# E-BOOK ASSESSMENT REPORT

## TEST OBJECTIVES

To determine the usability of various eBook platforms used by the University of Manitoba Libraries, and establish a knowledge base of current usability issues and user preferences.

## SCOPE

### PLATFORMS

Platforms included in this round of E-book usability testing include:

1. EBL
2. Ebrary
3. EBSCO*
4. Wiley

\* Although EBSCO discourages mobile access to their eBooks, there are work-arounds and users may access their eBooks from EBSCO's full site. As such, EBSCO was still included in mobile testing.

### BOOKS

The following books were selected for usability testing tasks:

1. **EBL** – Arabatzis, Theodore and Vasso Kindi, Kuhn's The Structure of Scientific Revolutions Revisited (NY: Routledge, 2012).
2. **Ebrary** – Feenstra, Robert C. and Shang-Jin Wei, China's Growing Role in World Trade (Chicago: U of Chicago Press, 2010).
3. **EBSCO** – Kwinter, Sanford, Architectures of Time: Toward a Theory of the Event in Modernist Culture (Cambridge, MA: MIT Press, 2001).
4. **Wiley** – Blackledge, Robert D., Forensic Analysis on the Cutting Edge: New Methods for Trace Evidence Analysis (Hoboken, NJ: Wiley, 2007).

### USER PROFILE

Participants for all tests were limited to University of Manitoba students or faculty members. A minimum of six and a maximum of ten users were selected to complete the PC-based usability testing process. Every attempt was made to obtain a diverse pool of participants, with at least one graduate student and one faculty member participating. Half of the selected participants were assigned to EBL and Wiley platforms, while the other half performed testing on Ebrary and EBSCO platforms.

A minimum of four and a maximum of eight library users were selected to complete the mobile testing process. At least one of these participants was either a faculty member or graduate student. Half of the selected participants were assigned to EBL and Wiley platforms, while the other half performed testing on Ebrary and EBSCO platforms.

Although there is a potential for support staff or community members without student or faculty status to be accessing University of Manitoba Libraries eBook holdings, they are not the primary groups served by University of Manitoba collections, and as such were excluded from this initial testing pool.

## TESTING ROLE DEFINITION

A single researcher operated as both facilitator and observer. Sessions were recorded, transcribed, and analyzed by the principle researcher.

## MATERIALS USED

- User Experience Librarian's Testing Laptop
- Android-based Smartphone
- Snowball Blue Microphone
- Logitech HD Webcam
- Camtasia Studio
- Notepad & pens

## TEST METHODOLOGY

1 *Participant Greeting and Pre-Test Questionnaire*

   a  The researcher introduces himself or herself to the participant.

   b  The researcher explains the procedure of the test and emphasize that the test itself focuses on eBook usability rather than the ability to execute a particular task.

   c  The researcher administers the pre-test questionnaire.

2 *Instructions*

   a  The researcher prepares four browser windows or tabs prior to the beginning of the task.

   b  The researcher reads the test script aloud for each task and provides a sheet with instructions to the participant for reference.

   c  The researcher encourages the participant to vocalize their thoughts as they attempt each task.

   d  After each task is completed (or the participant chooses to quit the task) the researcher closes the web browser or tab and reads the script for the next task.

e The researcher does not assist the participant in any of the tasks.

3 *Usability Test*

    a While the participant completes each task their screen and voice are recorded using Camtasia Studio software.

    b The researcher monitors each task and records the following information:

        i General behavior, gestures, and reactions of the participant,

        ii Number of navigation errors by the participant,

        iii Number of times the participant asks the researcher for assistance,

        iv The length of time required to complete each task.

4 *Post-Test Questionnaire*

    a The researcher debriefs with the participant and asks the participant to describe their impressions of each eBook platform.

    b The researcher administers the post-test questionnaire.

## QUESTIONNAIRES

Questionnaires addressed:

- User identity within the University of Manitoba (undergraduate student, graduate student, faculty).
- Frequency of eBook use.
- Confidence in accessing eBooks online.
- Impressions of and satisfaction with eBook platforms covered in the usability session.
- Platform preferences based on the usability session.

