Guidelines for a Quantitative Research Study Proposal

Note: These guidelines have been adapted from Dr. Tracy Solomon's guidelines for the course APD2293 "Interpretation of Educational Research" and may not be applicable to or relevant for all quantitative research proposal assignments.

General Guidelines for Proposal

1. This is a proposed study, so write in the future tense to the extent possible. This might get tricky when writing the Discussion section, which will be based on what you say you found. Okay then to switch to past tense. Also, okay to write in the active tense (e.g. I will… or We will…) or the passive (Students were recruited…). I am less concerned with use of a specific tense than I am with clear and coherent writing, so I have a clear understanding of your main ideas.
2. References: **At least 15 primary sources of which at least 10 are quantitative papers.** All of the references you cite in the text must appear in your reference list and only those references you cite in the text should appear in the reference list (no extra references that you did not cite in the list please).
3. Maximum 8-10 pages for main body NOT including references.
4. Up to 2 **additional** pages for Appendices, for table, chart, questionnaire, sample questions, visuals, other materials- must NOT be used for additional text describing study!
5. Use APA format for citations in text and for References section.

Suggested Length of Sections for a 10-page paper (Adjust as you need to meet the required number of pages)
Introduction – 3 to 4 pages
Methods and Anticipated results – 3 to 4 pages
Discussion – 3 to 4 pages

Research Proposal Title: Guidelines and Tips

- Be specific. Identify the sample (e.g. elementary, grades 4 to 6, middle school, adolescents, undergraduates, adults, aging adults), state the constructs of interest (i.e. what you are measuring). A statement or a question are both okay for the title.
- Example of a not great title: Teacher Education and Student Mental Health
- Example of a Better Title (statement style): Teacher Mental Health Education Improves Teacher Identification of Anxiety and Depression in Secondary Students
- Example of a Better Title (question style): Does Teacher Mental Health Education Improve Teacher Identification of Anxiety and Depression in Secondary Students?
- Revisit the title after you have written your study proposal. Ask yourself if your study will speak to the title. Titles that start with "How…" are not easily answered by quantitative studies. You are not describing something; you are asking if a manipulation has an impact on an outcome (s) - experimental study- or if variables are systematically related i.e. if they predict an outcome (s) - correlational study. It may be easier just to state the main finding in your title (as in the statement example above). It's also okay if your title is actually your research question, your hypothesis or states your main finding (provided it has all the elements described above).

Introduction: Guidelines and Tips

- Use subheadings for sections of the introduction if it helps to organize the flow of ideas.

- **First Paragraph:** State your topic and say why it is important to study. What are the implications for individuals? For Education? For policy, practice, society? These should NOT be the only two sentences in this paragraph. It is not enough to simply say it is important or to cite someone else who says it is. Make your own case, clearly. Act as if you are convincing a funding agency to fund your study. Why should they choose your study to fund over another study on the same topic? In other words, what do we stand to gain from your study?

- **Intervening paragraphs** (3-5 suggested, but this length is just a suggestion):
    - Review previous, relevant work, identify limitations, say if the findings are conflicting. Each paragraph should have a theme or a main point. Order the paragraphs so that you build an argument that leads up to your last paragraph where you will outline a specific research question that your proposed study will address. By the time the reader gets to your last paragraph they should have a good idea as to what you are going to propose for your study. They should not be surprised by your research question/hypothesis.
    - This section should be based heavily on previous, primary source, peer-reviewed, quantitative research. Use your own argument to seam this work together to build towards your research question or hypothesis. Please avoid simply stringing together quotations from other sources (even if you cite them). Always better to write in your own words.

