Crafting Library Narratives; Data Mining and Assessment for Stakeholders

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Librarian knowledge and skills of tools for visualizing, mining and managing large and complex research data: A systematic review
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El Paso Community College Northwest Campus
The Medical Library Association (MLA) Research Agenda

- Top 15 questions identified by MLA Research Section
- Teams of ~10 librarians tasked with conducting a systematic review on each of the 15 questions
- Timeline = 3 years and counting
Objectives

1. Conduct a systematic review to address one of the questions identified in the MLA Research Agenda: Appraising the Best Available Evidence.

2. Develop systematic review expertise in health sciences librarians
Our Systematic Review Team

*Catherine Boden
Brooke Billman
Lorely Ambriz
Keith Engwall
Anne Woznica
Andrew Booth
Andrea Miller-Nesbitt
Martin Morris
Rienne Johnson
Abby Adamczyk
Betsy Clark

#OCLCARC18
Our Team Research Question

What skills and knowledge must librarians possess in order to be able to design tools to help researchers visualize, mine, and otherwise manage large and complex data gathered during both quantitative and qualitative research?
Methods

Literature search strategies were developed by the research team for three main concepts:

1. competencies
2. librarians
3. research data
Methods
Databases Included

- PubMed 1946-
- EMBASE, Ovid 1947-
- Library, Information Science & Technology Abstracts (LISTA), EBSCO 1960-
- Library Literature & Information Science Full Text, H.W. Wilson, 1969-
- Library and Information Science Abstracts (LISA) via ProQuest
- Association for Computing Machinery (ACM) Digital Library
- Education Resources Information Center (ERIC), EBSCO
- Web of Science

- ProQuest databases
  - Applied Social Sciences Index and Abstracts (ASSIA) 1987-
  - Australian Education Index 1977-
  - British Education Index 1975-
  - International Bibliography of the Social Sciences (IBSS), 1951-
  - Periodicals Archive Online
  - ProQuest Dissertations & Theses: UK & Ireland
  - ProQuest Dissertations & Theses A&I
  - ProQuest Education Journals 1988-
  - Social Services Abstracts 1979-
  - Sociological Abstracts 1952-
  - Technology Research Database- 1962
Methods

Approved Search Strategy

(ab(train* OR skill* OR knowledge OR curriculum OR competenc* OR abilit* OR recruit* OR talent* OR education OR programming OR "career development" OR "professional development") OR ti(train* OR skill* OR knowledge OR curriculum OR competenc* OR abilit* OR recruit* OR talent* OR education OR programming OR "career development" OR "professional development"))
AND
("Data" OR "Information") adj1 ("Specialist*" OR "Scientist*" OR "Professional*" OR "Manager*" OR "Broker*"
(ab("Data Specialist*" OR "Information Specialist*" OR OR Librarian* OR "Information Science" OR "Information Scientist" OR "information scientists" OR "Information Professional" OR "information professionals" OR "Information broker" OR "Information brokers" OR "Knowledge Manager" OR "Knowledge Managers" OR "Informatics" OR Informationist OR MLIS OR LIS OR MSIS OR MCLIP OR iSchool OR (MA AND information) OR (MA AND library) OR (MS AND information) OR (MS AND library) OR (MSc AND information) OR (MSc AND library)) OR
(masters AND information) OR (masters AND library)) OR ti(Librarian* OR "Information Science" OR "Information Scientist" OR "information scientists" OR "Information Professional" OR "information professionals" OR "Information broker" OR "Information brokers" OR "Knowledge Manager" OR "Knowledge Managers" OR "Informatics" OR Informationist OR MLIS OR LIS OR MSIS OR MCLIP OR iSchool OR (MA AND information) OR (MA AND library) OR (MS AND information) OR (MS AND library) OR (MSc AND information) OR (MSc AND library) OR (masters AND information) OR (masters AND library)))
AND
(ab("data" OR repositor*) OR ti("data" OR repositor*))
Methods
Eligibility Criteria

1. Competencies, Skills and/or Knowledge
2. Research Data
3. Tools
Methods
Data Extraction and Synthesis


2. We selected the Digital Curation Centre (DCC) Curation Lifecycle model, as a broadly applicable framework for extracting data relevant to the data curation process which underpins effective management of research data.
Results

Full-Text Articles

1. A total of 28,848 results were identified through database searching.
2. Duplicates were removed resulting in 25,291 unique database records.
3. Application of custom EndNote search filter resulted in 5,921 unique citations.
4. 5,686 citations were excluded through a review of the titles and abstracts.
5. The reference lists of the 235 articles were reviewed and full text of 38 potentially applicable articles was screened. Of the 273 articles, full text review resulted in the inclusion of 29 records.
1. A search of WorldCat for book titles resulted in 647 records.
2. After duplicates were removed 634 titles were single-reviewed resulting in the inclusion of 31.
3. The table of contents were screened, excluding 16 titles, and 22 chapters were identified to review. Full text review of the chapters resulted in inclusion of 1 chapter.
1. In summary, **34 records were included** with the following publication types:
   - journal articles (22)
   - conference papers (5)
   - editorials (4)
   - dissertations/theses (2)
   - book chapters (1)
   - Of the journal articles, contribution types included program descriptions (12), original research (6), and reviews of the literature (4).
Conclusions

✓ Various papers asserted that librarians already had many of the competencies needed to support research data management services.

