



UNIVERSITY OF TORONTO
LIBRARIES

Student Experience of eBooks

How they are found, used and (not) read

Peter H. Jones, Ph.D.

Redesign Research

Ontario Library Association Superconference
Toronto, January 29, 2009

Who here ...

Has referenced a book quote with Google Book search?

Has read an eBook chapter (not journal) online?

Has read an entire eBook online?

Has an eReader – Sony or Kindle?

Purpose and Context

In-depth mixed-method study to evaluate uses & user understanding of eBooks.
To better understand contexts of use for students & scholars, & to identify innovations.



Study conducted *during* period of change:

- Historical addition of new e-content
- Conversion of UTL to 2 new platforms
- Changes to Scholars Portal, UTL websites



Why this study?

As we started in 2008, only **29 relevant published** studies in scholarly literature
Only 2 were *user studies* – and these were irrelevant to our study.

No other studies reporting on actual user behavior (survey + **direct observation**).

JISC/CIBER eBooks Observatory (2008)

Large survey, log analysis, some interviews. But only 3000 eBooks.

UTL has added over 300K eBooks to the collection. As of 2009, total > 500K.

We also have usage stats, logs, survey, and personal insights.

But direct observation & interaction tells the user's story.

Do eBooks Follow the eStory?

What we have heard about scholarly eBook adoption:

If we build it, they (users) will come.

“They will follow the adoption of eJournals in 1997”

Full adoption of eBooks is inevitable.

And - Younger students like to do everything online & prefer to read from the screen (JISC/CIBER)

Do eBooks Follow the eStory?

eBooks *are* different.

Let's start with some major points.

As Books are Different.

Not all media transform directly to e-forms.

And, while journals are now *typically* read online

Print books are not going away –

- Ever more authors & publications
- Serious readers (still) love print.

We found - Undergraduates, the current generation that grew up with Google ...

Prefer print *textbooks* to eBooks, even at lower costs.

And still prefer to read books from a printed page.

Why is this?

Students like books for ...

Portability

Accessibility

Ultimate usability

Easy to browse & scan

High quality artwork

Can bookmark, visually return

Personalizable

Mark-up, Inscribed

Durable & persistent

Can be loaned & returned

Meaningful identity on shelf

Social identity marker

Beauty of the package & cover

Feel of the book & paper

Sensual attributes – smell & feel

Zoom out

and graphics. But Kandinsky nevertheless found the art scene in Munich too conservative, too bourgeois and narrow-minded, dominated by doctrines of academic mediocrity. In the following "Phalanx" exhibitions he tried to present trends in art that he regarded as under-represented. These were mainly the work of Impressionist, Symbolist and Jugendstil (Art Nouveau) artists.

The second "Phalanx" exhibition was devoted mainly to Jugendstil works. Kandinsky himself felt more and more drawn to the potential of abstract forms in Jugendstil, and in his sketch books he drew many designs for appliqué, jewellery, ceramics and furniture.

However, he produced almost no large oil paintings in this initial period of experiment, devoting his time to the politics of the art scene. One of the earliest *Old Town II* (p. 14), shows a colourful view of a highly stylized town inspired by a trip to Rothenburg ob der Tauber. It perfectly expresses the fantastic unworldly mood that Kandinsky was caught up in in his early years in Munich. *The Blue Rider*, a painting that seems like a harbinger of what was to come, also belongs to this romantic genre of transfiguration.

The woodcut provided him with an adequate means of creating stylized forms and at the same time giving them a symbolic dimension. One of his earliest is the *The Singer* (1903; p. 11) which, with its flowing Jugendstil lines and ornamental division of space, has an obvious affinity to music. Kandinsky was convinced that there was an inner correspondence between a work of art and the viewer. He called this correspondence "Klang" (sound or resonance). *The Singer* could be an early expression of this belief, which Kandinsky later illustrated with a similar image in his theoretical work "Concerning the Spiritual in Art":

"Generally speaking, colour is a power which directly influences the soul. Colour is the keyboard, the eyes are the hammers, the soul is the piano with the strings. The artist is the hand which plays, touching one key or another, to cause vibrations in the soul."

In 1904 Kandinsky brought out a series of woodcuts entitled *Poems without Words*. He published a second series under the suggestive title *Xylographs* (xylograph is another word for woodcut but is also reminiscent of the word xylophone). In 1915 Kandinsky's last series of woodcuts appeared in *Klänge* (Sounds), a book of poems and woodcuts. It was the climax of his work using this technique, a technique he regarded as most closely corresponding to lyrical poetry. The idea of merging the various art forms suggested by the synthesis of word, picture and sound in Kandinsky's woodcut cycles was common in all progressive circles in Munich and elsewhere, and accelerated the development of abstract visual expression.

The motifs of his woodcuts stemmed primarily from the world of folk tale and legend or Kandinsky's own imagination, which was particularly inspired by images from historical periods



Detail from the *Poster for the First Phalanx Exhibition*, 1901
Colour lithograph, 52 x 67 cm
Munich, Städtische Galerie im Lenbachhaus

Illustration opposite:
Conastery and Favourite in Kochel, 1900
Friedhof und Pfarrhaus in Kochel
Oil on cardboard, 44.4 x 52.7 cm
Munich, Städtische Galerie im Lenbachhaus

Illustration p. 18:
Gabriele Münter beim Malen in Kallmünz, 1905
Gabriele Münter beim Malen in Kallmünz
Oil on canvas, 58.5 x 58.5 cm
Munich, Städtische Galerie im Lenbachhaus

Illustration p. 19:
Gabriele Münter, 1905
Oil on canvas, 45 x 45 cm
Munich, Städtische Galerie im Lenbachhaus

And then there's Google.
Students, grad students,
just about everyone ...

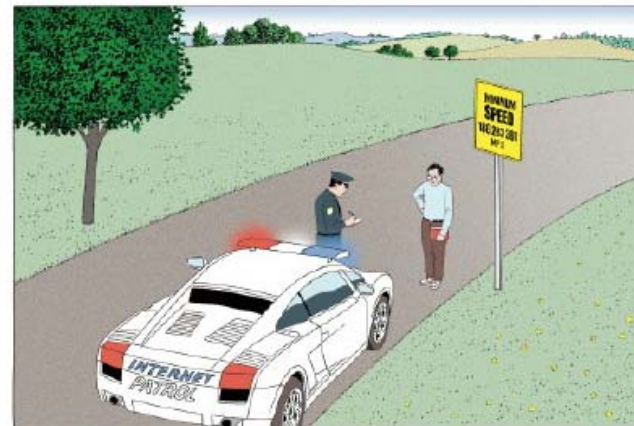
Uses Google or Web search,
for anything that's findable.

Students used Google to find UTL site!

How do we adapt to this?

Is Google Making Us Stupid?

Illustration by Guy Billout



Atlantic: "(UCL) found that people using the sites exhibited "a form of skimming activity," hopping from one source to another and rarely returning to any source they'd already visited. They typically read no more than one or two pages of an article or book before they would "bounce" out to another site. *Sometimes they'd save a long article, but there's no evidence that they ever went back and actually read it.*"

Why is this?

Time dedicated to research is limited.
Few do exhaustive searches.

