Basic Steps in Research: An Overview for Envisioning a Research Project

John Ehman (john.ehman@outlook.com), 7/14/07, rev. 7/18/24

I. Formulation of a Research Question

- Be as specific as possible when thinking about a research question. If you can't write it out clearly, it probably isn't yet sufficiently clear in your thinking.
- Be mindful about how your question has come up (e.g.: a salient group or circumstance).
- Discuss with colleagues to refine the focus and scope of your question.
  - What are the assumptions and ambiguities in your question?
  - Is the language of your question clear and precise?
  - Is your question too narrow or too broad?
  - When you think about your question, what other questions come up?
- Review the literature, with an eye toward refining your question.
- Make sure that it's a question that you're passionate about, but don't let your enthusiasm distract you from a critical appraisal of it. Guard against the risk of later saying, "I probably should have asked...."
- Be open to potential partners in your research, especially people with expertise beyond your own.

II. Assessment of Methodological Options

- Qualitative, quantitative, or mixed methodology?
- How large will be your study population? Do you have in mind a population you can access easily?
- By what methodologies have similar or related questions in the literature been explored?
- Remember that any instrument development is a complex and time-consuming task, in and of itself, to be done right.
- Do you have the opportunity to consult with methodology experts? (If quantitative methodology is involved, a statistician will be invaluable.)
- Does your chosen methodology do full justice to your research question, or should you modify either the methodology or your question for a better practical pairing?
- Consider how your methodology may be problematic to the process of engaging subjects and collecting data. Think about data collection from your subjects' perspective. (For example, long questionnaires can be off-putting.)
- Consult with colleagues about how your methodology may involve bias or an impediment to gathering "clean" data.
- Are you confident enough in your methodology that you are willing to have your own views about your research question affected by your results?

III. Authorization for Access to Subjects

- From whom do you need to get authorization? (e.g.: Institutional Review Board)
- What sorts of consents are needed from your subjects?
- How might the consent process interfere with your ability to collect data? How might you work to minimize any interference? A single person getting consents, providing an intervention, and collecting data can be problematic.

IV. Data Collection

- Make a record of everything potentially relevant to the data collection process, not just the officially collected data. Record your thoughts and observations about the data collection process along the way, especially anything that might be a concern that may need to be taken into consideration when you analyze the data and report results.
- Keep records safe and secure.

V. Data Analysis

- Be careful that you don't go looking for confirmation of your hypotheses or that you don't view your data through the lens of preconceptions.
- Involve other people who can bring an objective perspective to the analysis.
- Be mindful of how the data collection phase may raise concerns of any limits for your claims/conclusions.
- How do your data and findings open up new questions and research opportunities?

VI. Publication / Presentation

- Consider making a poster presentation at a conference.
- Does your research lend itself to a journal's "brief communication" or a full article?
- Look for journals that are Medline-indexed.
- Be prepared to revise your manuscript in light of comments from peer reviewers. The publication process takes time.

VII. Continuing Work

- Consider how to build on your research.
- Apply for grant funding for further investigation.