## TEST TASK INSTRUCTIONS – PC

### GROUP A – EBL & EBRARY

1. Open the following book, Kuhn's The Structure of Scientific Revolutions Revisited, through the University of Manitoba Libraries website.
2. Flip through a few pages, then access Part I Section 3, From Paradigm to Disciplinary Matrix and Exemplar.
3. Locate the only instance of the word "fish" in this book.
4. Download a copy of the book, or as much of the book as you can.
5. Send a copy of the book to the printer. (Please don't actually hit print! Save some trees.)

6. Open the following book, Robert Feenstra and Wei Shang-Jin's <u>China's Growing Role in World Trade,</u> through the University of Manitoba Libraries website.
7. Flip through a few pages, then access Part I Section 3, China's Local Comparative Advantage.
8. Locate a usage of the word "march" in this book.
9. Download a copy of the book, or as much of the book as you can.
10. Send a copy of the book to the printer. (Please don't actually hit print! Save some trees.)

## GROUP B – EBSCO & WILEY

1. Open the following book, Sanford Kwinter's <u>Architectures of Time: Toward a Theory of the Event in Modernist Culture,</u> through the University of Manitoba Libraries website.
2. Flip through a few pages, then access Section 3, Physical Theory and Modernity: Einstein, Boccioni, Sant'Elia.
3. Locate the only instance of the word "analyzed" in this book.
4. Download a copy of the book, or as much of the book as you can.
5. Send a copy of the book to the printer. (Please don't actually hit print! Save some trees.)

6. Open the following book, Robert Blackledge's <u>Forensic Analysis on the Cutting Edge: New Methods for Trace Evidence Analysis,</u> through the University of Manitoba Libraries website.
7. Flip through a few pages, then access Chapter 3, Ink Analysis Using UV Laser Desorption Mass Spectrometry.
8. Locate a usage of the word "fishing" in this book.
9. Download a copy of the book, or as much of the book as you can.
10. Send a copy of the book to the printer. (Please don't actually hit print! Save some trees.)

## TEST TASK INSTRUCTIONS – MOBILE DEVICES

## GROUP C – EBL & EBRARY

1. Open the following book, <u>Kuhn's The Structure of Scientific Revolutions Revisited.</u>
2. Flip through a few pages, then access Part I Section 3, From Paradigm to Disciplinary Matrix and Exemplar.
3. Locate the only instance of the word "fish" in this book.
4. Download a copy of the book, or as much of the book as you can.

5. Open the following book, Robert Feenstra and Wei Shang-Jin's <u>China's Growing Role in World Trade.</u>
6. Flip through a few pages, then access Part I Section 3, China's Local Comparative Advantage.
7. Locate a usage of the word "march" in this book.
8. Download a copy of the book, or as much of the book as you can.

## GROUP D – EBSCO & WILEY

1. Open the following book, Sanford Kwinter's <u>Architectures of Time: Toward a Theory of the Event in Modernist Culture.</u>
2. Flip through a few pages, then access Section 3, Physical Theory and Modernity: Einstein, Boccioni, Sant'Elia.

3. Locate the only instance of the word "analyzed" in this book.
4. Download a copy of the book, or as much of the book as you can.

5. Open the following book, Robert Blackledge's <u>Forensic Analysis on the Cutting Edge: New Methods for Trace Evidence Analysis.</u>
6. Flip through a few pages, then access Chapter 3, Ink Analysis Using UV Laser Desorption Mass Spectrometry.
7. Locate a usage of the word "fishing" in this book.
8. Download a copy of the book, or as much of the book as you can.

## EVALUATION MEASURES

There were no established task benchmarks. A task was defined as a single step in the participant instructions. Usability performance is instead measured by comparing task completion times and navigational errors for each platform. Time allowed for task completion was limited to six minutes.

Time to task completion was recorded, provided it was less than six minutes. In the event that a user is unable to complete the task, or elects not to complete the task, the time to completion was recorded as six minutes.

Navigational errors were defined as selections or tools accessed by users that do not lead to the desired task action.

## TEST RESULTS BY GROUP

For full individual test results, see Appendix A, Sheet 2 – Individual Tests.

