Week 14: Writing (and Evaluating) the Research Report

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Housekeeping

Overview

- Course Schedule and Remaining Assignments
  - Final Research Report and Presentation: **Due May 1**
- Evaluating Research Validity
  - Ch. 23: Evaluating Research Validity I (pp. 417-432)
  - Ch. 24: Evaluating Research Validity II (pp. 433-445)
  - Appendix E: Questions for Evaluating Research Validity (pp. 556-558)
- Writing the Research Report
  - CH. 26: Writing the Research Report (pp. 456-474) (GML) METHOD: 460-463
  - APPENDIX F: Making APA Tables and Figures (pp. 559-565) (APA CH 7 pp. 195-250)
  - APPENDIX G: Writing About Your Results (pp. 566-570)
- Workshop: Peer Review and Design Feedback

Project Timeline

- Only 3 weeks left! Everyone is approved and all surveys have launched.
- Group should be working on *front end* (literature review, hypotheses, methods)
- Final Report must include:
  - APA format
  - Introduction, Rationalize, Lit Review, RQs/Hs, Methods, Results, Discussion (Implications, Limitations, Future Research), Conclusion, References, Any Relevant Appendices
- Final Conference-Style Presentation must include:
  - Visual aid
  - 10 minute max
  - Each member should speak
  - Brief Q&A at the end

Helpful Information

What's Next?

Progress!!

Evaluating Research Validity Part I

Frameworks for understanding

C&C | **GML** | **Assessment**

The Cook and Campbell (1963/1966/1979) Framework Shadish, Cook, and Campbell (2002)
Know these names, especially if you are doing experimental work
4 Key Dimensions:

- Measurement Reliability and Statistics
- Internal Validity
- Measurement Validity of the Constructs
- External Validity

19 QUESTIONS

- Q1-11 chapter 23
- Q12-Q19 chapter 24

8 RATING SCALES

- Figure 23.3 - p.426
- Figure 23.4 - p. 429
- Figure 24.1 - p. 434
- Figure 24.3 - p. 438

11 Questions: Analysis of Design and Methods

Q1: What are the key *independent* variables (LOM)?
Q2: What are the key *dependent* variables (LOM)?
Q3: What are the main *RQs* and/or *RHs*?
Q4: What is the *research approach*?
Q5: What is the general *design classification* (randomized, etc.)?
Q6: What is the specific design/approach?
Q7: Is the *measurement reliability* for each key variable acceptable?
Q8: Is the evidence of *measurement validity* for each key variable acceptable?

11 Questions: Analysis of Design and Methods

Q9: What is the overall rating of measurement reliability and *statistics*?
Q10: Are the comparison groups equivalent (random assignment)?
Q11: What is the evaluation of the control of extraneous experience and environment variables?

Evaluating Research Validity Part II

Measurement Reliability and Validity for Each Key Variable

7. Is the *measurement reliability* for *each* key variable acceptabl
   (a) What type(s) of evidence for reliability are presented?
   (b) Is the evidence or support for *each* key variable accepta
8. Is the evidence for *measurement validity* for *each* key variabl
   (a) What type(s) of evidence to support measurement reported?
   (b) Is the evidence or support for *each* key variable accepta

External Validity

14. What is the evaluation of the overall *population external validity*? Base the rating on answers to the following:
    (a) Was the accessible population representative of the theoretical population?
    (b) Was the selected sample representative of the accessible population?
    (c) Was the actual sample representative vis-à-vis the selected sample? That is, was the response rate acceptable?
15. What is the evaluation of the overall *ecological external validity*? The rating is based on:
    (a) Is the setting (or conditions) natural and representative of the target setting?
    (b) Is the rapport with testers or observers good?
    (c) Are the procedures or tasks natural and representative of the behavioral concepts of interest?
    (d) Is the timing and length of the treatment or intervention appropriate? (N/A if not an experiment because no intervention is done.)
    (e) Will the results apply to more than the specific time in history that the study was done?
16. What is the evaluation of the extent to which important participant *subgroups* were *tested/compared*?
    (a) Are gender differences analyzed/compared?
    (b) Are two or more ethnic or racial groups analyzed/compared?
    (c) Are two or more age groups analyzed/compared?
    (d) Are other important subgroups (such as cultures, geographic regions, etc.) compared?

nstructs

t validity of the intervention? If there question is skipped as *not* applicable.

dent variable) operationally defined , based on an existing body of arch?
nough detail for it to be replicated?
or verification to be sure that the anned?