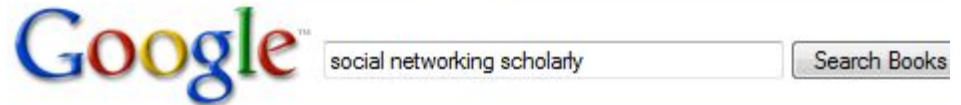
We can pre-qualify a title before
acquiring.

Students are overwhelmed with class.
Cognitive & information overload.
And Web content.

In managing cognitive load, Google
permits **natural selection**.

Students are **Foraging & Hunting**.

[Web](#) [Images](#) [Maps](#) [News](#) [Shopping](#) [Gmail](#) [more](#) ▼



Books Showing: All books
« [View all web results for social networking scholarly](#)



[Sociological Abstracts - Page 2994](#)

by Leo P. Chall - [Sociology](#) - 1952

She argues that the network perspective can advance **scholarly** understandings, clarifying many of these controversies. She focuses on **social capital** as ...

Snippet view - [About this book](#) - [Add to my library](#) - [More editions](#)



[If We Build It: Scholarly Communications and Networking](#)

by North American Serials Interest Group Conference, North American Serials Palm, Pam Dunn - [Language Arts & Disciplines](#) - 1993 - 326 pages

The Program Committee chose "If We Build It: **Scholarly** Communications and Technologies" as the theme of this year's conference. ...

Limited preview - [About this book](#) - [Add to my library](#) - [More editions](#)



[Social Network Analysis: A Handbook](#)

by John Scott - [Social Science](#) - 2000 - 208 pages

The revised and updated edition of this bestselling text provides an accessible network analysis in the social...

Limited preview - [About this book](#) - [Add to my library](#) - [More editions](#)



[Six Degrees: The Science of a Connected Age](#)

by Duncan J. Watts - [Mathematics](#) - 2003 - 368 pages

In this remarkable book, Duncan Watts, one of the principal architects of network research that he and other...

Limited preview - [About this book](#) - [Add to my library](#) - [More editions](#)



[Social Network Analysis: Methods and Applications](#)

by Stanley Wasserman, Katherine Faust - [Social Science](#) - 1994 - 825 pages

As the first book to provide a comprehensive coverage of the methodology and reference book and a textbook.

Limited preview - [About this book](#) - [Add to my library](#)

Is this a problem?

Students & scholars have necessarily different information practices.
Aside from technology, what's the difference?

Use of eBooks shows same split between book & journal users.

Use of eResources, eBooks, & starting point for research follow.

Science (2009) article shows faculty overwhelmingly rely on Google
For teaching, their goal lecture notes or images (NSDL).

Research destination is refereed article or book of interest.

1

eResources Survey (2008)

301 Respondents:

244 Students
44 Faculty
13 Staff / Librarians

Students:

First Year 1 %
Second Year 10 %
Third Year 10 %
Fourth Year 43 %
Master's 27 %
Doctoral 9 %

Library savvy respondents

Self-selected based on interest & experience with eResources.

Positive selection bias.

Did NOT reveal focus on eBooks, but it would be inferred by last page.

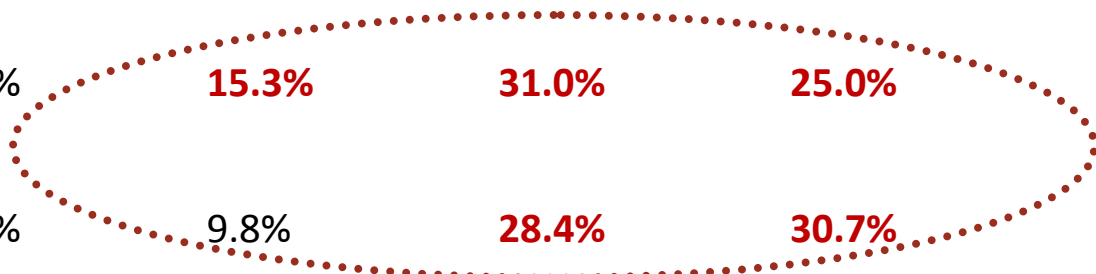
From

Arts and Sciences 55%
Information Studies 15 %
AS & Engineering 7 %
Business / Mgt 5.5 %
Education 4 %

Students start research with...

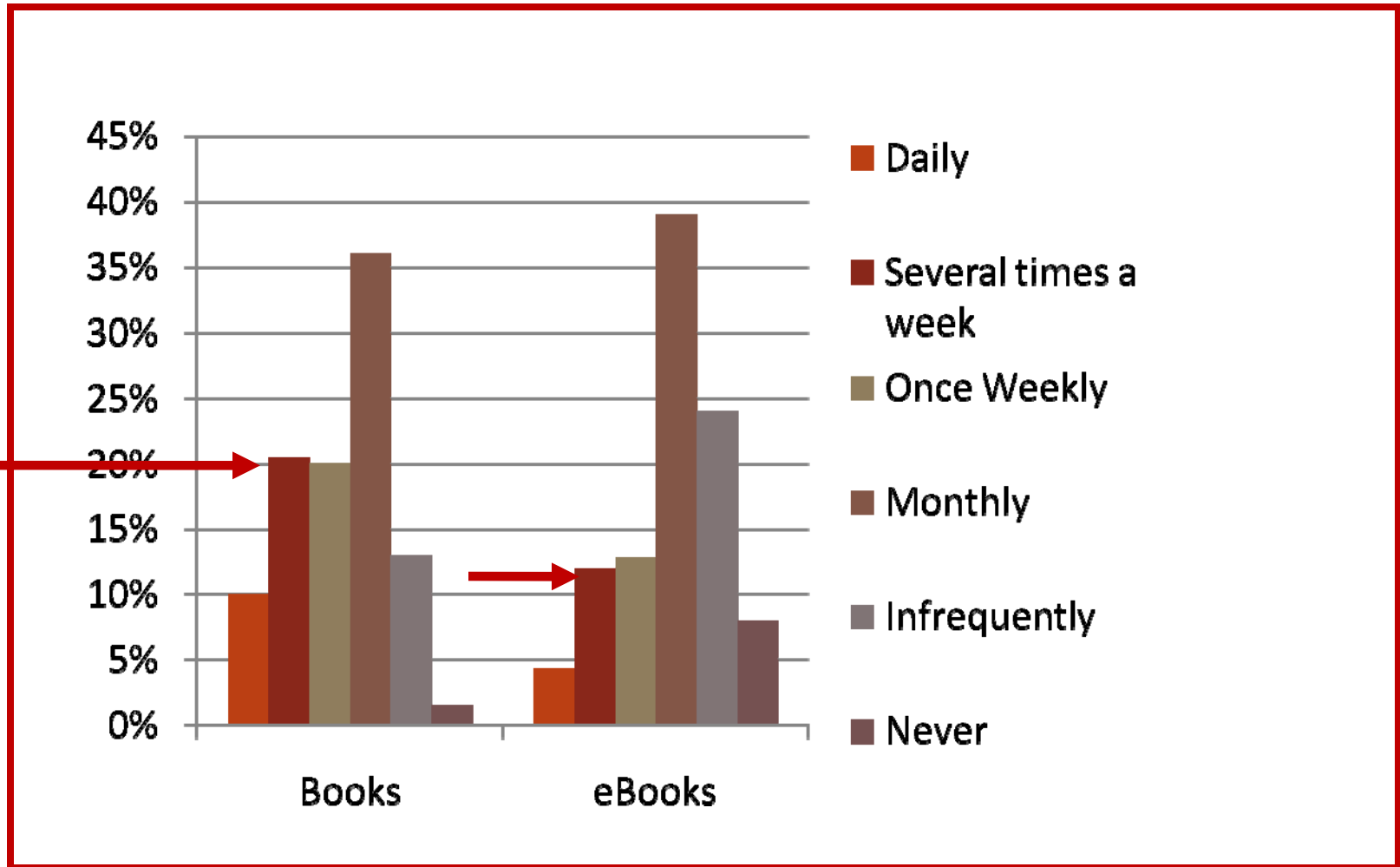
Resource	Usually start research with	Often use to start	Often use throughout research	Use as supplemental	Rarely or never use
Web search engines	32.4%	29.7%	17.8%		
Wikipedia	14.0%	23.3%	15.8%		
Google Scholar	11.5%	16.6%	17.5%		
eBooks (Web)	6.0%	15.3%	31.0%	25.0%	22.7%
eBooks (UTL)	6.5%	9.8%	28.4%	30.7%	24.7%

