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Using library analytics: putting theory into practice: phase three of the Library Impact Data Project

Alison Sharman
Academic Librarian, University of Huddersfield

@asharman / @hudlib
About the University of Huddersfield

• 1825: Founded as Huddersfield Scientific and Mechanic Institute
• 1992: Became the University of Huddersfield
• 2003: Patrick Stewart became Chancellor
• 2013: Times Higher Education University of the Year
• 2014: Stage 2 of the Tour de France!
• 2015: top 5 of best working place survey
Using Usage Data since 2005…

…to improve existing services
…to gain insights into user behaviour
…to measure the impact of the library
To support the hypothesis that...

“There is a statistically significant correlation across a number of universities between library activity data and student attainment”
Library Impact Data Project 1

Original data requirements

- For each student who graduated in a given year, the following data was required:
  - Final grade achieved
  - Number of books borrowed
  - Number of times e-resources were accessed
  - Number of times each student entered the library, e.g. via a turnstile system that requires identity card access
  - School/Faculty
Library Impact Data Project
Phase I

– Showed a statistical significance between:
  - Final grade achieved
  - Number of books borrowed
  - Number of times e-resources accessed
  
Across all 8 partners

Not a cause and effect relationship
Library Impact Data Project

Phase I looked at over 33,000 students across 8 universities

Phase II looked at around 2,000 full time undergraduate students at Huddersfield
Library Impact Data Project 2

Additional data

- Demographics
- Discipline
- Retention
- On/off campus use
- Breadth and depth of e-resource usage
- Entry data
- Correlations for Phase 1
Data analysis

Throughout our analysis, we have followed Cohen (1992) in classifying effect sizes:

.1 – small effect
.3 – medium effect
.5 – large effect (the closer to 1, the bigger the effect)

Ignore plus or minus figures
Look for the shading!
## Library usage

**Country of domicile**

<table>
<thead>
<tr>
<th>Factor</th>
<th>New EU</th>
<th>Old EU</th>
<th>China</th>
<th>Rest of world</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of items borrowed</td>
<td></td>
<td></td>
<td>-.113</td>
<td>-.144</td>
</tr>
<tr>
<td>Number of library visits</td>
<td></td>
<td></td>
<td>-.066</td>
<td>-.098</td>
</tr>
<tr>
<td>Hours logged into library PC</td>
<td></td>
<td></td>
<td>-.082</td>
<td></td>
</tr>
<tr>
<td>Hours logged into e-resources</td>
<td>-.159</td>
<td></td>
<td></td>
<td>-.075</td>
</tr>
<tr>
<td>Number of PDF downloads</td>
<td>-.175</td>
<td></td>
<td></td>
<td>-.088</td>
</tr>
<tr>
<td>Number of e-resources accessed</td>
<td>-.104</td>
<td></td>
<td></td>
<td>-.119</td>
</tr>
<tr>
<td>Number of e-resources accessed 5 or more times</td>
<td>-.152</td>
<td></td>
<td></td>
<td>-.074</td>
</tr>
<tr>
<td>Number of e-resources accessed 25 or more times</td>
<td>-.207</td>
<td></td>
<td></td>
<td>-.092</td>
</tr>
<tr>
<td>Percentage of usage occurring on-campus</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Usage levels**

- **Higher**
- **Lower**

**Control group:** UK
### Library usage

**Aggregated subject groups**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Science</th>
<th>Computing and engineering</th>
<th>Arts</th>
<th>Humanities</th>
<th>Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of items borrowed</td>
<td>-.232</td>
<td>-.337</td>
<td>-.193</td>
<td></td>
<td>-.064</td>
</tr>
<tr>
<td>Number of library visits</td>
<td>-.214</td>
<td></td>
<td>-.113</td>
<td>-.295</td>
<td></td>
</tr>
<tr>
<td>Hours logged into library PC</td>
<td>-.106</td>
<td></td>
<td>-.064</td>
<td>-.147</td>
<td></td>
</tr>
<tr>
<td>Hours logged into e-resources</td>
<td></td>
<td>-.435</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of PDF downloads</td>
<td>-.283</td>
<td>-.559</td>
<td>-.138</td>
<td>-.057</td>
<td></td>
</tr>
<tr>
<td>Number of e-resources accessed</td>
<td>-.281</td>
<td>-.485</td>
<td>-.114</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of e-resources accessed 5 or more times</td>
<td>-.272</td>
<td>-.432</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of e-resources accessed 25 or more times</td>
<td>-.157</td>
<td>-.183</td>
<td>-.087</td>
<td>-.147</td>
<td></td>
</tr>
<tr>
<td>Percentage of usage occurring on-campus</td>
<td></td>
<td></td>
<td>-.095</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Usage levels**