8 More Questions: Analysis of Design and Methods

What is the evaluation of the . . .
Q12: construct validity of the intervention (i.e., did the manipulation work?
Q13: construct validity of the outcome measures (DVs) and any attribute IVs?
Q14: overall population external validity?
Q15: overall ecological external validity?
Q16: extent to which important participant subgroups were tested and/or compared?

8 More Questions: Analysis of Design and Methods

Q17: Was there adequate *peer review*?
Q18: Do the authors adequately present the case for the *theoretical importance* or *practical relevance* of their RQs and design?
Q19: Do the authors *interpret* their findings adequately? Were the title, abstract, and discussion clear and accurate (as opposed to overstated and misleading) given the evaluation of the several aspects of research validity?

Summation: Appendix E

Variables | Measurement | Internal Validity | External Validity | Other Issues

Q1 - Q6

Variables and Their Measurement Levels

1. What are the key *independent*/antecedent/predictor *variables*? For *each*:
   (a) Is it an active, attribute, or change over time independent variable?
   (b) What is the *number* of *levels*/categories of the independent variable?
   (c) What is the level of *measurement* (nominal, dichotomous, ordinal, or approximately normal), of the independent variable?
2. What are the key *dependent* or outcome *variables*? For *each*, what is the level of *measurement*?
3. What are the main *research questions* or hypotheses?
4. What is the *research approach* (i.e., descriptive, associational, comparative, quasi-experimental, and/or randomized experimental) *for each question*?
5. What is the *general design classification if* the approach is randomized experimental, quasi-experimental, or comparative?
6. What is the *specific experimental design* name *if* the approach is randomized experimental or quasi-experimental?

Q7 - Q9, Q12 - Q13
Q10 - Q11

Internal Validity

10. What is the evaluation of the *equivalence of the groups on participant characteristics*? Base the rating and comments on:
    (a) Was there random assignment of participants to the groups?
    (b) If no random assignment, were the participants in each group matched, made similar statistically, or found to be similar on a pretest? If random assignment was done, (b) and (c) should be scored as *yes*.
    (c) If no random assignment, were the participants in each group matched, made similar statistically, or found to be similar on other key participant characteristics (e.g., age, gender, IQ, etc.)?
    (d) Was the retention (low attrition) of subjects during the study high and similar across groups?
11. What is the evaluation of the *control of extraneous experience and environment variables*?
    (a) Was the study conducted in a controlled environment?
    (b) Did the groups have equivalent environments?
    (c) Was there a no treatment (placebo) or usual treatment comparison group?
    (d) Were there adequate attempts to reduce other extraneous influences?

Q14 - Q16
Q17 - Q19

Other Issues

17. Was there adequate *peer review*?
18. Do the authors adequately present the case for the theoretical importance and/or practical relevance of their research questions and design?
19. Do the authors interpret their findings adequately? That is, were the title, abstract, and discussion clear and accurate (or overstated and misleading) given the evaluation of the several aspects of research validity?

Writing the Research Report

The outcome of research is the GENERATION of more RESEARCH QUESTIONS
Knowledge is power!

Anatomy of the Research Report

- Title (10-12 words max)
- Abstract (no more than 120 words)
- Introduction/Literature Review (ends with RQs)
- Method (participants, measures, procedure, design and analysis)
- Results
- Discussion (Implications, Limitations, Future Directions)
- References
- Appendices

Titles

- Keep it brief (10-12 words)
- Be direct; Summarize key ideas
- Articles with stylistic cues in titles were cited less frequently

Keating, D. M., Richards, A. S., Palomares, N. A., Banas, J. A., Joyce, N., & Rains, S. A. (2022). Titling practices and their implications in communication research 1970-2010: Cutesy cues carry citation consequences. *Communication Research*, *49*(5), 627-648. https://doi.org/10.1177/0093650219887025

Titles

"This article **examines the 408 articles titled "Should I Stay or Should I Go?"** and asks why there are so many articles with the same title. The academic culture of publication pressure can lead to researchers choosing creative titles, including popular song titles, **to stand out from the crowd**. Furthermore, risk assessment leads researchers to choose the same songs as others, because well-known, easy-to-understand cultural references are better rewarded than more obscure references. The collective outcome of this, many researchers choosing the same title for their articles, reflects the mass production of cultural products, wherein **creativity is standardized and panders to the largest possible audience**."
Nieuwenhuis, J. (2022). Another article titled "Should I Stay or Should I Go?" or, the mass production of academic research titles. *The Information Society*, 1-7. https://doi.org/10.1080/01972243.2022.2152916

Abstract

- Often the only part that gets read!
- Try not to overlook it
- In many ways, it is the most important part of your article

The Front End

- Introduce the *problem first*
  - Have a clear and distinguished project statement
  - Include the goals of your study
- Make it clear how the study contributes to new knowledge
- Include a range of literature:
  - What supports the Hs?
  - What does NOT support the Hs?
- Find the *FOCUS* and lead with this
  - Testing theory? Lead with theory.
  - Effects in a context? Lead with what we know in the context.