Respondents were allowed to select > 1 for each condition, reflecting actual use of multiple resources.

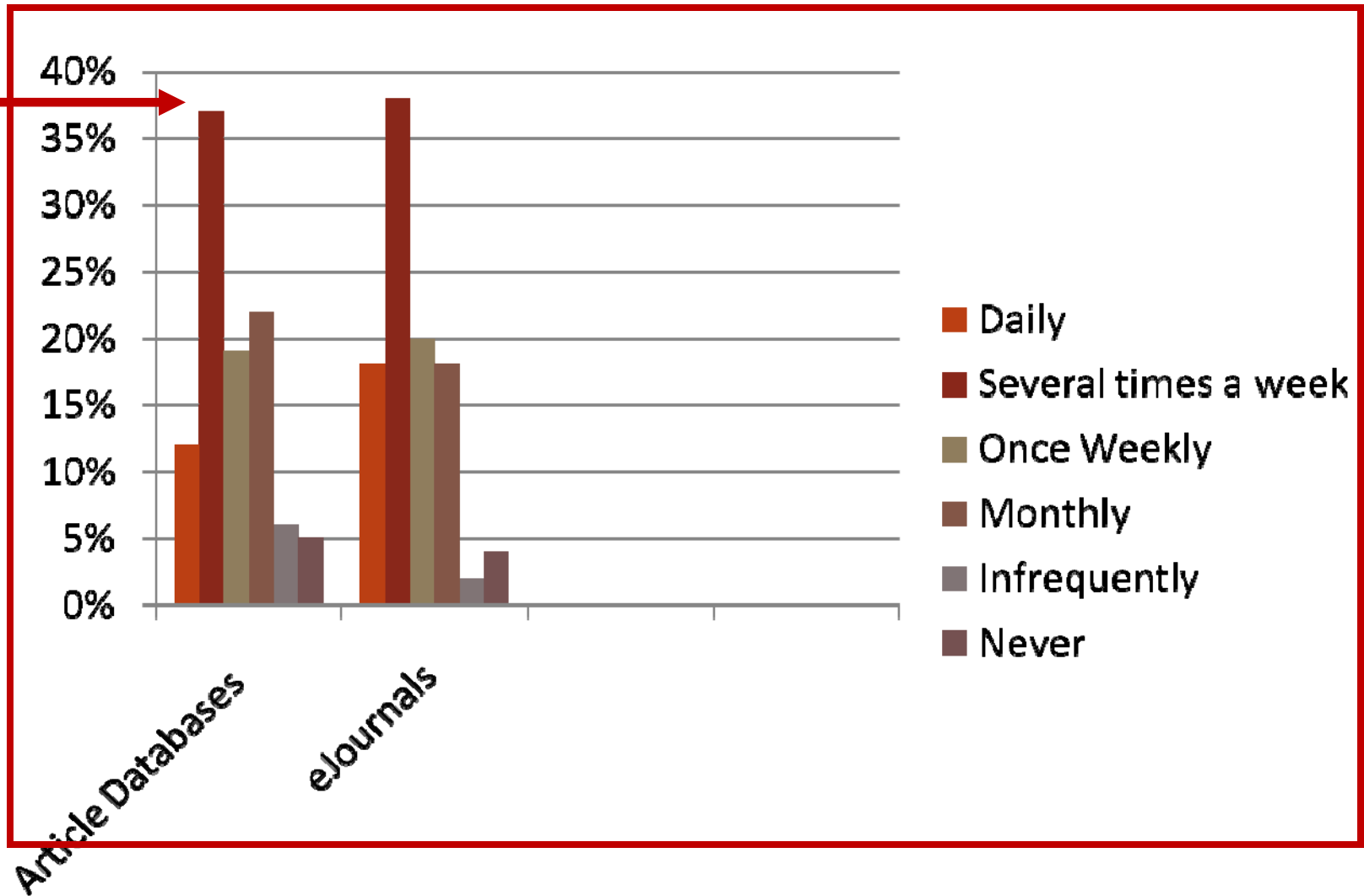


eBook responses show more start with Web eBooks than UTL. This reflects starting with Web searches in general (& awareness).

