# Using a Reflexive Process to Investigate Organizational Change: The Use of the Research Spider Matrix

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BACKGROUND

- New Assistant Director with 20+ years research experience

- New unit objective: build research capacity in current staff

- Changes to existing organizational cultures and daily work practice

- Understand existing organizational relationships

- Establish reciprocal trust relationships

- Assess readiness for change

- Instrument of choice: the Research Spider

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THE RESEARCH SPIDER
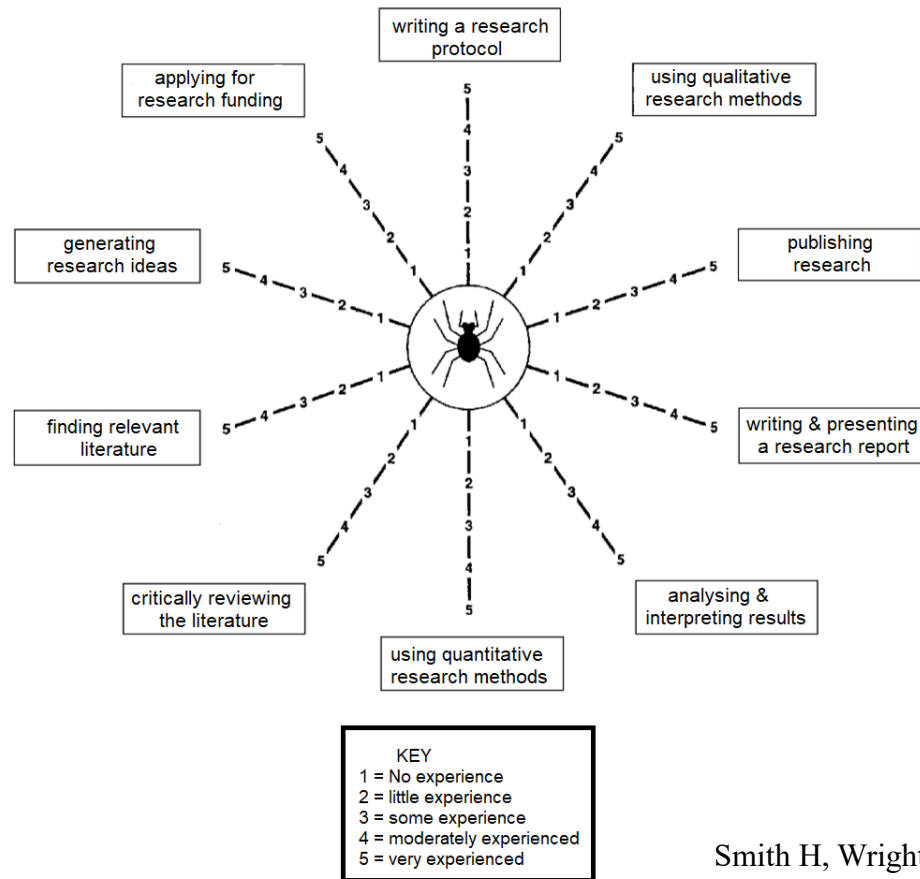
- Low-risk research skills assessment

- A star-plot style questionnaire
  - Face, construct, and concurrent validity

- 10 scales (or limbs) relate to specific components of the research process

- 1-5; novice to expert

- Reflexive statement

Smith H, Wright D, Morgan S, Dunleavey J, Moore M. The 'Research Spider': a simple method of assessing research experience. *Prim Health Care Res Dev.*. 2006;3(3):139-140.

DATA

Median	Mean	Standard Deviation
2	2.57	1.133893
2	2.14	1.069045
3	2.86	1.345185
4	3.71	0.95119
3	2.71	1.112697
3	2.43	1.133893
3	3.14	1.214986
5	4.43	1.133893
3	3.29	1.253566
2	2.14	1.214986

ANALYSIS

- Moderate level of expertise in research-centric activities.
    - Expert (4-5): Finding Relevant Literature, Writing & Presenting a Research Report
    - Intermediate: Publishing Research, Critically Reviewing the Literature, Generating Research Ideas, and Analyzing and Interpreting Results.
    - Novice (1-2): Using Qualitative Research Methods, Writing a Research Protocol, and Applying for Research Funding.

- Standard deviation showed swings in variability across our scores.
    - Least amount of variability: Finding Relevant Literature, Generating Research Ideas, Writing & Presenting a Research Report, and Analyzing & Interpreting Results.
    - Moderate variability: Using Quantitative Research Methods
    - Most amount of variability: Using Qualitative Research Methods, Critically Reviewing the Literature, and Applying for Research Funding.

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RESEARCH COMPETENCIES

	Competency	Research Knowledge, Skills, and Aptitudes
1	Writing a research protocol	We should know about what a research protocol is; be able to help patrons find how to write a research protocol. Know where to look for protocols
2	Using qualitative research methods	Be able to direct patrons to the appropriate types of studies and be able to create effective search strategies to retrieve these articles. Know the terminology of qualitative research and know the databases to search.
3	Publishing research	Know how to evaluate journals. Know how (e.g. know the tools) to recommend journals for publication. Be able to critically write, read, review, and edit manuscripts in collaborative projects
4	Writing and presenting a research report	Be able to communicate research findings in a clear and succinct manner and in the appropriate format (applies to grant deliverables, posters, papers, etc.)
5	Analyzing and interpreting results	Be able to take the collected data and use it to answer questions and make determinations. Be able to direct patrons to appropriate resources (i.e., guidelines)
6	Using quantitative research methods	Be able to direct patrons to the appropriate types of studies and be able to create effective search strategies to retrieve these articles. Know the terminology of quantitative research.
7	Critically reviewing the literature	Understanding of research methodologies. Be able to direct patrons to appropriate resources and tools.
8	Finding relevant literature	Know the appropriate databases to search and the best methods for searching them. Know how to use search tools. Be able to develop serendipitous, complex strategies that have appropriate specificity/sensitivity levels. Know how to save search alerts and create deliverables. Knowledge of controlled vocabulary.
9	Generating research ideas	Be aware of current trends in the field. Atmosphere of trust. Recognize the need to search for previously conducted research.
10	Applying for research funding	Understand the grant funding process. Be able to direct patrons to appropriate resources/referrals. Know how to set up ORCID/ResearcherID, ScienCV, My Bibliography, and how to link to ERA Commons. Knowledge of Community of Science (COS) Pivot. Know how to search grants.gov, foundation directory, and other resources.

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FROM A NEW LIBRARIAN PERSPECTIVE

- At first, overwhelming and disconcerting

- Parallels to my own experience

- Research Spider
  - Useful as a method of self-assessment
  - Useful in developing levels of comeptency
  - Helpful in setting short- and long-term goals
  - Provides individual and unit perspectives

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WHAT WE LEARNED

- Evolving the role of librarians from a reference frame to a research frame requires thoughtful organizational and cultural changes.

- Self-assessment can be challenging, intimidating, and anxiety provoking.

- The process enhanced our existing trust relationship that allowed us to be vulnerable during discussions.

- Realization that our own research projects were not so different gave us confidence to continue.

- The legs of the Spider were a useful construct of the research process.

- We knew more than we thought we did!

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