### GROUP A – PC: EBL & EBRARY

| | Time to Completion (mm:ss) | Navigational Errors | |
|---|---|---|---|
| | Mean | Mean | Mode |
| Task 1 | 3:35 | 2 | 2 |
| Task 2 | 1:23 | 0 | 0 |
| Task 3 | 1:11 | 1 | 1 |
| Task 4 | 1:37 | 0 | 0 |
| Task 5 | 2:43 | 1 | 0 |
| Task 6 | 1:18 | 0 | 0 |
| Task 7 | 2:18 | 0 | 0 |
| Task 8 | 3:55 | 1 | 0 |
| Task 9 | 0:44 | 0 | 0 |
| Task 10 | 0:29 | 0 | 0 |

### GROUP B – PC: EBSCO & WILEY

| | Time to Completion (mm:ss) | Navigational Errors | |
|---|---|---|---|
| | Mean | Mean | Mode |
| Task 1 | 1:15 | 0 | 0 |
| Task 2 | 1:53 | 0 | 0 |

| | | | |
|---|---|---|---|
| Task 3 | 3:16 | 2 | 4 |
| Task 4 | 3:01 | 2 | 3 |
| Task 5 | 2:11 | 1 | 0 |
| Task 6 | 1:22 | 0 | 0 |
| Task 7 | 1:30 | 1 | 0 |
| Task 8 | 6:00 | 2 | 0, 4 |
| Task 9 | 2:23 | 2 | 1 |
| Task 10 | 0:15 | 0 | 0 |

## GROUP C – MOBILE: EBRARY & EBL

| | Time to Completion (mm:ss) | Navigational Errors |
|---|---|---|
| | Mean | Mean |
| Task 1 | 1:12 | 0 |
| Task 2 | 0:46 | 0 |
| Task 3 | 0:43 | 1 |
| Task 4 | 6:00 | 0 |
| Task 5 | 1: 39 | 0 |
| Task 6 | 6:00 | 0 |
| Task 7 | 6:00 | 0 |
| Task 8 | 6:00 | 0 |

## GROUP D – MOBILE: EBSCO & WILEY

| | Time to Completion (mm:ss) | Navigational Errors |
|---|---|---|
| | Mean | Mean |
| Task 1 | 5:36 | 2 |
| Task 2 | 6:00 | 2 |
| Task 3 | 6:00 | 0 |
| Task 4 | 3:31 | 1 |
| Task 5 | 1:13 | 0 |
| Task 6 | 1:37 | 1 |
| Task 7 | 6:00 | 1 |
| Task 8 | 1:46 | 0 |

## QUESTIONNAIRE RESULTS BY GROUP

For full individual results, see Appendix A, Sheet 1 – Individual Questionnaires. To view the questionnaires as distributed, see Appendix B.

### BACKGROUND INFORMATION

Total participants: 15. Total mobile participants: 5.

### PARTICIPANT'S USER GROUP – WHOLE STUDY

Undergraduate Students: 60%

Graduate Students: 33%

Faculty: 7%

## PARTICIPANT'S USER GROUP – MOBILE TESTING

Undergraduate Students: 20%

Graduate Students: 80%

## FREQUENCY OF EBOOK USE

Once or twice in the last six months: 60%

More than once a week during the last six months: 20%

Every two weeks during the last six months: 6.6%

Three to five times during the last six months: 6.6 %

Never: 6.6 %

## COMFORT LEVEL WITH EBOOKS

Users were offered a scale to indicate their comfort level with eBooks, ranging from 1 (Not at All) to 5 (Very Comfortable). Of our participants:

- 33% ranked their comfort level as a 2.
- 13% ranked their comfort level as a 3.
- 46% ranked their comfort level as a 4.

Only one user indicated the highest level of comfort with eBooks.

## TASK FEEDBACK – EASE OF COMPLETION

Participants were asked to indicate how easy they found a given task by selecting a number on a scale from 1 (Very Frustrating) to 5 (Very Easy).

