The Research Paper Playbook:

A PhD Student's Guide to Writing and Presenting[*]

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Steps for Writing and Presenting a Successful Research Paper:

1. **Develop Your Research Question**
    - Define the research question clearly. Characteristics of a good research question include:
        - Stated at the construct level, not empirical level
        - Precise - Clear to an educated reader what sample, x variable, and y variable could be appropriate to examine in research design, though don't be tempted to state the research question at the empirical level.
        - Concise - focused on one main effect of interest, not a laundry list of potential outcomes
        - Tension – What is the issue at debate not discovered or conclusive from prior literature?
    - Explain why this question is both important and interesting, capturing the motivation and contribution of your work. Start by drafting:
        - The first 2-3 paragraphs (motivation) of your introduction.
        - The last 3 paragraphs (contribution) of your introduction.
        - Think carefully about how your research question would be interesting to (1) academics, (2) regulators, (3) practitioners, and (4) policy makers. You do not need to engage all stakeholders noted above, but the bigger the audience, the bigger the contribution.
        - Note: In this stage you will be reviewing prior literature to determine the paper's potential contribution. While doing so, it can be efficient to summarize the papers you find in your own words so that when it comes to writing the prior literature section of the paper some of that legwork is already done.
    - Outline a preliminary plan for how you will answer the research question.
    - Develop a regression model to test your research question. Think carefully of how your model causally identifies your research question of interest.
        - Causality is important, but conditional correlations may be the best you can get. If so, then you need to think about contribution given the strength of evidence you can provide.
    - Kinney (2019) and Ben-David (2024) are helpful resources on how to generate, evaluate, and communicate research questions.

- The outcome of this stage is a 1-2 page write up outlining the what, why, and how of your proposed research question.

2. **Peer Review with PhD Students**
    - Present your idea to fellow PhD students.
    - Gather feedback, improve, and iterate until you receive a “green light” from peers. The definition of a "green light" varies at each step. There are higher hurdles for later steps in the process.
3. **Faculty Feedback – Preliminary Approval**
    - Present your refined idea to faculty members in advance. Send it before scheduling a meeting to give the faculty sufficient time to respond; they are extremely busy, so avoid sending it just a few days before a deadline.
    - Iterate based on feedback until you receive a tentative (“green light”) approval.
4. **Data Familiarization and Sample Statistics**
    - With faculty approval, begin working on sample statistics.
    - Dive deeply into the data: understand its structure, limitations, outliers, and insights.
5. **Generate Initial Results**
    - Start with univariate analysis before moving to multivariate.
    - Note any red flags:
        - If univariate results are inconclusive, reassess your approach.
        - If results are highly sensitive to robustness checks, consider the project's feasibility.
    - Create initial tables and write a brief interpretation.
    - Can you present your results in a figure? For example, if you are conducting a difference-in-differences test, show the results of parallel trends.
6. **Peer Review of Results and Interpretation**
    - Share your what/why/how writeup, tables, and interpretation with PhD students.
    - Refine based on their feedback, iterate until ready to proceed.
7. **Faculty Review of Results and Interpretation**
    - Present your what/why/how writeup, refined tables, and interpretation to faculty for further feedback.
    - Revise until you receive approval to move forward.

8. **Drafting the Introduction**
    - Find a paper that is similar and has good writing and follow their template of writing - Write the introduction, incorporating feedback and ensuring it aligns with the motivation and contribution previously outlined.
    - Guidelines for writing an introduction:
        - Keep to 6-8 pages in length
        - First paragraph is background and statement of research question
        - Second paragraph is motivation/why it is important (hint: it is insufficient to say prior lit hasn't looked at the association yet).
        - Third paragraph highlights the tension in the research question and precisely summarizes the hypothesis development.
        - Research design - sample/data/variable measurement
        - Results discussion - focus on the main result and interpret the economic magnitude. Incorporate a discussion of intuitive cross-sectional cuts and link them back to the hypothesis development.
        - Alternative interpretations/caveat discussion – Precisely articulate potential alternative interpretations rather than simply saying "there could be correlated omitted variables". Discuss how your research design and/or pattern of results address the alternatives. At the same time, be upfront about the study's limitations. Clearly acknowledge any constraints related to generalizability (e.g., limited to a specific industry, geography, or time period), data quality (e.g., missing variables or measurement error), identification strategy (e.g., potential omitted variables or reverse causality), or assumptions that might not hold in other settings. Briefly explain how these caveats affect the interpretation of your results and suggest directions for future research to address them.
        - Contribution - Maximum of 3. It is insufficient to simply restate your results after listing related papers. Bonus points if the research question is topical. Include a recent media article citation discussing the question in debate.
9. **Peer Review of the Introduction**
    - Share the introduction with PhD students.
    - Revise based on feedback, refining until it's ready for faculty review.
10. **Faculty Review of the Introduction**
    - Present the introduction to faculty.