Books used ~twice eBooks



Journals used frequently

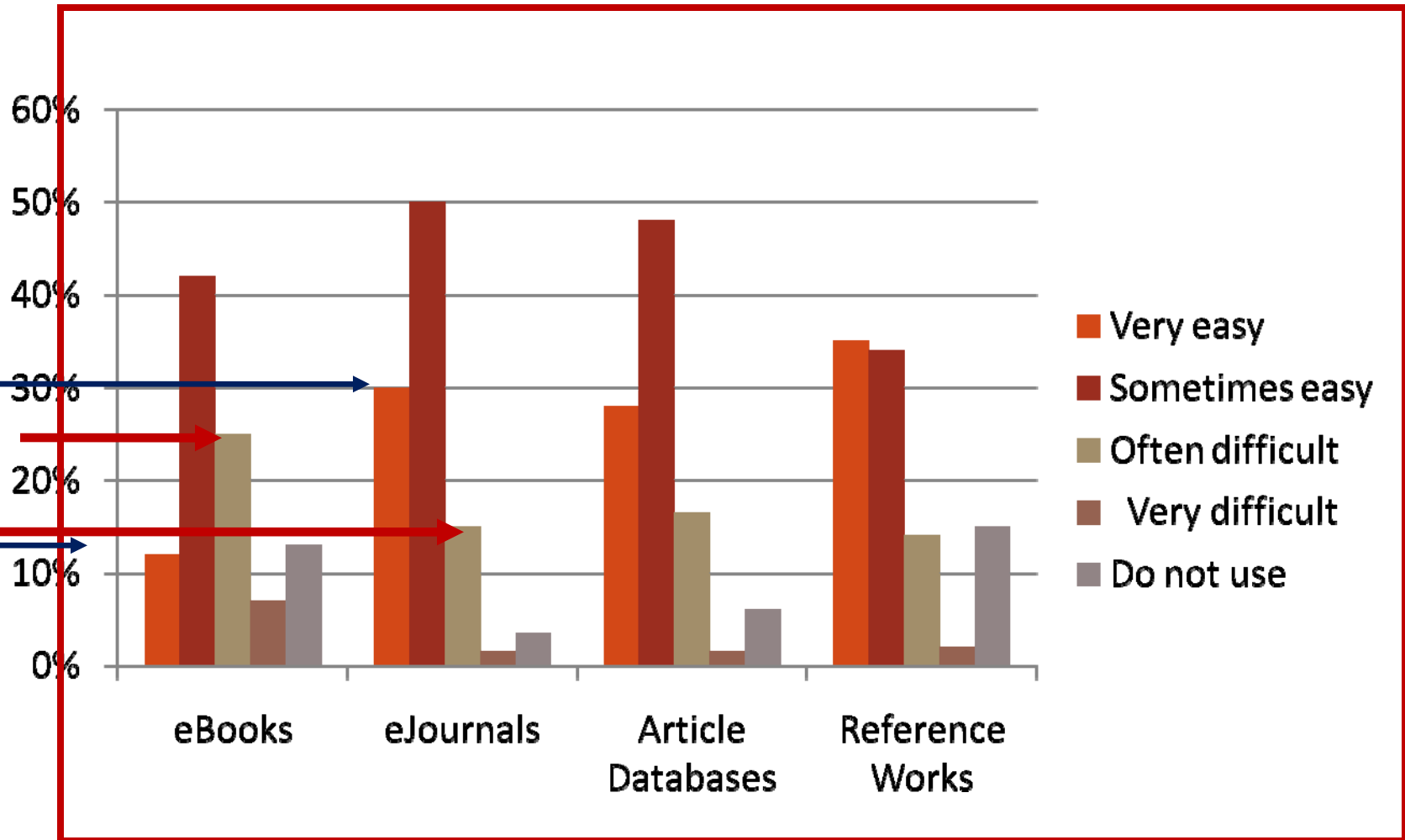


eBooks a *critical* resource?

Users rate 5 electronic resources as "critical resource" or "very important"

- A&I databases 75%
- e-journals 93%
- **eBooks** **58%** **(25% "Critical")**
- e-reference 58% **(30% Critical)**
- Subject area websites 54%

Is usability a barrier?



2 Interactive User Research

Purpose: Understanding user behaviors, sensemaking, trends

Method: Contextual interview, interactive observation

Resources: Any. Followed user direction, inquiry on eBooks

Users: 28 (11 Students, 8 Grad Students, 5 Professors, 4 Librarians)

Session guided by user:

- What are you working on?
- Show me searches
- Find useful materials
- Where do you find eBooks?
- Critical review while doing

The screenshot shows a web browser window displaying the University of Toronto website. The page title is "Herbal and Magical Medicine: Traditional Healing Today" by James K. Kirkland. The page content includes a table of contents and an introduction. A search bar in the top right corner contains the text "north carolina". A "Find" dialog box is open, showing the search results. A "Text not found" error message is displayed in a Windows Internet Explorer window, with the "OK" button highlighted in yellow. A red arrow points from the search bar to the error message.

Research starting points

We observed students conduct actual research of interest, to observe their real world responses in real time.

Contrary to CIBER, **students do not all start with Google.**

(1) Scholars Portal (2) Web (3) Catalogue (4) Library eResources

But years of interaction with Web have created “lazy” search habits. Students enter the simplest (1 or 2) terms to display meaningful results.

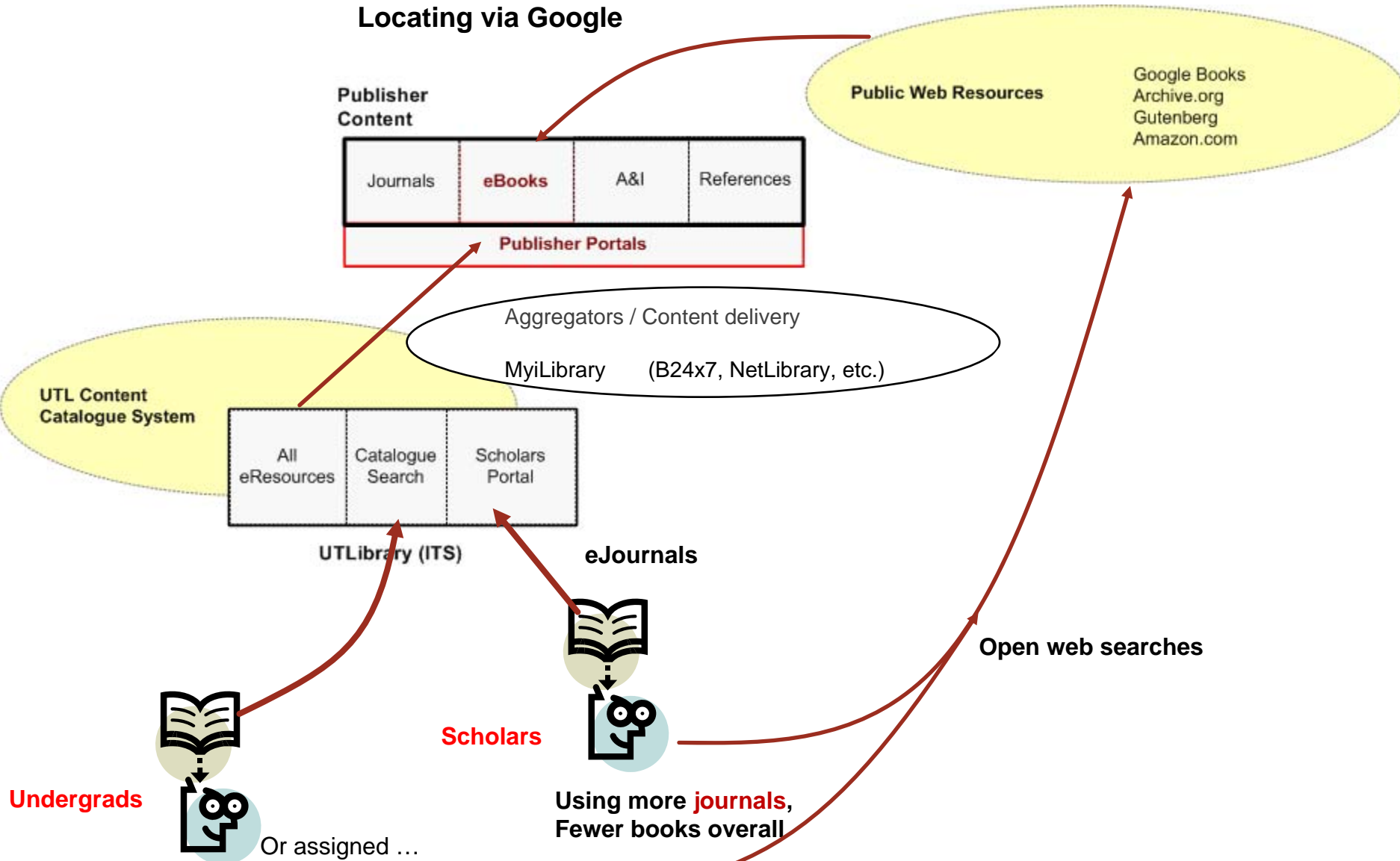
Not a problem, as (Herbert) Simon says, people *satisfice*. For students, Google gets them “close enough” to their destination.

But with eBooks, it complicates **findability**, as books are not discoverable in collections today with subject terms.

New format (record type) + inconsistent publisher metadata

Differences between students (undergrads) and scholars.