## MEAN & MODE OF GROUP A – PC: EBL & EBRARY

|              | Mean | Mode |
|--------------|------|------|
| Tasks 1 & 2  | 4.2  | 4,5  |
| Task 3       | 4    | 4,5  |
| Tasks 4 & 5  | 4.2  | 5    |
| Tasks 6 & 7  | 4.8  | 5    |
| Task 8       | 2.2  | 1,2  |
| Tasks 9 & 10 | 4.2  | 5    |

## MEAN & MODE OF GROUP B – PC: EBSCO & WILEY

|  | Mean | Mode |
|---|---|---|
| Tasks 1 & 2 | 4 | 3 |
| Task 3 | 2.8 | 1,4 |
| Tasks 4 & 5 | 2.6 | 1,3 |
| Tasks 6 & 7 | 4.6 | 5 |
| Task 8 | 1.4 | 1 |
| Tasks 9 & 10 | 3.2 | 2 |

## MEAN OF GROUP C – MOBILE: EBL & EBRARY

|  | Mean |
|---|---|
| Tasks 1 & 2 | 4.5 |
| Task 3 | 5 |
| Task 4 | 3.5 |
| Tasks 5 & 6 | 3.5 |
| Task 7 | 2.5 |
| Task 8 | 1.5 |

## MEAN OF GROUP D – MOBILE: EBSCO & WILEY

|  | Mean |
|---|---|
| Tasks 1 & 2 | 1.3 |
| Task 3 | 3.6 |
| Task 4 | 2 |
| Tasks 5 & 6 | 3.6 |
| Task 7 | 3.6 |
| Task 8 | 1.6 |

## PLATFORM PREFERENCE

Participants were asked which set of tasks they found easiest to complete as a way to measure platform usability preference.

### GROUP A – PC: EBL & EBRARY

75% of participants that expressed an opinion indicated that EBL was the easier platform to use, of the two platforms presented. One user indicated they found Ebrary more usable, and one user indicated that both platforms were equally usable.

### GROUP B – PC: EBSCO & WILEY

80% of participants indicated that they found EBSCO the easier platform, of the two platforms presented.

### GROUP C – MOBILE: EBL & EBRARY

Both participants indicated that EBL was the easier platform to use, of the two platforms presented.

### GROUP D – MOBILE: EBSCO & WILEY

Two participants indicated that Wiley was the easier platform to use of the two platforms presented, and one participant indicated no preference.

## MOST FRUSTRATING TASKS

### GROUP A

80% of participants could not select three "most frustrating tasks", instead selecting one or two. 60% indicated that searching in Ebrary was one of the most frustrating tasks.

### GROUP B

60% of participants could not select three "most frustrating tasks". 80% of participants indicated that searching in Wiley was one of the most frustrating tasks, while 60% indicated they were also frustrated by downloading as much of the book as you can in Wiley.

### GROUP C

Both participants indicated that searching for content and downloading in Ebrary were among the most frustrating tasks.

### GROUP D

All participants indicated that downloading in EBSCO was among the most frustrating tasks. Two participants each indicated that opening a book in EBSCO and browsing EBSCO title content were among the most frustrating tasks.

## EASIEST TASKS

### GROUP A

Group A's selection of "easiest" tasks was fairly evenly divided among tasks 1-7 and 9-10. No group A member selected searching in Ebrary as an easiest task, and 60% selected browsing EBL content as one of the easiest tasks.

### GROUP B

Similar to Group A, there was a wide spread in Group B's selection of easiest tasks, with printing from EBSCO, printing from Wiley, and browsing Wiley all receiving two selections. 80% of respondents found searching the catalogue for the EBSCO title among the easiest tasks. Interestingly, although 60% of respondents indicated that browsing content in EBSCO was among the easiest tasks, most participants noted negative impressions of the browsing interface during testing.

### GROUP C

Both participants listed the first three tasks (searching the catalogue, browsing content, and searching in the EBL title) as the easiest tasks in our testing session.

## GROUP D

All participants indicated that searching in Wiley was among the easiest tasks in their testing session. Searching in EBSCO, searching the catalogue, and browsing content in Wiley were listed as part of the three easiest tasks by two participants each.

## ANALYSIS

### GENERAL NOTES ON SEARCHING AND OPENING EBOOK TITLES

### USABILITY ISSUES

Clicking Open Source in New Window

- Users clicked Open Source in New Window expecting the text to open immediately, and seemed confused when they were confronted with the same catalogue entry.