- Improve based on faculty suggestions, finalizing it for full paper development.

11. **Complete the Paper and Prepare the Presentation Deck**
    - Write the remaining sections of the paper.
        - Note: Sometimes writing section 2 before trying to write the introduction can force you to refine your predictions and look more closely at prior literature.
    - Prepare the presentation deck with a clear narrative and visual support.
    - Use animation, font color, or text boxes to draw attention to your key points.
    - Attempt to minimize words per slide and remove extraneous control variables from tabular presentations. Avoid overcrowding slides with too much content.
    - Start with 3 – 4 overview slides that include the what, why, how, and main result. These are useful slides to have up as you answer the initial wave of questions.
    - Consider writing in your PowerPoint notes on each slide how you plan to transition into the next slide from the previous.
    - Have a results summary slide in case you're running short on time and cannot go through all the tables.
12. **Peer Review of Full Paper and Presentation Deck**
    - Share the complete paper and deck with PhD students.
    - Refine both the paper and deck based on their feedback until they're presentation-ready.
13. **Faculty Review of Full Paper and Presentation Deck**
    - Present the full paper and deck to faculty.
    - Improve as needed, incorporating any additional feedback.
14. **Present to a Broader Audience for Feedback**
    - Present your research to a broader audience (e.g., department seminar, conference practice session). Present to an empty room for practice if the above options are not possible! You could even consider recording a video of your practice.
    - Gather final feedback, refine your paper and deck, and prepare for the formal presentation.
15. **Formal Presentation**
    - Practice, practice, practice – anticipate potential questions and prepare answers in advance.
    - Ask a PhD student to take notes for you during your presentation

- Don’t be defensive. Questions/comments are not informative about your intellect, but rather on the strength of the current research product (which is a work in progress).
- Ensure you understand the question being asked.
- Answer conceptual questions conceptually - don't be tempted to say something about the data limitations or empirical measure without answering the underlying conceptual concern first.
- Be energetic! You are creating knowledge and soliciting feedback. You are not at a funeral service.
- If you're running out of time, know how to quickly navigate to the conclusion slide by clicking the slide number.

16. **Post-Presentation**

- Analyze the feedback you received and make a plan for next steps
  - Organize feedback as a writing and/or empirical to do item
  - Focus on common themes rather than every minute issue.
  - Try to think hard about the underlying cause of the stated concern. Sometimes another strategy can address the underlying issue better than the offered suggestion.
- Follow up with faculty members individually to discuss and demonstrate how you addressed the issues raised during the presentation.

Suggested timeline and progress indicators by stage

- Research seeds take time to grow - consistent effort over time is often more important than total number of hours spent (i.e., you can't "cram" writing a research paper like you could studying for a test in undergrad).
- Don't let perfection be the enemy of progress! The suggested timeline is aggressive on the low end by design. It's too easy to get caught in early steps and never let your research question see the light of day as you wait to perfect it. That misses the point entirely – progress comes through getting feedback.
- The above steps are iterative in nature, rather than purely linear. For example, writing in steps 8-11 will likely cause you to revisit steps 4-7.

Step Number	Suggested Timeline	Progress Indicators
Steps 1 to 3	3 to 6 weeks	green light indicators: there is a precise, testable research question with high potential contribution abandonment indicators: lit search reveals incremental contribution is likely narrow, data collection/availability requires significant investment and contribution is results dependent, inability to craft precise and testable research question despite efforts (move to "back burner")
Steps 4-5	1-2 months (highly variable - some data collection may be ongoing)	green light indicators: main result and a few supporting tests abandonment indicators: main results do not present despite examining reasonable alternatives, results are sensitive to different research design choices.
Steps 6-7	2-3 weeks	green light indicators: the main result is robust to reasonable alternative design choices and supplemental analyses support proposed mechanisms from hypothesis development abandonment indicators: results highly sensitive or only relevant to small sample (enough to limit contribution)
Steps 8-10	2-3 weeks	yellow light indicators: revisit steps 4-7 as you write up the paper as necessary but avoid getting stuck in a loop of trying to make things perfect at this stage.
Steps 11-13	2-3 weeks	yellow light indicators: revisit steps 8-10 as you prepare your presentation as necessary, but may need to add to your list of to do items if paper has already been sent out
Steps 14-16	2-3 weeks	green light indicators: the presentation helped you clarify what additional work you need to do and did not bring up any fatal flaws abandonment indicators: the presentation identified insurmountable issues in the research design or contribution