- **Last paragraph:** State the purpose of the proposed study in general terms. Refer to constructs (elementary student mental health, self-regulation, math achievement and so on). State a clear research question. Be specific – it should be clear what age/demographic group you will be targeting, what if anything you will be manipulating or variables you will be relating and what you will be measuring.
    - E.g. The present study will investigate…
    - E.g. The proposed study asks if grade 3 students who are taught with reading program X will show significantly greater growth in reading achievement compared to their peers who are taught with the business-as-usual reading program.
    - Alternatively, you could state as a straightforward question. E.g. Do grade 3 students who are taught with…?
    - If you are making a prediction, do so here… E.g. I predict that grade 3 students who receive program X reading instruction…
    - If you are taking an exploratory approach… E.g. Given the mixed results from previous research with program X, it is not clear which approach to reading instruction will be more effective for improving grade 3 reading achievement.
    - Alternative: At issue, was whether program X reading instruction or the business as usual reading instruction would lead to greater growth in math achievement over the school year.

Methods Section: Guidelines and Tips

- **Participants:** Describe the sample. Give the sample size. Provide age, grade, distribution of gender. Say if the sample will be ethnically or socioeconomically diverse, give as much detail as you can. Provide any other demographic information that will be important to help make sense of the study question, design, results and discussion.
    - Describe how they will be recruited.

- Say that you will obtain signed consent and from whom you will obtain it.

- **Materials/Measures/Instruments:**
  - Keep as brief as you can, no narrative sentences, name the task or measure and then very briefly describe it. **F**or established measures, cite the authors using APA style.
  - Describe any behavioural tasks like the Day/Night Stroop task or any computerize tasks.
  - Describe what kind of grades, marks, GPA etc. you will obtain and where will you get them from.
  - Describe any questionnaires or scales you will use. **Use established measures only and cite the authors as soon as you mention the scale.**
  - For each task, instrument, questionnaire here it should be clear what data you will obtain. E.g. The last sentence might be "The X scale will yield a verbal and non-verbal IQ score" or for something like the Day/Night Stroop "Participants are awarded one point for each correct trial for a total score out of 16."
  - Refer to any Appendices as Appropriate
  - Example: **Fictitious Reading Achievement Scale** (FRAS; Solomon & Ganea, 2018). A standardized scale measuring reading fluency comprising 3 short paragraphs. For each paragraph, students read the passage and then answer 4 multiple choice comprehension questions. One point is awarded for each question answered correctly, for a total score out of 12. See Appendix A.

- **Study Design**: I am inserting this section here, because at this point you will already have described your participants and the materials/measures/instruments you will use, so you can refer to them here. But you can choose to move this section to the beginning of the methods section before participants if that makes more sense for your study. If you choose this, then when you refer to the measures etc. you can say "…(see below)".
  - Whether you are doing an experiment, quasi-experiment (like an experiment but without random assignment) or association study (correlation, regression, other association models), it should be clear what are your independent variables or predictors and what are your dependent variables or outcome variables.

- **Procedure:** How will the data be collected? When? Where? What will happen to collect the data? Who will collect it?
  - E.g.1 "Participants will be tested individually in a quiet area of their school. They will receive all of the tasks at baseline (on the same day) and again one week later. The total time to complete each session will be about 60 minutes. Breaks will be taken as needed."
  - E.g.2 "Participants will create a logon code for the study site. They will login, complete a brief demographic questionnaire and then complete all four mental health questionnaires online before logging off. Three months later, they will receive an email requesting that they login and complete the same four mental health questionnaires again. The total time to complete each session will be about 45 minutes."

Anticipated Results Section: Guidelines and Tips

- **Plan for Analysis:** This subsection is not required, but great if you want to include it.
  - **E.g. for an experimental study** "I will analyze the data to determine if there is a main effect of reading program, a main effect of gender and a reading program by gender interaction on growth (or change, or improvement) in children's reading achievement scores over the school year." Note, that you should name the independent variables and the outcome variable (s), as I did in the example above. If you have multiple dependent variables, may also want to say something like, "I will

repeat the same analysis for growth in math achievement to determine if the effects for reading program A were specific to reading achievement rather than to growth in academic achievement more generally", if this is appropriate for your study.
    - **E.g. for a correlational or association study:** "I will analyze the data to determine if X (the predictor) is a significant predictor of Y (the outcome or dependent variable". If you have control variables, use the same statement but add "after controlling for…(mention the control variables here)".