Locating via Google



Looking for books, by *subject*

Few students *start* by locating eBooks

Students are following assignments, learning about subjects.

"Rarely go into eBooks for research issues, not easy to find scholarly eBooks. (Perhaps) if I wanted something specific on a subject."

Students have positive expectations for eBooks.

"I hope there are eBooks so I don't have to go to the stacks."

Until they use an aggregator service.

"PDFs are much better - have ability to scroll down the pages. That's why I don't use U of T for eBooks - I imagine the PDFs in are all single page files." **(MyiLibrary was primary platform until 2009)**

eBooks *discovered* in Catalogue

Students discovering eBooks are those looking for books, not journals.

Few *Sciences* students using eBooks – primarily Humanities, Arts.

Nearly *all* students indicated a strong preference for the *printed book*, most for the same reasons.

"I never use eBooks - find it difficult to use them - long and cumbersome."

"Only times I see eBooks is if a copy is available online. I don't like reading things online - cannot highlight or annotate."

"In a traditional book, you can tell what chapter you're in - not in eBooks like this."

Confusing variety of eBook formats, services, UIs

The screenshot shows a web-based eBook interface. At the top left is the 'mylibrary' logo. The main title 'Evolutionary Biology of Aging' is displayed in the top navigation bar. Below this is a dark blue navigation bar with buttons for 'Page: Cover', 'Back', 'Go to page', 'Previous', 'Next', '<<Section >>', 'Citation', and 'RefWorks EndNote'. A left sidebar contains a 'Browse Table of Contents' section with a list of chapters and sections, including 'Cover', 'CONTENTS', '1 The Evolutionary Theory of Aging', '2 Observation of Aging', '3 Experimental Tests of the Evolutionary Theory of Aging', '4 Genetic Mechanisms for the Evolution of Aging', '5 Comparative Biology of Aging', '6 An Evolutionary Perspective on Organismal Theories of Aging', '7 An Evolutionary Perspective on Cellular and Molecular Theories of Aging', '8 The Future of Gerontology', 'BIBLIOGRAPHY', 'AUTHOR INDEX', and 'SUBJECT INDEX'. Below the table of contents is a 'mylibrary pages' section with links for 'my content', 'my new content', 'my resources', and 'available resources'. The main content area displays the book cover for 'Biology of Aging' with a large white title on a blue and green background. A toolbar at the top of the main content area includes icons for printing, saving, and navigation, along with a search bar and a 'Find' dropdown. The page number '1 / 1' and a zoom level of '142%' are also visible. At the bottom left, the URL 'cess.librarv.utoronto.ca' is partially visible.

"I'm finding the UI very inconvenient. Some services will scan each page as a separate PDF file."

"This is aesthetically bad, have to scroll in single page PDF. Page does not fill the screen."

Uncertainty about eBooks

Most think eBooks are scanned books or series of book chapters in PDF format.
(But reports, whitepapers, “non-journals” are also thought of as eBooks).

Students tell us they expect (& hope) eBooks are in single files.
Can download and use later. Do this with music – *and textbooks*.

Usability problems were inhibitors to consistent use –
Formatting of the book, Navigation within eBook, paging contributed:

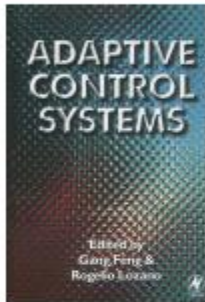
“This is funny, I have to print each page separately! I also find this with JSTOR text that’s online, have to print by page. I prefer a PDF for eBook layout.”

“If liked this eBook, I would get the *printed* book.”

Home + Recent Actions | Browse | Search | My Settings | Alerts | Shopping Cart | Help | Live Chat

Quick Search Title, abstract, keywords Author e.g. j s smith

? search tips Journal/book title Volume Issue Page Clear Go



Adaptive Control Systems

Copyright © 1999 Elsevier Ltd. All rights reserved
Shortcut URL to this page: <http://www.sciencedirect.com/science/book/9780750639965>

Author(s): Gang Feng and Rogelio Lozano
ISBN: 978-0-7506-3996-5

[About this Book](#)

- = Full-text available
- = Non-subscribed
- ? What does this mean?

Table of Contents

- List of contributors, Pages ix-xiii
[PDF \(105 K\)](#) | [View Related Articles](#)
- Preface, Pages xv-xix
[PDF \(304 K\)](#) | [View Related Articles](#)
- 1 - Adaptive internal model control, Pages 1-22
[Abstract](#) | [Abstract + References](#) | [PDF \(1061 K\)](#) | [View Related Articles](#)
- 2 - An algorithm for robust adaptive control with less prior knowledge, Pages 23-40
[Abstract](#) | [Abstract + References](#) | [PDF \(718 K\)](#) | [View Related Articles](#)
- 3 - Adaptive variable structure control, Pages 41-62
[Abstract](#) | [Abstract + References](#) | [PDF \(942 K\)](#) | [View Related Articles](#)
- 4 - Indirect adaptive periodic control, Pages 63-79
[Abstract](#) | [Abstract + References](#) | [PDF \(755 K\)](#) | [View Related Articles](#)
- 5 - Adaptive stabilization of uncertain discrete-time systems
[Abstract](#) | [Abstract + References](#) | [PDF \(1787 K\)](#) | [View Related Articles](#)
- 6 - Adaptive nonlinear control: Passivation and stabilization

Science students found chapter sections a desirable format – portable & similar to familiar PDF articles.

Users were unaware of publisher portals & did not search these sites directly.

Findability in Collections

Students use most efficient path to a “good enough” answer

Most searches composed of *subject* terms
eBooks not indexed by subject metadata (yet)

Awareness limited, **but unaware of limits**

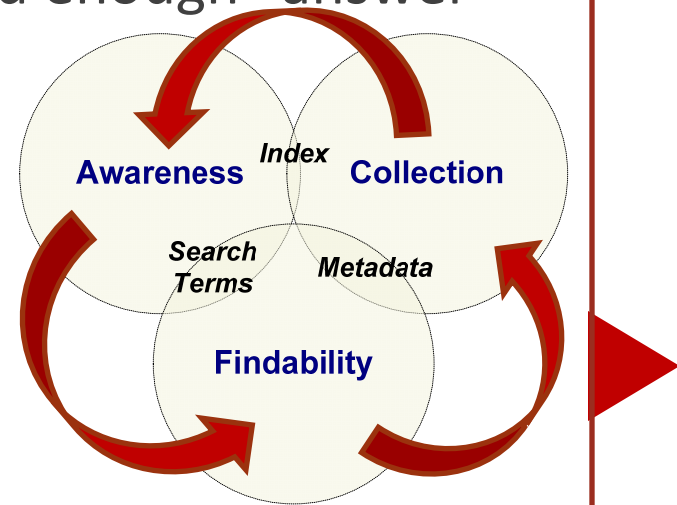
Students don't know where else to look.
And will just use Google – not all return .

Size of eBook collection *not* a major factor in Finding

Yes, easy to find books in large subject area

But too many irrelevant hits counterproductive

Metadata + Indexing needed to help locate relevant eBooks



3 Disciplinary User Research

Began exploring systematic differences / scholars

Humanities: Only regular *book readers/users* among the 4 disciplines.
Use books as primary refs, Largest eBook user target?
Research needs drive specific authors, titles, refs to title

Engineering Need answers & references, agnostic to format or type.
Tend to use journals, tech resources, based on *currency*.

