Considering Your (Methods) Options

This project is made possible by a grant from the U.S. Institute of Museum and Library Services.
(Some) Types of Data Collection

- Anecdote recording
- Balanced scorecard
- Benchmarking & comparative indicators
- Critical incident technique
- Customer feedback analysis
- Delphi technique
- Document analysis
- Economic studies
- Environmental scanning
- Ethnographic methods

- Experiments
- Focus groups*
- Interviews*
- Learning Analytics
- Observation*
- Participatory research*
- Peer review
- Rubrics
- Surveys/questionnaires*
- User experience (UX)
- Usage data

*covered in another module
Anecdote Recording

- **Tracking of reported or observed episodes** or impact over time
- Organized recording
  - Date, time (when did the event happen)
  - Setting (where or what context)
  - User experience (what happened)
  - Impact (what difference did the event make)
  - Other (pre-determined) category (e.g., trends, mission-oriented, problem/need to address)
- Usually user reported staff logged, also could be staff observed
- Positive, negative, neutral events
- Can provide **context** for other data
Balanced Scorecard

• Performance measures are linked to **strategies** as articulated in a **strategic plan** or similar document.

• Based on answering four questions:
  
  – How do the users see the library? (**user** perspective)
  
  – What must the library excel at? (**internal** perspective)
  
  – Can the library improve and create more value? (**innovation** and **learning** perspective)
  
  – How does the library look to stakeholders? (**financial** perspective)

• Linking performance measures to questions helps surface relationships among areas and where the benefit of one might come at the cost of another.

## Common Balanced Scorecard Perspectives

<table>
<thead>
<tr>
<th>User perspective</th>
<th>Innovation &amp; learning perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who are our users?</td>
<td>Ability to grow, develop, and introduce new services</td>
</tr>
<tr>
<td>What value do we provide to them?</td>
<td>Quality of existing infrastructure</td>
</tr>
<tr>
<td></td>
<td>Organizational culture</td>
</tr>
<tr>
<td></td>
<td>Improvement of staff skills</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Internal perspective</th>
<th>Financial perspective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process</td>
<td>Demonstrate effective use of funding</td>
</tr>
<tr>
<td>Competencies</td>
<td></td>
</tr>
<tr>
<td>Productivity measures</td>
<td></td>
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<tr>
<td>Technological capacity</td>
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Balanced Scorecard Perspectives

- Each **perspective** includes: objectives, measures, targets, and initiatives.
- Setting **targets** can be challenging; targets should stretch beyond existing levels, but not so far that fear or frustration results.
- Measures should be focused on **outcomes** that will be the result of the underlying strategies, not inputs/outputs.
- Provides a framework for **communicating** library strategy.

Benchmarking and Comparative Indicators

Benchmarking generally involves using data for making comparisons to improve an organization’s performance.

<table>
<thead>
<tr>
<th>“Benchmarking is defined as the process of measuring products, services, and processes against those of organizations known to be leaders in one or more aspects of their operations.” —American Society for Quality</th>
<th>“Benchmarking is the process of measuring key business metrics and practices and comparing them—within business areas or against a competitor, industry peers, or other companies around the world—to understand how and where the organization needs to change in order to improve performance.” —American Productivity &amp; Quality Center</th>
</tr>
</thead>
</table>

https://asq.org/quality-resources/benchmarking
https://www.apqc.org/blog/what-are-four-types-benchmarking#:~:text=There%20are%20four%20main%20types,identify%20performance%20gaps
Different types of benchmarking can be used to answer various questions.

<table>
<thead>
<tr>
<th>Performance vs. Practice</th>
<th>Internal vs. External</th>
</tr>
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<tbody>
<tr>
<td><strong>Performance</strong></td>
<td><strong>Internal</strong></td>
</tr>
<tr>
<td>• collecting and comparing <strong>quantitative</strong> data</td>
<td>• compares performance or practice information from within the organization</td>
</tr>
<tr>
<td>• Often used to identify performance gaps</td>
<td></td>
</tr>
<tr>
<td><strong>Practice</strong></td>
<td><strong>External</strong></td>
</tr>
<tr>
<td>• collecting and comparing <strong>qualitative</strong> data</td>
<td>• compares performance or practice information to other organizations</td>
</tr>
<tr>
<td>• Often used to understand people, processes, and technology</td>
<td></td>
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</tbody>
</table>
Benchmarking process can be outlined as a series of repeatable steps for continuous assessment and improvement.

