Turn Your Idea into a Publication

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Research Methodology -- Session 1. Part 2

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Agenda for Today’s Webinar

- Definition of methodology
- Types of research
- Types of methodology
Objectives

- Identify the appropriate research methodology
- Apply the methods that pertain to your research
General Research Process

- Identifying a Research Problem
- Reviewing the Literature
- Specifying a Purpose
- Methodology for Collecting Data
- Analyzing and Interpreting Data
- Reporting and Sharing Results
"Methodology and methods, two terms are often treated as synonyms. Methodology is broader and envelops methods"

Methods are a set of specific techniques for selecting topics, gathering and refining data, analyzing data and reporting on results.
## Types of Research

<table>
<thead>
<tr>
<th>Quantitative</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asks specific, narrow questions</td>
<td>Asks broad, general questions</td>
</tr>
<tr>
<td>Collects data from participant's</td>
<td>Collects data consisting largely of words (text)</td>
</tr>
<tr>
<td>Analyzes numbers using statistics</td>
<td>Describes and analyzes of words for themes</td>
</tr>
<tr>
<td>Conducts the inquiry in unbiased, objective manner</td>
<td>Conducts inquiry in subjective, biased manner</td>
</tr>
</tbody>
</table>
Research in Libraries

Descriptive research
Examples:
- Case studies
- Survey-based research

Analytical research
Examples:
- Reviews
- Bibliographic essays

Conceptual research
Example:
- Think piece
1. Descriptive research - Case studies

---A form of qualitative descriptive research, the case study looks intensely at an individual or small participant pool, drawing conclusions only about that participant or group and only in that specific context. .....emphasis is placed on exploration and description.”

Source: http://writing.colostate.edu/guides/page.cfm?pageid=1285
Methodology of Case Studies

- Determine and define the research questions
- Select the cases and determine data gathering and analysis techniques
- Prepare to collect the data
- Collect data in the field
- Evaluate and analyze the data
- Report your findings
Tips for Designing Case Studies

- Plan and design how you are going to address the study.
- Make sure that all collected data is relevant.
- Make sure that the study is focused and concise.
- Create a short list of 4 or 5 bullet points that you are going to address during the study.
- Researcher conducting the case study is more of an observer than an experimenter.
- When you conduct a multi-subject case, each case must be treated individually and then cross-case conclusions can be drawn.
Example of Case Studies

1. **Descriptive research - Survey-based research**

- **What is a survey and how it relates to a questionnaire**

- Survey research is a commonly used method of collecting information about a population of interest.

- There are three key features of survey research:
  - Questionnaires
  - Sampling
  - Interviews
Questionnaire

Types of Questionnaire

- Closed - Ended Questions
- Open - Ended Questions
- Likert - type scale
Closed-Ended Questions

- Calls for a "yes" or "no" answer, short response, or item checking.

- Closed questions have the following characteristics:
  - They give you **facts**.
  - They are **easy** to answer.
  - They are **quick** to answer.
  - They keep control of the conversation with the **respondents**.

- They are preferred in survey research because of the ease of counting the frequency of each response and they are simple to interpret, tabulate, and summarize, but they limit the responses that participants can give.
Examples of Closed--Ended Questions

Table 9. If you are Making Plans to Catalog your Un-Cataloged Collection, Which Methods are you Likely to Use to Catalog and Add these Collections to WorldCat?

<table>
<thead>
<tr>
<th>Method</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collection -level record</td>
<td>26</td>
<td>28</td>
</tr>
<tr>
<td>Short/brief record (e.g. “K” level record)</td>
<td>19</td>
<td>35</td>
</tr>
<tr>
<td>Full bibliographic records</td>
<td>41</td>
<td>13</td>
</tr>
<tr>
<td>Other specify</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Open--Ended Questions

- Allow for greater depth of response

Open questions have the following characteristics:

- They ask the respondent to **think** and reflect.
- They will give you **opinions** and **feelings**.
- They hand control of the conversation to the **respondent**.
Examples of Opened--Ended Questions

12. List your favorite ideas or suggestion to improve non-Roman subject access in library online catalog.
Likert-type scale rating

- Respondents specify their level of satisfaction or dissatisfaction on a symmetric agree-disagree scale for a series of statements

