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Interdisciplinary collaboration: Lessons learned from systematic review research projects

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Systematic Review: Interdisciplinary Collaboration

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Interdisciplinary Collaboration

- Librarians working on systematic review with non-library faculty



Systematic review

- An analysis
 - ❖ of previous research
 - ❖ using a systematic method
 - ❖ to identify, select, and critically appraise relevant studies
 - ❖ to collect and analyze data from them
- Use other research results as **data** for systematic analysis
- Typically done as group research projects, not individual projects.

Research Project Examples

- ***Pedagogical strategies in massive open online courses***
 - Collaborated with the research team in Engineering Education
- ***Aviation- A systematic review of runway incursions***
 - Collaborated with the research team in Aviation and Transportation Technology
- ***STEM instruction with students with autism spectrum disorders***
 - Consulted the research team in Engineering Education



Scholarly Work

Hicks, N., Zakharov, W., Douglas, K., Nixon, J., Diefes-Dux, H., Bermel, P. & Madhavan, K. (2017, July). Video-related pedagogical strategies in massive open online courses: A systematic literature review. In proceedings of the 7th Research in Engineering Education Symposium, Bogotá, Colombia.

Wang, C., Hubbard, S. Zakharov, W., & Deng, S. (2018, March). *Utilizing the systematic literature review in aviation: A case study for runway incursions*. Presented at 104th Purdue Road School Transportation Conference, West Lafayette, Indiana.

Wang, C., Hubbard, S., & Zakharov, W.(accepted). Utilizing the systematic literature review in aviation: A case study for runway incursions. *Collegiate Aviation Review International*.

Reviewers' sample comments

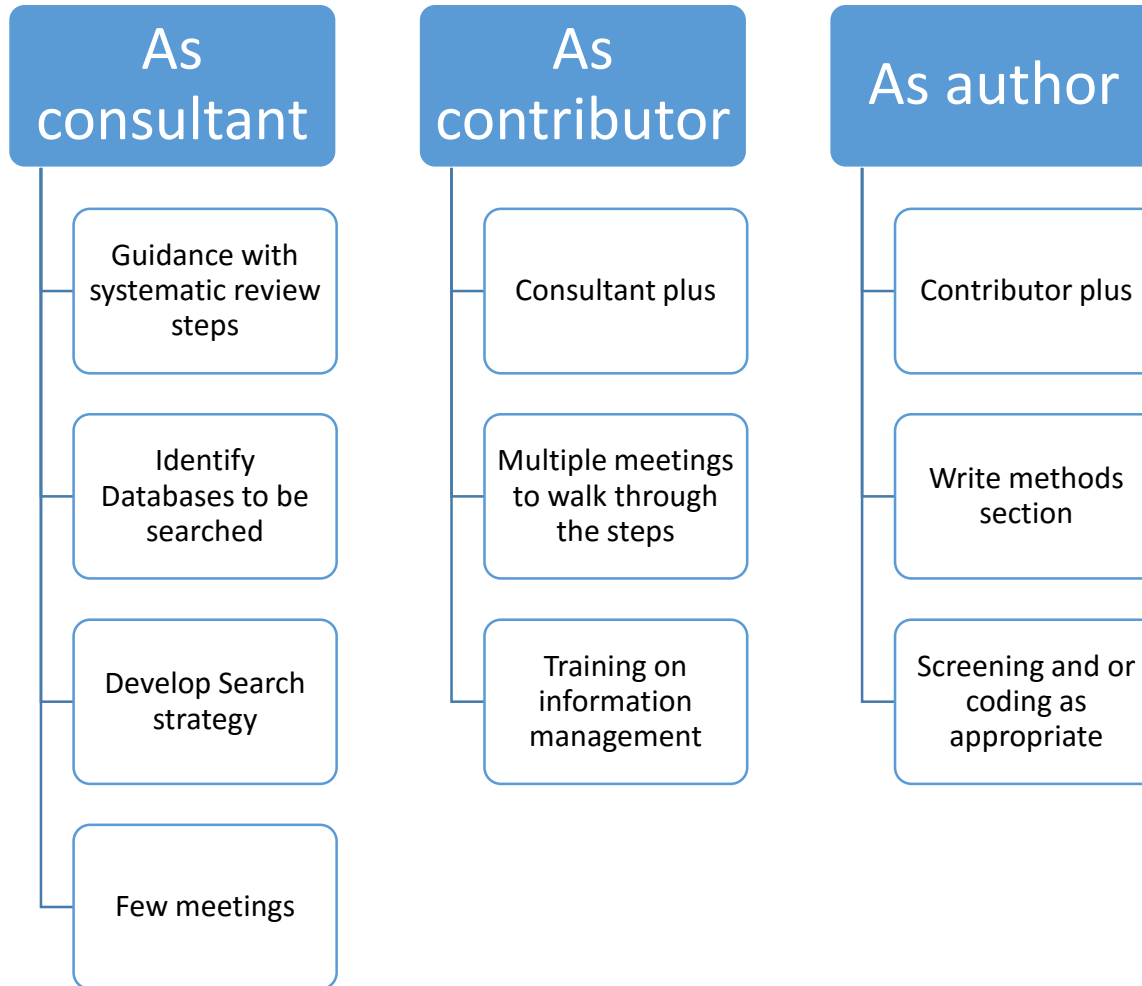
- “...This paper does not add any original contribution, it's just an organized literature review...”
- “It is my suggestion that the authors refer to previous comprehensive reviews (e.g., ...) to ensure they include all studies as well as search in journals not included...”

Review types

Types	Purpose	Search	Coding/ appraisal	Synthesis
Narrative	Overview of topic	Varies in scope, not transparent	Varies, not described	Qualitative
Scoping	Description of multiple studies	Comprehensive, documented	Categories only, no appraisal	Visual (table or “maps”)
Systematic	In-depth synthesis to answer specific questions	Comprehensive, documented	In-depth coding and appraisal	Qualitative
Meta-analysis	Numerical synthesis of data from multiple studies	Comprehensive, documented	In-depth coding and appraisal	Quantitative

Adapted from Foster (2017).

Role of Librarian



Adapted from 2017 "Intro to Systematic Reviews" by Margaret Foster, TAMU.

References

- Foster, M. (2017). Intro to systematic reviews. Workshop at Purdue University Libraries, West Lafayette, Indiana.
- Grant, M.J. & Booth, A. (2009). A typology of reviews: an analysis of 14 review types and associated methodologies. *Health information and libraries Journal*, 26(2), 91-108.