1. Define the focus of the benchmarking study
2. Form a diverse team and establish goals
3. Establish work plan/process
4. Seek potential partners

1. Collect qualitative, quantitative, internal, and/or external data needed to make comparisons

1. Compare data
2. Identify performance gaps
3. Determine which practices contribute to gaps

1. Develop improvement goals
2. Create action plans to achieve goals
3. Implement and monitor

https://asq.org/quality-resources/benchmarking
Composite indicators can be used to measure multi-dimensional concepts that cannot be captured with a single metric or data point.

“A composite indicator is formed when individual indicators are compiled into a single index, on the basis of an underlying model of the multi-dimensional concept that is being measured.”

—Organisation for Economic Co-operation and Development (OECD)

OECD’s checklist for building a composite indicator:

1. Establish **theoretical framework**
2. Select **data**
3. **Impute missing data** as appropriate
4. Conduct **multivariate analysis**
5. **Normalize** variables
6. Apply **weighting and aggregation**
7. Perform **uncertainty & sensitivity** analysis
8. Analyze results against **underlying data**
9. Compare against **other indicators**
10. **Visualize** results

## Benchmarking and Composite Indicators

<table>
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<tr>
<th>PROS</th>
<th>CONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can summarize complex, multi-dimensional realities with a view to supporting decision makers</td>
<td>May send misleading policy messages if poorly constructed or misinterpreted</td>
</tr>
<tr>
<td>Facilitates communication with stakeholders and promotes accountability</td>
<td>May disguise problems in some dimensions, making them more difficult to isolate and rectify</td>
</tr>
<tr>
<td>Are easier to interpret than a battery of many separate indicators</td>
<td>May invite simplistic policy conclusions</td>
</tr>
<tr>
<td>Helps to construct narratives for non-technical audiences</td>
<td>May lead to erroneous decision making if dimensions that are difficult to measure are ignored</td>
</tr>
<tr>
<td>Can assess progress over time</td>
<td>May be misused if index construction is not transparent and/or lacks sound methods</td>
</tr>
<tr>
<td>Enables users to compare complex dimensions</td>
<td>Selecting indicators and weights may introduce disagreement</td>
</tr>
<tr>
<td>Reduces the visible size of a set of indicators without dropping underlying information; this makes it possible to include more information</td>
<td>Places issues of performance and progress at center of decision making</td>
</tr>
</tbody>
</table>

Critical Incident Technique

- Used to gather and analyze data about a **memorable event**.
- Respondents remember a time when they interacted with the library then articulate what impact that interaction had on them.
- University of Washington: “Tell us in a few sentences about a time that Libraries staff, services, resources, or spaces had a positive impact on your work.”
- Trinity University: “Think about a time when the university library helped you. What help did you receive and what did that help enable you to do?”
- CLASP project: Participants were asked to recall and describe in their own words: (a) a successful library experience either recently or in the past, (b) an unsuccessful library experience, and (c) the factors that made the experience successful or unsuccessful.
Customer Feedback Analysis

• Means for users to make known their views; elicits both **positive and negative** feedback

• Only useful if data is analyzed, reported, and used for change

• **Feedback form** on library website; comment forms for physical visitors

• Recording of comments and service problems
  - **Problem tracking**
  - **Question tracking** (number of questions about various problems/needs/issues, reference or other service points)

• When possible, responses appropriate when commenter is identifiable

• Problems/questions that repeat **should be addressed and communicated**

Delphi Technique

- Method that **elicits, refines, and draws upon the collective expertise** and perspectives of an expert panel; used to obtain expert consensus

- Establish a range of views on a topic, then gather different perspectives to reach a **overall consensus** that the majority of participants agree upon

- **Facilitator** guides process; participants (experts, remain anonymous) contribute substantial time

- **Process**: 1) initial round of questions to experts 2) answers compiled in statement form and sent back to experts who 3) provide additional opinions and perspectives; process continues until consensus emerges

- **Purposes:**
  - Forecast trends
  - Establish range of views on a topic
  - Gather opposing/different analyses
  - Reach a considered overall synthesis with assent of majority

- Process can **unintentionally weed out innovative or controversial views**
Application of the Delphi Method

1. Selecting a Facilitator
2. Recognizing Experts
3. Explaining the Issues
4. 1st Round Questionnaire
5. 2nd Round Questionnaire
6. 3rd Round Questionnaire
7. Taking Action

Results, Analysis, Discussion

Document Analysis

Document examples:

• User feedback forms
• Strategic planning
• Policies & procedures
• User communications (e.g. chat transcripts)
• External documents (e.g., institutional documents, syllabi, press releases, speech transcripts)

Check documents for:

• credibility (free from errors)
• representativeness (typicality of the document)
• meaning (significance of content)

Establish method for coding.