Sciences: Using journals, not books. Not finding eBooks in research.
Problems with books in general, their *currency*

Social /Bus: Journal users, but show real needs for book content.
Are these emerging adopters?

Scholars also start with Google ...

- Google or Scholar usually the starting point for research.

“We search knowing there are limitations, but it always provides answers.”

- For specific titles, Google *Books* used to first find online.

Preview it to determine relevance & possible fit to their needs.

Able to qualify title, author, date, fit to problem.

- Search knowledge required to achieve good results.

Graduate students are experts compared to undergrads.

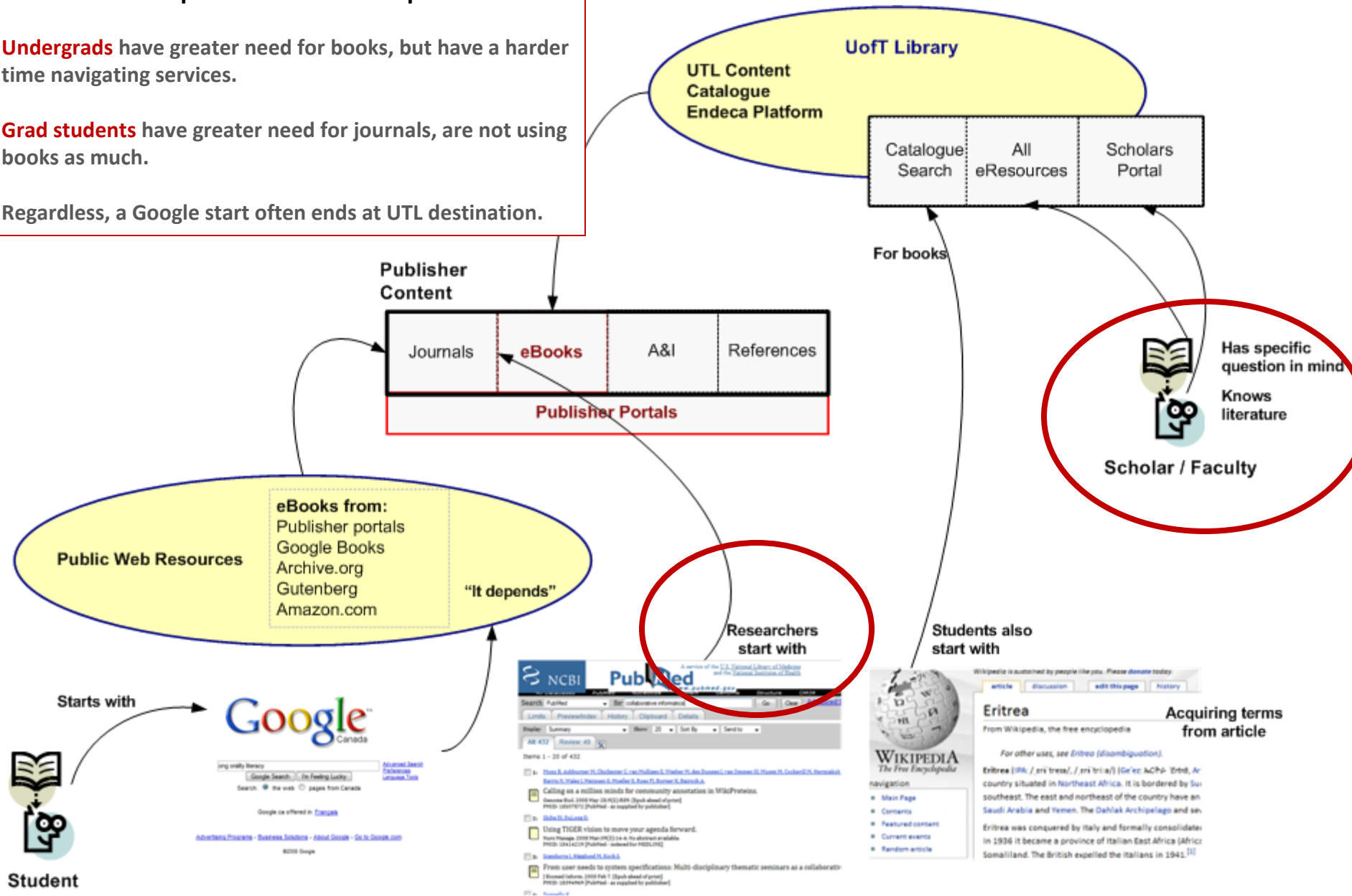
Undergrads unsure how to qualify relevant books or journals.

Students have many other options for locating resources for a question. Consistent patterns:

Undergrads have greater need for books, but have a harder time navigating services.

Grad students have greater need for journals, are not using books as much.

Regardless, a Google start often ends at UTL destination.



Humanities graduate students

Finding Materials for Research:

Information Foraging vs. Targeting

- **Foragers** use *information scent* & use any service to browse. Book cover image helps locate the book in stacks.
- **Targeters**: May have narrow subject (e.g., 19th century art history) Know where to go. Direct searches in Catalogue & Scholars Portal.
- One targeter (prof) searched for eBook title directly: “New Hume Debate,” in All eResources (not eBooks only).
- Both may use online services (WorldCat) to evaluate and qualify books for later dedicated reading.
- **Humanities users were all regular users of Google Books.**

Humanities eBook navigation

Reading, Searching, and Browsing Styles:

- **Little reading online**, Humanities scholars prefer print
- Skim eBook to determine fit or value
- **Skimming**: Forager style, scanning several pages to gain context
- **Searching**: Targeter style, starting methodically with TOC or terms

Book navigation: Insufficient nav tools for cognitive tasks

- Searching – hit relevance, order, & nav confusing
- TOC & Indexes inconsistently linked, must be *scrollable*

Page navigation: All users dislike single-page nav

And trying to print “page by page” is frustrating, time-wasting

The screenshot shows a web browser window displaying a search for 'north carolina' on the University of Toronto website. The search results page shows the title 'Herbal and Magical Medicine: Traditional Healing Today' by Kirkland, James K. (Editor), published by Duke University Press in 1992. A search box in the top right corner contains the text 'north carolina'. A 'Text not found' error message is displayed over the search results, indicating that the search term was not found in the document. The error message is a small dialog box with a yellow warning icon and an 'OK' button. The background of the page shows a table of contents for the book, including sections like 'Introduction: A Regional Approach and Multidisciplinary Perspective' and 'Bibliography'. A red arrow points to the right side of the page.

"Usually when searching, I test first by entering a term I see on the book page. It would be fantastic if I could link Google Books to books at U of T."

Humanities eBook *reading*

- Cannot read eBooks continuously, deep reading not supported
Print preferred for reading.
- Online access is not enough, need persistent copy.
Portability- Needs to download eBook content to USB drive, send to email.
Multiple formats: HTML & PDF
- Scanned eBooks are often poor. Need higher resolution (& separate figures).
- (In arts) higher fidelity images are a must – image analysis.