- **Results:** Just say in words what you expect to find. .
    - **E.g. for an experimental study** "I anticipate that I will find that grade 3 students taught with reading program A…"
    - If your study was exploratory i.e. you did not make any clear predictions, then you will have to commit to an outcome here, so that you can discuss it below.
    - **E.g. for a correlational or association study:** "I anticipate that I will find that X (the predictors) significantly predicted Y (the dependent or outcome variables) and if appropriate add "…after controlling for…(the control variables)".

Discussion Section: Guidelines and Tips

Do not use causal language for an association (correlation) study. Also, stay away from saying that anything was "proven"! Say "The results show…" or "My findings suggest…"

- **First paragraph:** Summarize the purpose of your study. Re-state your hypothesis (es) or specific research question or questions. Simply say "The hypothesis was…" or "The specific research questions were…"
    - E.g.1 "In this study, I investigated…I was interested in whether or not children who received reading program X…"
    - E.g.2 "This study examined the relation between time spent on social media (including Facebook, Instagram and Twitter) and frequency, duration and intensity of self-reported anxiety and depression in adolescents in grades 10 and 11. It was predicted that..."

- **Second paragraph:** Summarize what you found. Discuss how your results relate to your research question, your hypothesis (es), did you confirm your prediction?
    - E.g. "I found that grade 3 students who received …"
    - E.g. "I found that the more time adolescents in grades 10 and 11 spent on social media in the preceding month, the likely they were to report…"
    - E.g. "These findings support the main study hypothesis that…" or "Thus, the results confirm the hypothesis that…"

- **Next paragraph:** What do your results mean? E.g. if you found that reading program A was significantly more effective than the business as usual approach to reading instruction, you might say "The study results suggest that X (whatever is novel or the key ingredient in reading program A) might be a more effective way to help improve students reading skills…"

- **Next paragraph:** What would it mean if you do not find your predicted results? Briefly state what a different outcome might look like.

  - E.g.1 "If I find that there is no difference between reading program A and the business as usual approach to reading instruction on children's growth in reading achievement it could be that…" Maybe your reading measures were not sensitive enough to tap any changes in children's reading skill, perhaps the programs have more in common than they differ, perhaps the study duration may not have been long enough for effects to take hold, perhaps reading program A is not effective for your target age group, even if in previous studies it was found to be effective for children in other age groups. Maybe your sample is different from that in previous studies that found different results.

- **Next paragraphs:** Discuss the strengths of your study such as random assignment to conditions or treatments, a large, diverse, representative sample, what you controlled for…
  - Discuss any limitations of your study such as that your measures may have been too insensitive to detect subtle improvements in depression scores or that the study duration may have been too short for effects to take effect or it is not possible to know if the effects you found will be enduring.

- **Final paragraph(s):** Broaden out a bit. You can make connections to the broader literature here but this is not required. Connections could be made to previous work on the same topic, (some of which you might have mentioned in your introduction) to other related topics or to an existing or emerging theory about your topic.
  - What are the broader implications of your results (relates to why your study is important as you outlined in the introduction). For individuals? For communities? For society?
  - What are potential real-world applications of your results?
  - Suggest any directions for future studies.
  - Have a concluding sentence. "Given the long-term implications of early reading skills, reading program X may be a worthwhile investment".

Appendices: Guidelines and Tips

- Each Appendix on a separate page
- You can use up your 2 Appendix pages any way you like. E.g. Each appendix could contain one of the surveys or other measures you will use so the reader can see the actual items or questions.
- A single appendix (or both of them) could contain sample questions from multiple measures. Just be sure this is clear and you include references for the measures.