- Higher
- Lower

**Control group:** Social science

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Inspiring tomorrow’s professionals
Library usage

Retention

• Looking at one year of data for every student
• Using a cumulative measure of usage for the first two terms of the 2010-11 academic year
• Only looking at people who dropped out in term three
• All the students included in this study were at the university in the first two terms, and they have all had exactly the same opportunity to accumulate usage.
## Library usage

### Retention

<table>
<thead>
<tr>
<th>Factor</th>
<th>All FT, PT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of items borrowed</td>
<td>-.056</td>
</tr>
<tr>
<td>Number of library visits</td>
<td>-.032</td>
</tr>
<tr>
<td>Hours logged into library PC</td>
<td>-.027</td>
</tr>
<tr>
<td>Hours logged into e-resources</td>
<td>-.060</td>
</tr>
<tr>
<td>Number of PDF downloads</td>
<td>-.051</td>
</tr>
</tbody>
</table>
### Number of e-resources accessed

*Depth and breadth*

<table>
<thead>
<tr>
<th>Factor</th>
<th>First /2.i</th>
<th>First /2.ii</th>
<th>First /Third</th>
<th>2.i /2.ii</th>
<th>2.i /Third</th>
<th>2.ii /Third</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of e-resources accessed</td>
<td>-.102</td>
<td>-.243</td>
<td>-.350</td>
<td>-.182</td>
<td>-.184</td>
<td></td>
</tr>
<tr>
<td>Number of e-resources accessed 5 or more times</td>
<td>-.115</td>
<td>-.248</td>
<td>-.363</td>
<td>-.165</td>
<td>-.176</td>
<td></td>
</tr>
<tr>
<td>Number of e-resources accessed 25 or more times</td>
<td>-.147</td>
<td>-.273</td>
<td>-.248</td>
<td>-.121</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage of total usage overnight</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.07</td>
<td></td>
</tr>
</tbody>
</table>

**Grade**

- **First**
- 2.i
- 2.ii
- **Third**

*Inspiring tomorrow’s professionals*
Other factors

**Number of e-resources accessed**

- Both borrowing books and logging onto electronic resources does *not* guarantee the item has been read, understood and referenced.
- Heavy usage does *not* equate to high information seeking or academic skills.
- Non-use of library resources does *not* necessarily mean students are using poor quality information.
LIDP 3

• Make use of data and insights generated from Phase 1&2 to increase library usage amongst those identified as low users

• No one size fits all

• Concentrated on 2 Schools (Art Design and Architecture; Computing and Engineering) and also Chinese/International students
Questionnaire to gather quantitative data

Ethnographic research to gather qualitative data

https://www.flickr.com/photos/kevinl8888/3568123204/
Survey: 372 responses (253 Chinese)

Aimed at ALL students on studying on the International Development Curriculum

<table>
<thead>
<tr>
<th>Level of study</th>
<th>Responses</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>231</td>
<td>62.9%</td>
</tr>
<tr>
<td>Postgraduate Masters</td>
<td>136</td>
<td>37.1%</td>
</tr>
</tbody>
</table>

367
Which of the assignment statements below best describe your actions when working on your assignment?

- I read ONLY the books on my reading lists: 57
- I read the books on my reading lists but I also find other books myself: 295
- I don't read the books on my reading list at all: 9
Do you use eBooks (Electronic books)?

- Yes: 328
- No: 38
Why do you use eBooks (Electronic books)?

- I can access them from home/away from the University: 250
- I find them easy to read: 150
- I can search using keywords within the book: 175
- They are always available: 125
I don't like eBooks because

- They are difficult to read on a computer screen
- They are difficult to print
- I can't make notes on them
- I can only download/save them to my desktop for a limited number of days
- Some of them can't be downloaded to my desktop
Do you use journal articles?

