Then scan index &/or TOC for keywords
  - Word recognition more effective
  - Linear, confident progression

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## 3. Information Gathering

- eBooks:
  - Non-linear, unsure what to do with keywords
  - Miss keywords more often
  - Additional tool in eBooks: the search function
  - Less lateral/creative thinking

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#### 4. Learned Methods

*"From the previous one I have learned that I should likely just use the search function"*  
(participant using eBook)

- 8 tasks in total for each participant
- Successful strategies from previous task adopted for next task
- Search times progressively decrease

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#### 5. Expectations

*"I can't click it"* (participant using eBook)

- Participants' expectations of eBooks generally **not** met

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#### 5. Expectations

*"I can't click it"* (participant using eBook)

- Participants expected eBooks to match website functionality:
  - Control F
  - Scrolling
  - Search function should work like Google
  - Search terms should be highlighted
  - Index should be hyperlinked

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6. Navigation

“How am I going to access this thing?”  
 (participant using eBook)

- Participants did not intuitively know how to navigate eBooks
- Affected info-retrieval strategies

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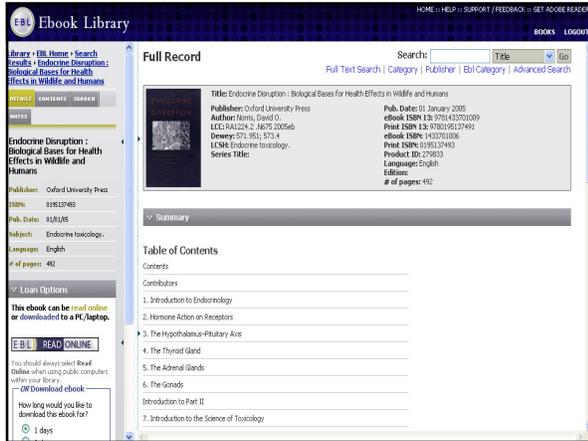
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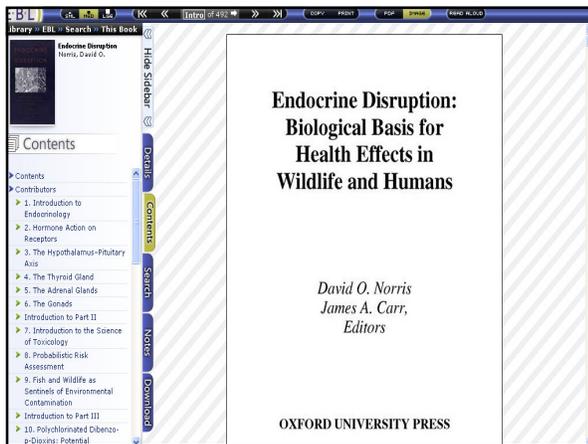
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## 6. Navigation

*“Actually now I am going to go back to the index, now that I know how to flip a page”  
(participant using eBook)*

- Considerable time spent orienting, learning to navigate
- Likely to continue until:
  - Universal platform
  - Familiarity with platform

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## 7. Transferability

*“I like the table of contents because I think it, like, orients you to the book”  
(participant using Print Book)*

- 2 strategies in Print Books:
  1. TOC – for general info
  2. Index – for specific info

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## 7. Transferability

- eBooks:
  - Additional strategy available: search function
  - But no single/clear strategy
- Most noticeable shift: less use of index in eBooks
  - Use of index least likely to be transferred

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**Limitations of Study**

- Only one eBook platform
- Searching for discrete facts, not assimilating content
- Contrived/artificial setting
- Participants had no stake in the situation

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**Implications for Libraries**

- Students do not know intuitively how to use eBooks
- eBooks need to be promoted
- More research is needed in order to better understand our users

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**Future Directions**

- Explore other eBook formats/providers
- Expand study to include other user groups (graduate students, faculty, librarians)
- Examine how eBooks are used for varying information needs

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**Exit Survey**

- In which situations would you prefer to use an eBook?  
*“I would always prefer to use eBooks because they are digital, highly-searchable, indexed, pdf format, & very portable.”*  
*“I’d use an eBook if my legs were broken or the library was closed/out of reach.”*

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Questions?

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