Method

Ultimate purpose is to instruct the reader on exactly what was done to allow them to replicate the study under identical conditions.

Participants | **Instruments** | **Procedures** | **Design/Analysis**

- State total sample size
- Include demographics (age, gender, race/ethnicity, other relevant info)
- State how they were selected
- Can include power to support sample size if calculated
- Describe operationalization of IVs and DVs
- At a minimum, include reliability, means, and SDs
  - If there is room, validity evidence is nice too
- Try to have a sample item
- For measures YOU developed:
  - Pilot testing
  - Factor Analysis and results
- Design statement if necessary
  - EX: Posttest only control group design
  - EX: A 2 x 4 between subjects design
- Discuss experiment in detail
  - What was manipulated and how?
  - Remember that goal is replication
- What did participants do?
  - IRB approved
  - Gathered consent
  - Answered questions
- What tests do you plan on running?
- Missing data?

Results

- *SUMMARIZE* the analyses
- Support or show lack of support for Hs and RQs
- Can include assumptions for tests
  - Normality, linearity, equality of variances
- Include the relevant statistical logic (pp. 567)
  - Value of the statistic, dfs, p value, effect size
- Avoid making comparisons or connecting to literature

t test

ANOVA

Correlations

There was a [negative or positive] correlation between the two variables, r(df) = [r value], p = [p-value]
EX: There was a negative correlation between the two variables, *r*(33) = -.37, p = .029.

Regression

Interpreting Results (Appendix G)

4 Things to consider with any test:

- Decide whether to reject the null hypothesis
- What is the direction of the effect?
- What is the size of the effect?
- Practical, clinical, or social significance?

Discussion

Purpose | **Implications** | **Limitations** | **Future Directions**

- Main purpose is to *situate results* in the context of the literature; relate them to what we know
- Start with a brief review of the Hs and RQs and whether they were supported
- Stay within the confines of your results
- Avoid overexplaining or making sense of something that was not tested
  - "May cause"
  - "Appear to influence"
  - Do not use "approaching significance" or "proves"
- A good approach to try is to explicitly compare results of your study with the *effect sizes* reported in relevant previous studies.
- Hierarchy of importance:
  - Substantive significance
  - Scientific significance
- Threats due to:
  - Internal Validity
  - External Validity
  - Measurement Validity

The key is to make sure limits and future directions are meaningful:

- Follow up questions
- New or refined procedures
- Transfer from lab to real world
- Propose new topics

Discussion

Conclusion

- What’s the next step?
- Sum up memorably

References

- APA format!
- If you collect in EndNote or Zotero, it can spit out the reference list for you.

  I like to find the source on Google Scholar, use their generator, fix it, then grab the doi.

Presenting Results Visually

Can use Appendix F but APA manual is better if you have it (Ch. 7 - pp. 195-250)

Visual Elements

- *CLARITY* should be the primary concern of ALL Tables and Figures
- If a figure does not contribute to a reader's UNDERSTANDING in a meaningful way – leave it out!
- If formatted correctly, visual data can be POWERFUL
- Purdue OWL: **APA Tables and Figures Checklist**

Tables

- Construction of the Table
- Table Numbering
- Table Titles
- Table Headings
- The Body of the Table
- Notes to a Table
- Examples (p. 563)

Table Tips

- Be selective
- Combine where possible
- Only discuss most important parts in the text
- Work smarter where possible!
  - Can use Excel to organize
  - **Sometimes APA will organize**