Get It at UML loops (EBSCO and Wiley)

- There are Get it at UML buttons present in both EBSCO and Wiley eBook platforms. Users clicked these buttons thinking it would allow them to download/access the book or chapter, and were confused when they were returned to the previous catalogue entry.
- Four users (two in PC testing sessions, two in mobile) experienced difficulty due to these Get it at UML buttons, with three completing more than one "loop" of clicking Get It after already accessing the title, opening the title again through the resulting catalogue entry, and clicking on Get It in the platform a second time.

Mobile Search Results Display First Result Off-Screen

- When searching in One Stop Search on a mobile phone, the results page loads already scrolled past the first result. This led to confusion for multiple mobile testing participants: it isn't intuitive to scroll back up immediately upon a page loading.

Sign In

- Multiple users expressed confusion that there were two separate sign in links. In one instance, this led to a user going significantly over the maximum task time.

### EBL

### USABILITY ISSUES

**Programs Required to View Downloads**

- Although participants could easily locate the button to download the text, only one participant noticed that specific programs are required to read the files on both mobile and PC. This participant indicated that

the long download/install time for the program meant she was less likely to pursue downloading the eBook.

- Ratings of "easy" on this task likely reflected the ease of locating the button, and that most PC participants appeared unaware that they required a non-standard program to view the download.
- The "not available" page that appears when a user clicks download on a mobile platform is particularly confusing, and doesn't provide any feedback to users, or indicate that they need the eReader program in question.

**Multiple Search Functions Confuse Participants**

- 60% of PC participants clicked the EBL-wide search before clicking the in-book search. Despite the common error, task completion times for PC remained under two minutes, and participants on both platforms indicated that accomplishing the task was "easy" or "very easy".

**EBL Page is Not Designed for Mobile**

- Participants on mobile devices had some difficulty navigating the webpage (on par with the difficulty experienced in Wiley ebooks, with greater usability than Ebrary and EBSCO).

**PDF Button is Potentially Confusing**

- The PDF button doesn't seem necessary for users, and can be confused with a download option. One participant thought they had downloaded a pdf of the entire book by clicking on that link, and then right clicking to save the individual page pdf.

## NOTABLE USER QUOTES

**Navigating EBL Books**

- "This is actually one of the good eBooks. I can just [scroll]."

## EBRARY

## USABILITY ISSUES

**Search Results are Difficult to Understand**

- Search results are displayed with bars demonstrating the frequency of searched words in each section or book chapter. This appeared to be completely unintelligible to our participants. Many clicked on chapters experimentally, with no regard for the bar indicators.
- 60% of PC participants eventually gave up, unable to locate the word.

**Mobile Display is Unusable**

- Both mobile participants were unable to determine how to view the text.
- The menu itself seems usable and intuitive, but needing to "exit" out of the menu display to view the results of your menu selections didn't occur to any of our participants.

**Multiple Search Functions Confuse Participants**

- The Proquest/Ebrary wide search was twice clicked by users before they located the in-book search. They seemed to self-correct quickly, although the difficulty of understanding search results likely compounded their frustration.

## NOTABLE USER QUOTES

**Searching in Ebrary**

- "I was expecting it to like, highlight the word march here, but it's not…"
- "I don't get why it doesn't show me… like in the previous [platform] it suddenly shows me where it is"
- "I'm confused"

**Mobile Usability**

- "I'm not really sure how to flip through the pages."
- "It says it's available for online reading but I can't."
- "It's not possible to find anything I think, like a single word… […] I didn't open any chapter!"

## EBSCO

## USABILITY ISSUES

**Loading Times**

- Loading each page as a pdf takes a considerable amount of time, and 80% of PC participants commented on the long load times in EBSCO.

**Navigating Content**

- Participants were confused that they were unable to navigate through pages by scrolling or using the up and down directional keys.
- One participant in the EBL/Ebrary group was so confused by encountering this in their regular research that they asked if they could discuss the platform after their testing session finished.

**Searching**

- Two participants accustomed to using Ctrl+f as a short cut quickly determined that this approach wasn't working, but were unable to locate another search feature, scanning along the left side and top of the text area.
- Another individual located the search feature, but missed the results completely for several minutes – they assumed the search wasn't working.
- The participant who had a hard time seeing their search results then gave up completely on realizing that the keyword hadn't been highlighted in the text.