May employ multiple raters; if so, check for interrater reliability.


Economic Studies

- What is the return on the money spent by the library? (return on investment, ROI)
- How much does the library save the organization?
- Why is a organizational library the best option (rather than an outsourced solution)?
- What is the cost/benefit of the library overall?

What’s Your Library Worth
https://ilovelibraries.org/what-libraries-do/calculator/

True Value Project
https://truevalue.ischool.syr.edu/calculator/

Challenging in academic contexts:
- faculty time/pay not standard
- student time not adequately represented by tuition

Easier to document financial stewardship than return on investment.
Environmental Scanning

• Observe events in library’s external environment
• Measure library performance against the organizational or broader environment
• What issues might become obstacles or opportunities?
• Categories:
  – Demographic/social/cultural issues
  – Legal/political requirements
  – Economic issues
  – Technological change
  – Environmental issues
  – Legal issues
• Methods for gauging and understanding issues
  – Analysis of documentary evidence
  – Analysis of statistical data showing trends
  – Review of related publications
  – Interviews with experts/leaders

https://www.edrawmax.com/pestel-analysis/
Ethnographic Methods

• **Observational** in nature.

• The worldview of the participants is investigated and represented in order to create a vivid reconstruction of the groups or cultures being studied to describe and explain the values, beliefs, and practices of a group.

• Researchers immersed in the group in a natural setting; field notes are both descriptive and analytical; both the researcher and group participants seek to uncover meaning.

• Goal: explain what is happening and observed in a situation, why the group is acting as it does, and what can be learned.

“Experiments”

• Can be tricky in library assessment contexts:
  – Controlling variables in fluid environments/contexts is difficult to impossible in regular assessment practice
  – Withholding services/resources/spaces is unethical
• Controlled experiments unlikely to be possible
• Randomized control trial (RCT) also uncommon
• Quasi-experimental designs and retrospective (ex post facto) designs are generally possible
Common Quasi-Experimental Design

Learning Analytics

• The use of institutional-level systems that collect individual-level student learning data, centralize it in a record store, and serve as a unified source for research seeking to understand and support student success.

• Learning analytics helps educators: discover, diagnose, predict challenges to learning and learner success, and create or deploy active interventions to benefit students.

• Goals:
  – Systemic and structural changes to practices, processes, and policies to improve learner experiences and remove obstacles to student success.
  – Facilitation of individual-level communication and connection.
Learning Analytics

Institutional Record Store or Data Repository
protected by policies, procedures, practices, technical security, governance, etc.

Analysis
queries and correlations based on vetted, approved research questions by researchers and educators with access credentials and continually assessed for bias and error that point to experiences that lead to (or away from) success

Students
Facilitate Metacognition, Empowerment, Agency

Faculty
Improve Courses/Curriculum

Institution
Maximize Facilitators, Recognize & Dismantle Hurdles

Advisors
Increase Personalization, Customization, Connection with Supports

Librarians
Improve Services, Resources, Facilities to Facilitate Student Learning and Engagement
Peer Review

- **Ask qualified experts to assess** the quality of a service, resource, or space.

Requires:

- **Identifying qualified experts** who can assess quality and communicate recommendations

- **Establishing specific criteria** and processes for judgments

- **Ensuring transparency** about the purpose and possible outcomes of the process

- **Requiring structured, accessible reporting**

Rubrics

• describe attainment of an outcome in 2 dimensions
  – parts, indicators, or criteria (the conditions, indicators, markers, list of measures that indicate an outcome has been met)
  – levels of performance (describe evolution or development of outcome attainment, benchmarks, touchpoints, milestones; focus on quality of performance rather than quantity when possible)

• formatted on a grid or table

• employed to judge quality

• used to translate difficult, unwieldy data into a form that can be used for decision-making
## Rubric Types