Example Table

Table 1 Correlation Matrix

Variable	*M*	*SD*	α	1	2	3	4	5	6	7	8	9	10
1. Argumentativeness	32.72	6.74	.72	–									
2. Verbal aggressiveness	20.17	7.31	.81	.26**	–								
3. Relational motive	14.63	6.02	.91	.03	−.18**	–							
4. Functional motive	23.66	5.41	.88	−.01	−.22†	.15*	–						
5. Participatory motive	16.70	7.26	.77	.05	−.17**	.46†	.36†	–					
6. Excuse making motive	12.84	6.28	.87	.01	.17**	.01	.21†	.24†	–				
7. Sycophantic motive	14.18	5.98	.87	.05	−.08	.42†	.25†	.61†	.21**	–			
8. Question asking	36.00	11.35	.92	.01	−.19**	.41†	.29†	.49†	.03	.26†	–		
9. Overt information seeking	15.12	3.22	.68	.02	−.36†	.30†	.45†	.14†	.01	.14*	.40†	–	
10. Interaction involvement	85.13	16.76	.88	.07	−.31†	.38†	.29†	.18†	−.18*	.18**	.54†	.48†	–
11. OCC	26.39	7.56	.86	.04	−.19**	.56†	.33†	.34†	−.03	.34†	.44†	.38†.	.44†

Note. *$p < .05$; **$p < .01$; †$p < .001$.

Myers, S. A., Edwards, C., Wahl, S.T., & Martin, M.M. (2007). The relationship between perceived aggressive communication and college student involvement. *Communication Education*, *56*, 495-508.

Example ANOVA Table

Table 1
Means, Standard Deviations, ANOVA, and Effect Sizes for Behavioral Intentions by Message Type

Behavioral Intention	**Comparison** Status Quo Message (*n*=253)	**Treatment** IDEA Message (*n*=272)	**Total** (*n*=525)	**One-way ANOVA** ***F*** *df* =(1, 523)	**Effect Size** partial η^2
(1) Return ground beef to store	3.11 (1.41)	3.89 (1.24)	3.51 (1.38)	44.48*	.078
(2) Contact a physician for self	4.13 (.92)	4.44 (.70)	4.29 (.83)	18.62*	.034
(3) Go to emergency room (ER)	3.51 (1.14)	4.15 (.93)	3.84 (1.08)	48.80*	.085
(4) Call 9-1-1 for self	2.89 (1.21)	3.67 (1.21)	3.29 (1.27)	54.59*	.095
(5) Contact a physician for other	3.94 (.99)	4.36 (.75)	4.16 (.89)	30.42*	.055
(6) Take other to ER	3.57 (1.10)	4.17 (.90)	3.38 (1.25)	45.95*	.081
(7) Call 9-1-1 for other	3.00 (1.21)	3.74 (1.18)	3.38 (1.25)	50.29*	.088
(8) Cook ground beef to 160°	4.28 (.97)	4.57 (.79)	4.43 (.89)	13.67*	.025

Note. Standard deviation is presented in parentheses following group (message type) mean.
df=degrees of freedom.
*p<.0001

Example Regression Table

Table 2 Multiple Regression Analyses Using Teacher Confirmation Dimensions to Predict Students' Emotional Outcomes

Dependent/Predictor Variables	B	*SEB*	*β*	*t*
Emotional Interest				
Responding to Questions	.124	.249	.048	.49
Demonstrating Interest	**.439**	**.213**	**.221***	**2.05**
Teaching Style	**.730**	**.156**	**.405****	**4.69**
Emotional Support				
Responding to Questions	−.097	.235	−.043	−.41
Demonstrating Interest	**.851**	**.201**	**.497****	**4.23**
Teaching Style	.081	.147	.052	.55
Emotion Work				
Responding to Questions	−.091	.117	−.089	−.78
Demonstrating Interest	**−.235**	**.100**	**−.300***	**−2.35**
Teaching Style	.052	.073	−.073	.72
Emotional Valence				
Responding to Questions	**.123**	**.061**	**.204***	**2.01**
Demonstrating Interest	**.121**	**.052**	**.264***	**2.32**
Teaching Style	.059	.038	.141	1.54

Note. Significant predictor variables are in bold. *$p < .05$. **$p < .001$.

Goldman, Z. W., & Goodboy, A. K. (2014). Making students feel better: Examining the relationships between teacher confirmation and college students' emotional outcomes. *Communication Education*, *63*(3), 259-277

Figures

- Should be easy to read and interpret!
- Avoid any special effects
- Example (p. 564)