Engineering graduate students

Finding Materials for Research:

Information Foragers

- Search Google for specific keywords
Iterated searches & materials from the search results
- Engineering users land at UTL to access needed titles
- Difficulty in linking to electronic resources.
Users need to link to references as they come across them
- Google reliance limits awareness of UTL collection
- Engineering scholars adept at journal article searching.
Google Scholar primarily, but keeping multiple browser tabs open

Sciences graduate students

(Life) scientists exclusively searched Journals, not Books

Use of Books / eBooks almost entirely for practical needs.

Limited to references & lookups for non-research questions

Disappointing initial experiences with UTL eBooks

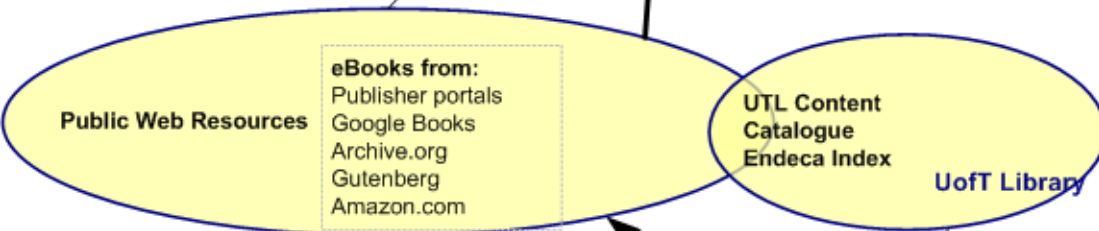
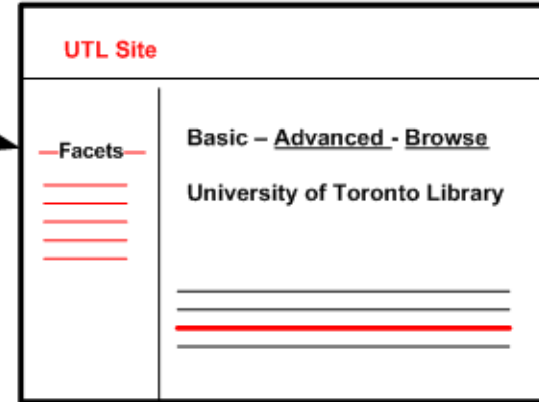
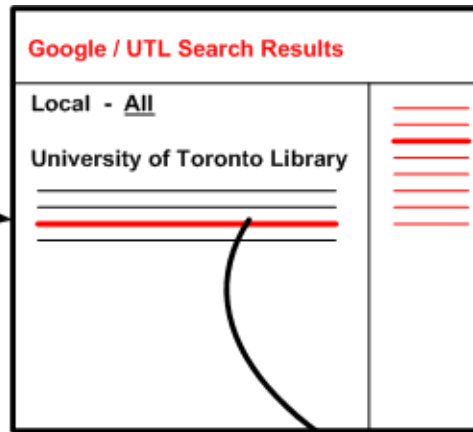
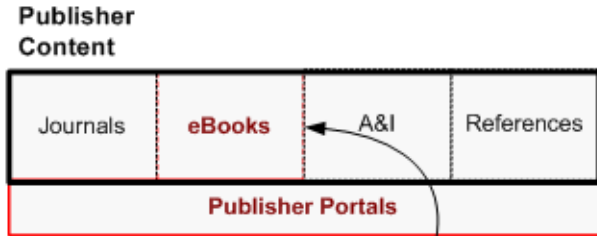
Case example in session (Compared to Google search for “answer”)

Grad student tried UTL for a Photoshop reference book. Found several eBooks, but the book was “tremendously frustrating” to read. MyiLibrary pages were too short in display (no scrolling). Many clicks & time involved just to find any content. They noted the scrolling and zooming required to read online.

eBook PDF-style pages unsuitable for online reading

Need to scroll quickly, skim, & search via browser

If UTL were searchable via Google



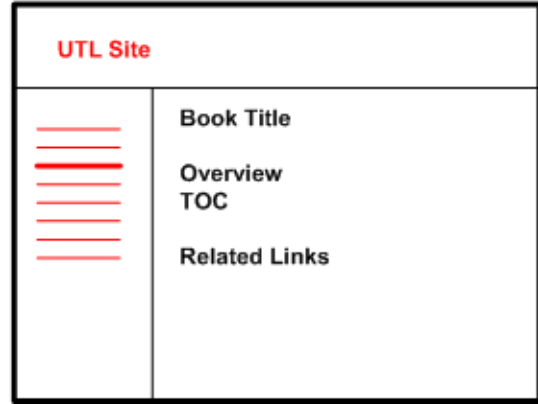
Returns Google

Returns UTL

Starts with



Student



Social sciences graduate students

Research-based social sciences used traditional resources

- FIS scholars show sophisticated use of UTL & Scholars Portal
- Some use of Google Scholar, always for articles
 - “There are times I would use books, & eBooks, but not that often.”

(Somewhat) increasing use of UTL eBooks, as-needed & as-found

“I am using them more, but not because they are easier to find.”

Emphasis on *journals* bypasses eBooks, unless exact title is needed (as ref).

Resort to Google Books for a *known titles*.

But - even expert searchers had difficulty finding a known eBook (Findability).

How scholars are reading

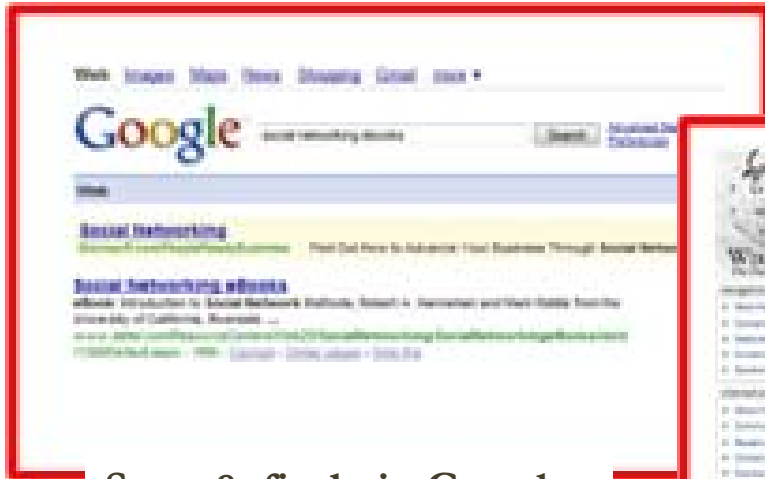
One commonality – Browser personalizes research experience
Multiple tabs open showing full range of start & destination.
Not the best *reading* platform, but powerful for *finding*.

Browser mediates access, navigation, skimming, download, copying.
Humanities – Multiple *libraries* & services
Engineering – Multiple *documents* & articles

The screenshot shows a web browser window with the URL <http://main.library.utoronto.ca/index.shtml>. The browser has several tabs open: [WorldCat.org] S..., ScienceDirect - F..., University o..., ebrary, Google Scholar, and Scopus - Login. The main content area displays the University of Toronto Libraries logo and navigation menu. The search interface includes a search bar, a dropdown menu for search scope (set to 'anywhere'), and a 'go' button. Below the search bar are links for 'Advanced Search', 'Renew Books', and 'Search Old Catalogue Interface'. At the bottom, there are links for 'Article & Research Databases', 'Popular Databases', and 'Article Finder'. A copyright notice 'Copyright © 2009 Redesign Research' is visible at the bottom of the page.

“What should the e-Be?”