### Analytic
- assesses the component parts of an artifact of service/learning
- provides separate judgments of each component (criterion), as well as a summed total judgment
- provides more detailed assessment data
- gives more specific feedback to users/learners/service providers
- better for evaluating complex artifacts of service/learning

### Holistic
- assesses an artifact of service/learning as a whole
- provides a single, overall judgment of quality
- faster to use, less burdensome for large-scale assessments
- usually sufficient for evaluating simple artifacts of service/learning

### Task vs. Developmental
- **Task/Performance** – For one-time, non-programmatic assessments
- **Developmental** – For assessments used over multiple library services, assignments, time, programs, or groups. Not specifically designed to assess a artifact, but rather to answer the questions “To what extent are users who engage in our programs/services developing this skill/ability/value/etc.?” or “To what degree are our programs/services resulting in a particular outcome?” Goal is to determine level of development.
User Experience (UX)

- “User experience (UX) focuses on having a deep understanding of users, what they need, what they value, their abilities, and also their limitations... UX best practices promote improving the quality of the user’s interaction with and perceptions of your product and any related services.” – usability.gov

- Applies many methods including:
  - usability tests
  - card sorts
  - tree tests
  - affinity diagrams
  - service blueprints
  - journey maps
  - user personas

Peter Morville’s User Experience Honeycomb
Usage Data

Use existing relevant data such as:

- **Resource usage** trends and patterns
- **Service transactions**

May **leverage**:

- service, resource, and space usage counts (e.g., circulation)
- vendor/supplier use data
- web analytics
- alerts or citations
- COUNTER data

May **track**:

- number of sessions (defined by logins)
- number of searches
- number of accesses, views, downloads
- number of failed transactions

May be **abstracted** to user groups:

- by role
- by academic level
- by campus
- etc.
Multiple and Mixed Methods

• Meaning is integrative; to gain understanding, we combine information.

• The world isn’t quantitative or qualitative; it’s mixed.

• Multiple, mixed, and triangulated methods help us look at concepts, issues, and experiences in different ways and help us make sense and meaning.

• Multiple methods bring together information gathered in different ways within one study/project or over a series of studies/projects to give greater understanding than one method would bring alone.

• Complementary methods can overcome weaknesses in individual methods and reduce bias.

• One approach is less likely to do justice to the concept, issue, or experience that multiple can. This is true not only for methods but also underlying theories or philosophies, research questions, overall study design, data analysis, reporting/communication, and resulting action.
Ten Rules of Data Collection

1. Always observe strict ethical standards; do no harm; get permission when necessary. Allow participants to withdraw at any stage.

2. Always explain the purpose of any data collection and the use to which data gathered will be put. Participants should benefit when possible.

3. Explain who you are and provide contact information.

4. Do not assume knowledge on the part of the respondents. Explain everything clearly. Keep language simple and unambiguous.

5. Arrange questions in a logical sequence. Ask one question at a time.

6. Avoid leading questions which might suggest what is the “right” answer.

7. Always run a pilot and make amendments based on what you find out.

8. Analyze all the results; allow the data to reveal all that it can.

9. Do not make claims unless the results support those conclusions.

10. Acknowledge you sources and your collaborators.

Ethical Practice Considerations in Choosing a Method

- Informed Consent
- Privacy including confidentiality and anonymity
- Non-maleficence
- Beneficence and duty of care
- Ethical guidelines and oversight
- Power differentials
- Interests at stake, risks, cost/benefit ratio

- Rights, permissions, protections
- Ownership, control of, and access to data
- Power of research sponsors
- Avoidance of selective or skewed data analysis
- Value positions in data analysis
- Reciprocity

Criteria for Choosing a Method/Tool

- **Appropriateness** to the research question and purpose
  - Will it provide insight to the research question?
  - Can the results be used to make decisions and take action?

- **Resulting data** form/type (e.g., quantitative vs. qualitative, descriptive vs analytical)
  - Will the resulting data type match the research need and serve the purpose of the project?

- Methods by which data will be **analyzed and presented**
  - Do we have the **capacity** to accurately analyze the results?
  - Will the **results** resonate with audiences and decision-makers?

- **Alignment** with the overall assessment plan
  - Will this method/tool help us:
    - establish a baseline or target?
    - reveal new information or understanding?
    - replicate a study and/or determine whether our expectations are accurate and fit our context?
    - provide valid and reliable results?

- **Costs** (e.g., time, finances, personnel; one time or ongoing?)

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Considering Your (Methods) Options

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