**Mobile is Unusable**

- None of the mobile participants could make sense of EBSCO downloading individual pages to their phone (Android-only problem).
- As a result, the only mobile task participants viewed as requiring an acceptable amount of effort was searching the text – because it was the only task they could comfortably complete without viewing the page.

**Downloading Content**

- Five participants across mobile and PC expressed difficulty with the tool menu terminology – specifically that of Save Pages.
- These participants skipped the Save Pages option entirely, four of them opting instead for "Export" – and then becoming confused when that option only allowed for citation export.

**Page Printing Allowance**

- Multiple participants were confused by the page printing instructions being phrased as "current page and ___ pages". They automatically placed the entire page limit amount into the available blank, and had to correct on receiving error messages.

## NOTABLE USER QUOTES

**Navigating Content (PC)**

- "It takes a while to load."
- "It's confusing. Usually in a book [you hit the down arrow] and it should come, but in this book […] to go to the next page you click here."
- "Am I supposed to download this first or..?" (referencing a long load time)
- "The ones that only give you a page at a time… they're so frustrating to read. It just breaks up all flow…"

**Mobile Usability**

- "Maybe signing in would help? 'Cause it says sign in? I thought I was signed in."
- "There should be a hint button […] or like, frequently asked questions: I can't see my book."
- "It's… not showing up. [laughs]"
- "There is option but it's not viewable here. Maybe I need… maybe firefox?"

**The Tool Menu**

- "That's pretty easy – the tools are very noticeable and clear."
- "Yeah at this point I would be pretty frustrated." – regarding Save Pages being used instead of Export.

**Page Printing Allowance**

- "What?!  You said I could do that! Ohhh current page AND the next."

## WILEY

## USABILITY ISSUES

**Searching Does Not Work**

- Wiley's search functionality locates the chapter or book section that the key words are contained in, but doesn't tell users where in that section the word is. PDF search within chapters is unreliable.
- This means that no participant, across both mobile and PC platforms, was able to successfully complete the Wiley search task, and PC participants in particular ranked searching Wiley as very frustrating.

**Save to Profile Feature Doesn't Make Sense to Users**

- Two participants attempted to use the Save to Profile feature to download all book chapters, and were confused when this appeared to do nothing.
- One user attempted to sign in to use the feature, and didn't understand that it was a separate account from their Manitoba Libraries account.

**Clicking Chapter Titles**

- Two participants experienced initial confusion that clicking on a chapter title didn't lead to the text immediately, although they did go on to locate the subsequent PDF link.
- This didn't appear to have a strong impact on frustration ratings – across PC and mobile, all but one participant rated the tasks of accessing the title and browsing either easy or very easy.

## NOTABLE USER QUOTES

**Searching**

- "In the whole book? Oh god. How'm I supposed to do that?"
- "I don't know exactly where fishing is gonna be, but it's gonna be somewhere in this chapter I guess? It's not as direct as the other search was."
- "Okay, uh… I don't really know what to make of that." – after trying an in-chapter PDF search in the chapter indicated by Wiley's search and getting no results.
- "They should highlight the text or something, help me locate the word, you know? […] Even if it's in there in this chapter, I don't have that much time you know? […] There should be a smarter way."
- "Let's say my assignment is due in half an hour and I have to just find that fishing word – I would just give up, and I would just move to the next [thing]"

**Downloading & Save to My Profile Confusion**

- "I don't like to download this section by section, but I don't see any way to like, get the whole thing at once."
- "Save to my profile – I don't know what happened after that."
- "I'm just clueless, it's not telling me anything."

## RECOMMENDATIONS FOR LIBRARY STAFF

- Be aware of the potential usability issues for each platform, particularly reference and desk staff that may be called upon to answer questions.

- EBL is the most usable eBook provider across all platforms, although we may need to publicize Adobe Digital Editions for users wishing to download (particularly faculty & graduate students).
- EBSCO and Ebrary are poor choices to purchase eBooks from if mobile usability is at all a factor.
- Ebrary and EBL are the most usable available options for PC access.