Users are showing us their alternatives, now. And Why.



Start & find via Google.

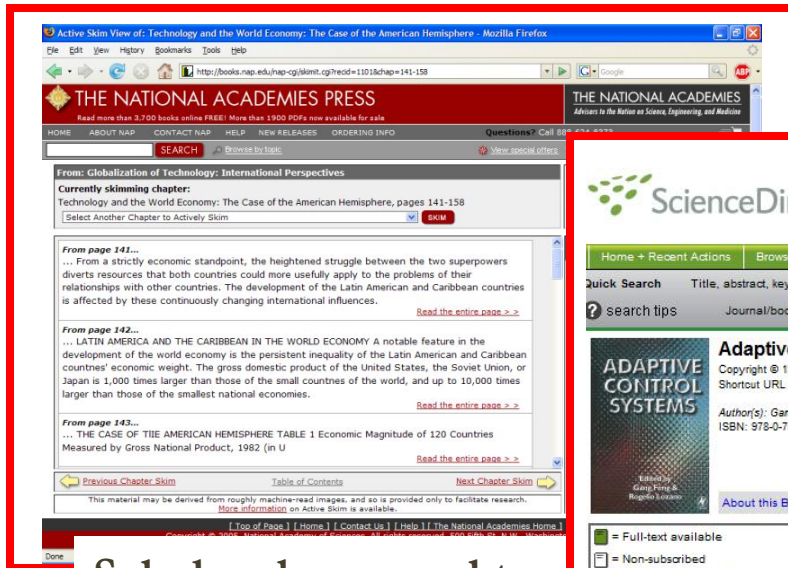


Must beat the Wik baseline.

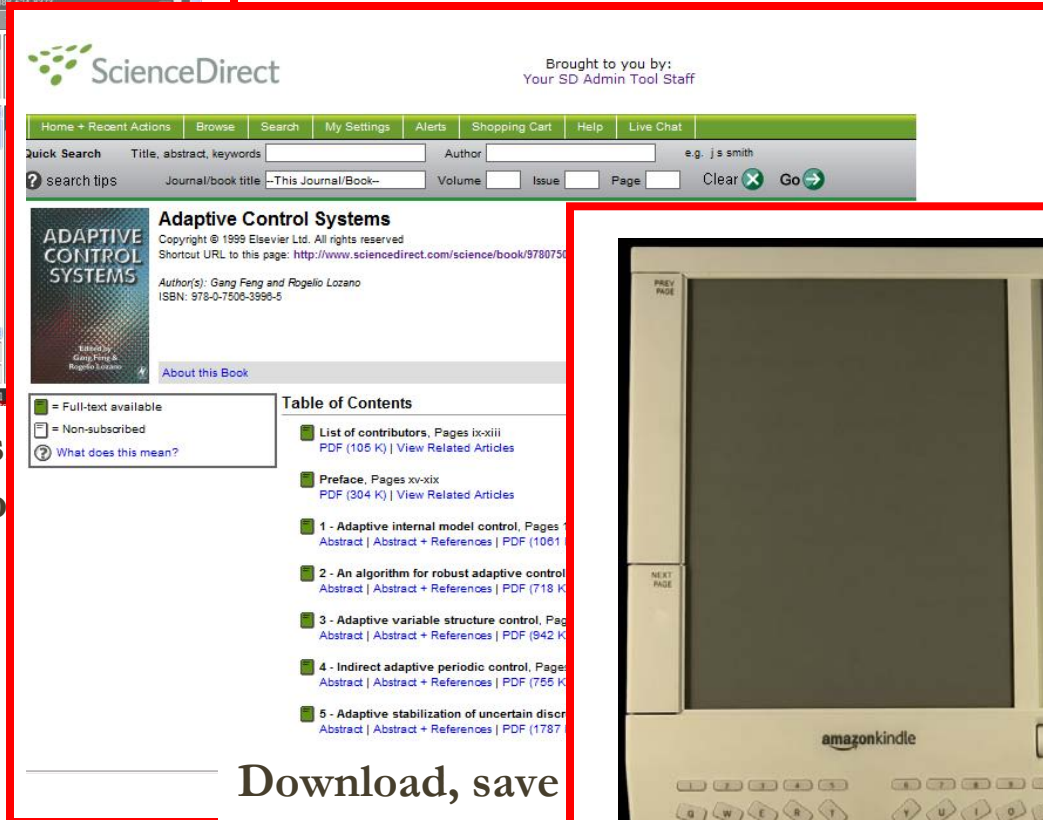


Must search full text & preview the content.

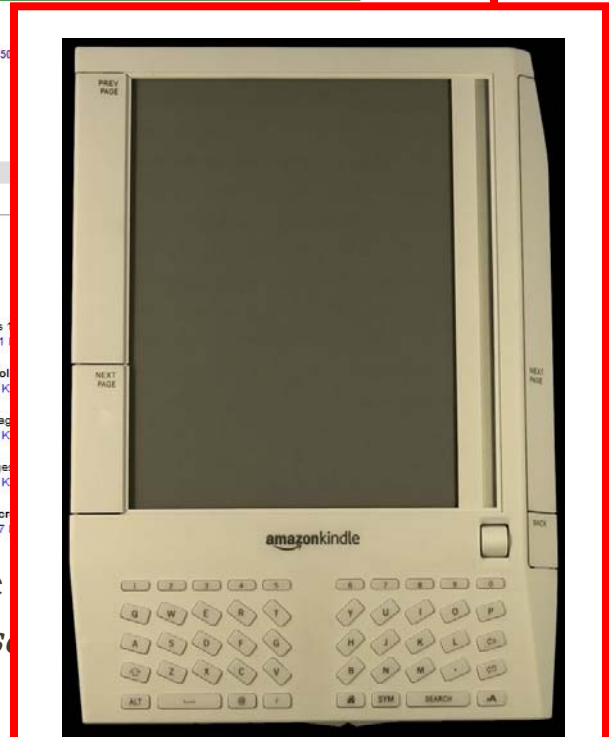
“What should the e-Be?”



Scholars have need to s
& scan large volumes o



Download, save
And then read s



Students are not reading from
handhelds or Kindle. (Yet)

Conclusions

Students & scholars *will* increasingly adopt eBooks into their research.

Convenience & cost savings are huge factors:

- But must be right content, & available when needed for research tasks.
- Students will find alternatives, workarounds, *will* bypass copyright restrictions. Scholars will adopt new Web *tools*, but tend to remain with known valid resources.
- People prefer to *start* with Google - performance & usability. Prefer quick access to “something” over multiple steps to “nothing.” But scholar destination is a valid article or book, perhaps retrieved via “back door.”
- As new UTL platforms come online, users will discover & use more content. eBooks found must be more relevant to their **precise subject & up-to-date**. Some may not continue eBook searching if relevant eBooks not found 2-3 times.

Perspectives

- **No, Google is Not Dumbing Us Down.**
Increases access & overload, but no evidence scholars comprehend less.
- **Envision a surge of print book innovation.**
Perfectly designed reading artifact – it can respond to challenges.
- **eBooks are becoming “something else”**
And they need to – must become more than scanned books.
eBooks (today) afford “information only”
Helpful if they were designed to match users’ behaviors



For report please contact: peter@redesignresearch.com

Redesign Research

redesignresearch.com

designdialogues.com

reDESIGN