✓ Knowledge of curation-related activities and operations could be adapted to address the unique requirements of scientific data.

✓ Librarians’ skill in building relationships with researchers, including understanding their subject area and practices, facilitates the data curation process.

✓ Librarians can share their expertise in datasets to provide support to the repository builders and those collecting the data. Cataloging, metadata, security, access, and discoverability could all be applied to datasets.

✓ However, several commentators contended that the existing workforce does not possess the technical skills needed to curate data and develop tools.
Conclusions
Competencies Needed

Competencies found in our review are ones librarians likely already possess and are directly transferable to the design of tools to manage complex research data:

1. Understanding Context for System and Tool Requirements LIS Principles for Representation and Metadata
2. Knowledge of the Researchers’ Discipline
3. Collaboration and Interdisciplinary Work
4. Knowledge of Information Systems & Technologies
Conclusions
Recommendations Inherited from Our Research

• Considerable variation across geographical regions, institutions, and specific jobs in librarian roles and the associated competency requirements for designing tools for managing research data and skills for RDM.

• LIS schools need to also play a role by adjusting their curriculums to prepare new graduates (theoretical grounding)

• Who is going to help us get to the point where our profession has the right skill set? professional organizations / library leadership.
Conclusions
Recommendations Inherited from Our Research

1. Narrowly defined research questions that can be answered with one kind of data (e.g., quantitative) lend themselves better to “learning by doing”

2. At least one person on the team should be an experienced systematic reviewer in the type of question being asked (qualitative, quantitative, mixed).

3. All research team members should have knowledge of the SR topic.

4. It has been a great learning experience that should be repeated.
“What we learned…”

“…Networking and new professional contacts/relationships forged”

“I found the experience of conducting a systematic review to be the most effective way to work out the inherent subtleties and complexities…”

“Participating in this project has helped me better understand the processes that the researchers I help go through”

“I feel I’m in a position to help researchers manage the process…”

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Tools for Team Collaboration

• Started with Basecamp for doc sharing etc……but naturally moved to Google Docs and DropBox.
• Simple Google Sheets to formulate, calculate, consensus and highlight disagreements.
• Trello and Google Forms for screening.
• EndNote as a database and for deduplication.
• Publish or Perish to identify the citing articles of the included records.
• Blackboard Collaborate and WebEx to meet weekly for team work and collaboration.
• Doodle for scheduling.
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Creation of international systematic review collaborations on topics in library and information science has been challenging but a great learning experience and a great tool for evidence based decision making in any library type setting.
Crafting a Narrative for Action: Assessment, Scholarly Communication, and Collection Management
THANK YOU

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Crafting a Narrative for Action

DEVIN SAVAGE, ILLINOIS TECH
The Issue(s)

• We have a complex problem which needs action
• We need to communicate that problem in order to work towards solutions
• We need to be able to tell various stakeholders the same story in a way that is accurate, convincing, and memorable.
What are the elements needed to create the narrative that you need?
My Story Challenge

- Convincing
- Accurate
- Memorable
Who? Identify stakeholders

- Hierarchical Channels: Go up the chain
- Collaborate: Find Partners
- Grassroots: Build demand
Stakeholders = Audience! Now what?

Identify the ways in which stakeholders might relate to the topic, and possible areas they may prove to be unsympathetic.
Once you’ve identified your audience, you need to ask yourself

What kind of story do you want to tell?
The Enigma code
Doing more than anticipating the questions

• Every good pitch anticipates the questions, tests the argument(s) and the receptions of possible outcomes

(Assessment!)
• Anticipating possible questions is good, but a story that will be convincing will create the very questions that you wish to address.

(Scholarly Communication!)
After the telling: dealing with adversity

• Listening: acknowledging and recognizing stakes (and passion)
• It’s not about you (getting beyond the bombs being thrown)
• Moving beyond the rejection of the premise
• Co-opt the “invent and solve” impulse for increased and ongoing engagement
Next steps: “A narrative for ACTION”

• Offer scenarios for the future when appropriate
• Demonstrate that you are a place for action, and that they will hear more from you
• Implant the idea that when future questions or opportunities arise, you are the place to ask
THANK YOU

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OTHER IMAGES USED
Paurian "The Detective"
https://www.flickr.com/photos/paurian/3550755709/

whatleydude "Hurrah! at Last!"
https://www.flickr.com/photos/paurian/3550755709/