- A useful question type when you want to get an overall measurement of a particular topic, opinion, or experience
Example of a Likert-Type Scale Rating

<table>
<thead>
<tr>
<th>Very Dissatisfied (1)</th>
<th>Dissatisfied (2)</th>
<th>Neither Satisfied nor Dissatisfied (3)</th>
<th>Satisfied (4)</th>
<th>Very Satisfied (5)</th>
</tr>
</thead>
</table>

6. Do you find that the presence of controlled English subject headings in bibliographic records helps you find and identify the non-Roman items you need? Least helpful 1 2 3 4 5 Most helpful
FIGURE 2  Satisfaction with Controlled English Subjects (Level 5 = Most Satisfied; Level 1 = Least Satisfied).
Question 5 asked about general satisfaction with searching catalogs using controlled English-language subject headings. As Figure 2 illustrates, about one-third of both end users and librarians were moderately satisfied with this search method. At the two extremes of satisfaction, the two groups diverged. The higher satisfaction ratings were given by 46% of librarians but only by 20% of end users (combinations of Level 4 and 5). Similarly, 19% of librarians were very dissatisfied, as opposed to 40% of end users (combinations of Level 1 and 2). Overall, the librarians seemed more satisfied with their searching experience using English headings than did the end users.
Some Factors Affecting the Percentage of Returned Questionnaires:

- Length of the questionnaire
- Complexity of the questions
- Importance of the study as determined by the potential respondents
- Respondent’s belief that his/her responses are important
- Difficult to observe verbal and non-verbal behavior of the respondents.
- Quality and design of the questionnaire
- Timing
Tips for a Good Questionnaire

- As short as possible
- Neatly organized
- Questions are clear
- Avoid using emotionally loaded or biased words and phrases
- Use clear and comprehensible terms, easily understandable by all educational levels
- Use correct spelling, grammar and punctuation
- Double-barreled questions, which ask two questions in one, should never be used in a survey.
- Clear instructions on how to complete the questionnaire
- Send your questionnaire out to a few friends for testing. This helps to locate unclear and vague terms
- Design it in an easy way for you to tabulate and interpret
- Send along your questionnaire a courteous, carefully constructed cover letter to explain the purpose of the study.
Sampling

- **Probability**
  - Random sampling
  - Systematic sampling
  - Stratified sampling

- **Non-probability**
  - Convenience Sampling
  - Judgment sampling
  - Quota Sampling
  - Snowball sampling

[https://www.statpac.com/surveys/sampling.htm](https://www.statpac.com/surveys/sampling.htm)
Random Sample

- Survey Random Sample Calculator

“Tool to help you determine how many people you need to survey or interview from a large population.”
#1 - How many survey respondents do you need?

Specify your desired error level and population size below and click calculate. The numbers next to each confidence level indicate how many people need to complete your survey to achieve the specified error level.

How much error are you willing to tolerate? 4.0 %
How many people are in your population? 5000 e.g. total number of employees in the company

90% Confidence  
95% Confidence  
99% Confidence  

Calculate

#2 - How many people do you need to send the survey to?

How many people need to complete the survey?  
From Calculator #1 above
What is your estimated response rate? 70 % (employee surveys usually get at least 70%)
What % of people do you expect to complete the survey?  
Send the survey to  people

Calculate

#3 - How accurate are your survey results?

How many people are in your population? e.g. total number of employees in the company
How many people completed your survey? e.g. number of employees who completed the survey

Error Level

90% Confidence  
95% Confidence  
99% Confidence  

Calculate
Example of a Random Sample

The sample size for the first two groups was determined using a random sample calculator for each of the groups [27]. The Ohio State University had 59,091 students and graduate students on campus. The random sample calculator suggested that 1,019 respondents were needed in order to obtain a 99 percent confidence. To gather the 1,019 respondents, the survey was sent to 2,038 undergraduate and graduate students. For the faculty and staff, the total on campus was 25,902, so 996 respondents were needed to gain a 99 percent confidence rating. To obtain the 996 respondents, the survey was sent to 1,192 faculty and staff. The authors over sampled for Group 1 and Group 2 in an attempt to ensure the confidence level. For the third group, the survey was sent to all library staff and faculty (342 members) via the library online listserv to determine if controlling or not controlling the series would affect their work and the way they serve patrons.
Interviews