<table>
<thead>
<tr>
<th>Responses</th>
<th>Undergraduate</th>
<th>Postgraduate Masters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>208 (91.2%)</td>
<td>130 (97.7%)</td>
</tr>
<tr>
<td>No</td>
<td>20 (8.8%)</td>
<td>3 (2.3%)</td>
</tr>
</tbody>
</table>

Total responses: 342

228 Yes
133 No
How do you access journal articles?

- Summon
- Google
- Google Scholar
- Baidu
- Youdao
- Subject Database (e.g. Business Source Complete, Emerald, ScienceDirect etc.)
They are shorter in length than books.

They are more up-to-date than books.

My lecturer told me to use them.

They are on my reading list.

To back up my argument.
Where do you go for library help?
Retrospective process interviews

Cognitive mapping
Instructions: You will be given 6 minutes to draw from memory a map of where you go to learn or study (your learning spaces). Every two minutes you will be asked to change the colour of your pen in the following order: 1. Blue. 2. Green. 3. Red.

After the six minutes are completed, please label the features on your map. Please try and be as complete as possible, and don’t worry about the quality of the drawing.
Themes established so far...

- No idea of the research help offered by librarians
- Struggle to use Dewey
- Preference for individual working rather than group work
- Working through the night popular for some students
- Positive intervention of the International Learning Development Group
- Critical thinking/reflection new experience
Working with the School of Computing and Engineering
Devised a strategy

Staff are the main gateway to students

Prioritised engagement with staff over students

https://www.flickr.com/photos/sonnyandsandy/795218818/
We don’t see the point (in using x) because we’re not told to use them

We’ve not been told about certain things so we just stick with what we know

https://library3.hud.ac.uk/blogs/lidp/2012/12/20/lidp-focus-group-write-up/
Comments from a final year Business Management student

You base your work around what that tutor wants. If they want 2 pages of references then you do 3!
Subject: Can we help save you time?

Dear [name],

Are you spending too much time on fruitless searches? Want to learn how to keep up with your subject area and find information for your research/teaching [amend as appropriate] – without having to find extra time to do it?

Book a Library Desktop Visit today!

Endnote…Summon…IEEE Xplore…Copyright… MyReading…Social media…Tell us what you want to know!

Just tick what you want to know more about on the attached form and send it back to [our own email addresses?], and one of our expert Librarians will [or should this just say “I will”?] come and visit you at your desk to show you some time-saving tips and tricks. It’ll take no more than an hour, and we can go into as little or as much detail as you need.

Book a Library Desktop Visit: email [address] and let us know what you want to learn, using the attached form.
Your library and Academic Skills

Want to get ahead?
Attend these 30 minute workshops and improve your academic writing, researching and referencing skills.

Monday 24th February (in CW2/01) and Tuesday 25th February (in CW2/04)

Searching Smarter, Searching Faster: Finding information (13.00 - 13.30)

Make Your Examiner Happy: Structure and Stylistic Tips for Final Year (13.30 - 14.00)

The Dissertation Toolkit: Locating and Getting the most out of Academic Journal Articles (14.30 - 15.00)

Keep Calm and Carry on Referencing with APA: How to reference using the American Psychological Association (APA) Version 6 (15.00 - 15.30)

No need to book, just turn up. All sessions in Canalside West.
Future plans
Ask Alumni students

...to actually sit with someone to go through the things I wanted to find on Summon ...People say they haven't got time to sit with the staff well I was going to spend DOUBLE or even TRIPLE the time trying to search for things on my own so I figured it would SAVE me time if I sat with the experts who know how to get the best from the searches and the advanced searches etc. It truly paid off because I was unable to find relatable journals but having a thinking partner who also suggested 'have you thought of this topic or searched for this keyword etc' that really helped me get my First.
Talk to students

Conduct ethnographic interviews with Computing/Engineering students

https://www.flickr.com/photos/craiga/17071467/
School action plans

• Personalised stats/highlights for the School
  – Visits to the library
  – Book purchases
  – Info lit sessions
  – ILL requests
  – Books borrowed
  – Use of online reading lists

• School action plans
The original project


LIDP

- Collins, Ellen and Stone, Graham (2014) Understanding patterns of library use among undergraduate students from different disciplines. *Evidence Based Library and Information Practice*, 9 (3)
Read more:

Library Analytics bibliography
https://library3.hud.ac.uk/blogs/lidp/project-outputs/library-analytics-bibliography/

Ethnography
http://uxlib.org/links/