“An interview is a direct face-to-face attempt to obtain reliable and valid measures in the form of verbal responses from one or more respondents.”
How to Structure an Interview

- Think about and carefully define the information you need.
- Ask directly for the information you're seeking.
- Make questions clear and unambiguous.
- Ask open-ended questions.
- Ask follow-up questions to get at what people are really saying, or to keep them talking about a topic.
- Don't cut people off too quickly.
- Confirm what you're told by checking with others to the extent that you can. Remember that you're getting people's perceptions, which aren't always the same as objective reality.
Some Factors about an Interview

- Allows the interviewer to clarify questions.
- Allows the interviewers to observe verbal and non-verbal behavior of the respondents.
- Unstructured interview can yield data too difficult to quantify.
Sample Interview questions from “Cataloging Alternatives: An Investigation of Contract Cataloging, Cooperative Cataloging, and the Use of Temporary Help”

Figure 1: List of Questions for Vendor Interview

Date:

Name of Vendor:

Contact person:

Telephone:

1. What kinds of services do you offer, i.e. original vs. copy-cataloging, languages, formats?

2. What level of cataloging do you provide?

3. We will have specific needs or standards in terms of our level of cataloging. How will you meet these needs?

4. Do you require the actual physical items to be sent to you, or may we send a surrogate, i.e. photocopy of the title page, etc.?

5. If you require the physical items to be sent, what carrier should be used for shipment? Who is responsible for insuring the items? Who takes responsibility for loss or damage?

6. What types of materials do you prefer not to handle, e.g., bound with, serials, etc.? Would you subcontract for such materials or would you handle them in-house?

7. We would like to gather as much information as possible. Is there someone else we should also speak with or contact?

8. We are considering contracting services to catalog two collections: modern Greek and modern Korean. Are there any differences in how you would handle these collections, i.e., Greek vs. Korean?

9. Do you have in-house catalogers who can handle these languages or would you need to subcontract for these languages?

10. For which access points do you do authority control, e.g., author, subject, series?

11. Have you provided cataloging services for any libraries/agencies in Ohio. If so, may we contact them?
<table>
<thead>
<tr>
<th>Type of materials</th>
<th>Cataloging standards</th>
<th>Languages</th>
<th>Security; transportation; postage</th>
<th>Actual item vs. surrogate</th>
<th>Bibliographic Access</th>
<th>A philo Records</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Books; Serials; AV; Manuscripts; Sound recordings; Scores; Computer files</td>
<td>AACR2; LC practice; Authority control; Names converted to AACR2; Full I-level unless the library wants K-level; Sport checking</td>
<td>Variety of Roman and non-Roman languages</td>
<td>Contract library pay shipping charge of the books to and from OCLC</td>
<td>T.P.; Actual item</td>
<td>OCLC/CJK</td>
<td>OCLC MARC tape integrated with any records cat. on OCLC by the contracting library</td>
</tr>
<tr>
<td>B Books; Serials; AV; Manuscripts; Sound recordings; Scores; Computer files Maps; Theses; Dissertations</td>
<td>National standards; I-level Authority control subcontracted to Blackwell North America</td>
<td>Western languages; Hebrew</td>
<td>Send backlog certified, library pay the expenses</td>
<td>T.P.; Order record; Others</td>
<td>OCLC</td>
<td>OCLC worksheets; Cards</td>
</tr>
<tr>
<td>C Books; Non-books</td>
<td>AACR2; LCSH; Dewey Class; LCC</td>
<td>Chinese; Japanese; Korean; Russian; Hebrew; Vietnamese</td>
<td>Use UPS and contract library pay the cost</td>
<td>T.P.; Colophon, actual piece; AV tapes</td>
<td>OCLC; Planning to use OCLC/CJK and RUN2/CJK</td>
<td>Marc worksheets; MARC tape; Catalog cards</td>
</tr>
<tr>
<td>D Books; Non-books; Don't like to deal with serials and AV</td>
<td>I-level; MARC formats; LC practice; AACR2; SuDoc; ANSCHR; LC classification; LCSH; LC names and subject authority</td>
<td>English; Spanish; Chinese; Arabic; Hebrew; Greek</td>
<td>Send backlog certified by UPS with an inventory list</td>
<td>Prefer actual item</td>
<td>OCLC</td>
<td></td>
</tr>
<tr>
<td>E Books; Serials; Audio cassette; Video cassette</td>
<td>I-level; MARC formats; LC practice; AACR2; LC classification; Dewey; ANSCHR. class for sound recordings</td>
<td>Korean</td>
<td>Send backlog lib pay the shipping</td>
<td>T.p.; verso Lp; colophon; table of contents; last page no.; ill. Sometimes they need the actual</td>
<td>OCLC/CJK</td>
<td>Marc worksheets; MARC tape; Catalog cards</td>
</tr>
</tbody>
</table>
Focus Groups

- Focus groups are group interviews that give the researcher the ability to capture deeper information more economically than individual interviews.

- Allow for the study of interaction between participants.

- May uncover WHY people think as they do.
Purpose of Conducting Focus Groups

- Finding out about an issue of importance from the target population
- Asking members of the target population what types of activities they would enjoy
- Collecting in-depth data on specific research questions to determine program success or progress
2. Analytical Research – Bibliographic Essay

- “a bibliographic essay introduces readers to a topic, and evaluates resources related to that topic. A good bibliographic essay is not a discussion of a topic as much as it is an introduction to the best resources available that discuss a topic.”
Bibliographic Essay - Methodology

- Identify the topic
- Identify current trends in that area and create sub-topics
- Identify types of materials to be described and discussed (books, articles, databases, etc.)
- Determine the time span (5 years)
- Searching for your materials
- Organize your topics
- Write your essay
Bibliographic Essay - Organizing

- Importance of introduction
- Organize materials by sub-topics (descriptive categories)
- Analyzing your materials by sub-topics
- Describe important points made in each article
- Write your essay for each sub-topic
- Put it all together
- Conclusion
Examples of Bibliographic Essays


2. Analytical Research – Literature Reviews

- A literature review provides an overview of the scholarly writings published on a topic by accredited scholars and researchers.
Purpose of Lit Reviews

- Describe the relationship of each work to the others under consideration
- Identify new ways to interpret prior research
- Shed light on any gaps in, previous research
- Identify areas of prior scholarship to prevent duplication of effort
- Point the way forward for further research
Steps for Preparing Lit Reviews

- Define your topic
- Search for materials
- Evaluate what you have found
  - What are the author's credentials?
  - Persuasiveness
  - Value

- Analysis and interpretation
Lit Review and Bibliographic Essay--Comparison

Lit Review
- Makes a case for further investigation and research
- Highlighting gaps in knowledge and asking questions that need to be answered for the betterment of the discipline
- Criticism is generally directed at the value of the work in answering a particular question rather than at its quality

Bibliographic Essay
- Illustrates what's available in a given field, accompanied by a short description.
- While it may feature a critical component, the criticism is generally directed at the quality of the work, rather than at its value in answering a particular question or buttressing an argument.
Example of Literature Review

3. Think Piece Research

It is a piece of writing introducing new ideas or offering a challenge to existing assumptions.
Steps for Writing a Think Piece

- Find a “what if” question
- Do your research
- Find the majority opinion, then adopt the exact opposite opinion
- Develop a unique writing style
- Come up with a crazy headline
- Be the first
Examples of Think Piece


Conclusion

- Proper methods will make your research fun and rewarding
- Don’t let the methodology determine your research topic
- Methods are tools – use them and don’t let them use you
- Learn the basic information about your issue
- Be persistent - there's no substitute for keeping at it
- Methodology is a vehicle for conducting research
- Use it properly so your research engine doesn’t sputter
References

- Questionnaire and Interview as Data Gathering Tools [http://www.okstate.edu/ag/agedcm4h/academic/aged5980a/5980/newpage16.htm](http://www.okstate.edu/ag/agedcm4h/academic/aged5980a/5980/newpage16.htm)
- Questionnaire and Interview as Data-Gathering tools [http://www.okstate.edu/ag/agedcm4h/academic/aged5980a/5980/newpage16.htm](http://www.okstate.edu/ag/agedcm4h/academic/aged5980a/5980/newpage16.htm)
Thank you!
Questions?

Website:
(https://sites.google.com/site/magdaelsherbinispresentations/)

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