Peer Review

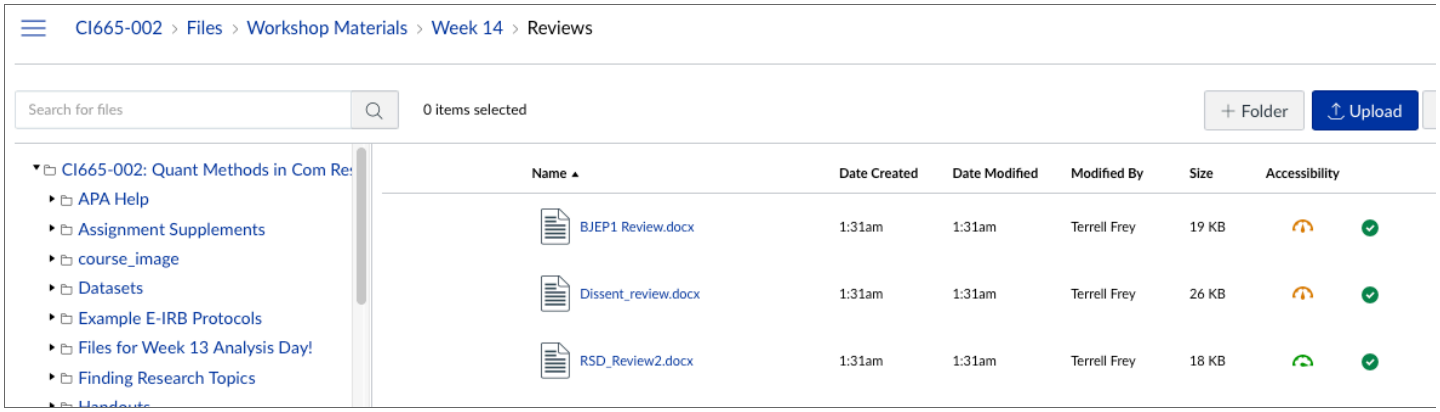
Busting the mythology of Reviewer 2

Important Considerations

- It is a privilege to be asked to review - take it seriously!
- Rely on what you know
- Rejecting an article is **okay**
  - It honestly makes the Editor's life easier
  - Have a good reason for it
- Rejection is grounded in changes that **cannot** be addressed in a revision
  - The worst thing for an author to feel that they could have reconciled the feedback

Example Reviews

- Revise and Resubmit -> Rejection
- Rejection
- Acceptance



Tips to be a good reviewer:

- Use *constructive* and *descriptive* feedback
- Offer concrete suggestions
- Acknowledge their work!
- Provide examples
- Focus mostly on big pictures issues

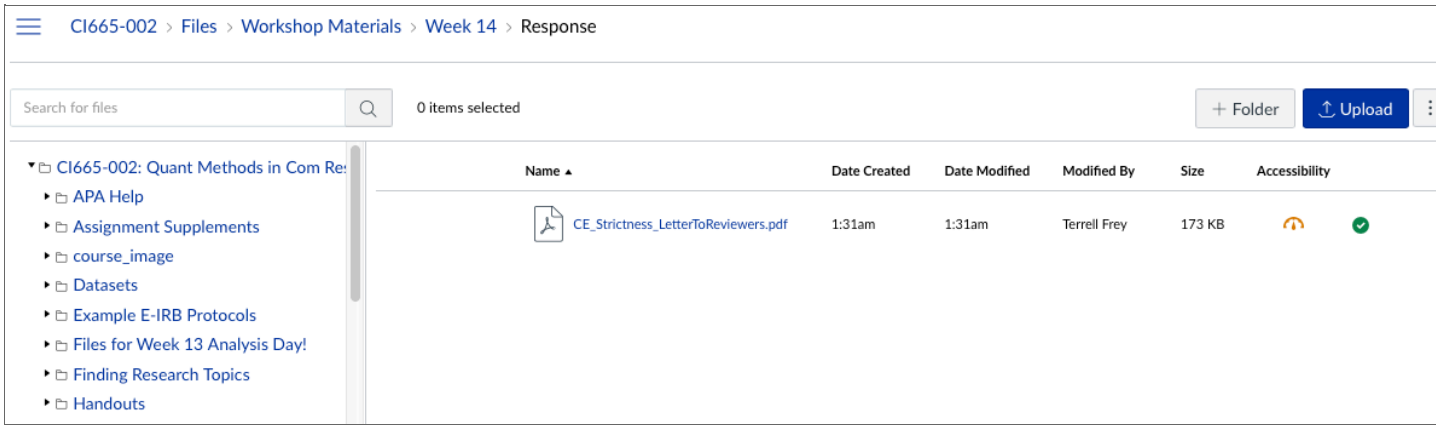
Flip Side: Responding to Reviewers!

- Be transparent
- Address ALL concerns
- Do what they ask unless there is a *really* good reason not to
- Have citations ready
- Highlight changes in manuscript AND letter
- Make them feel appreciated

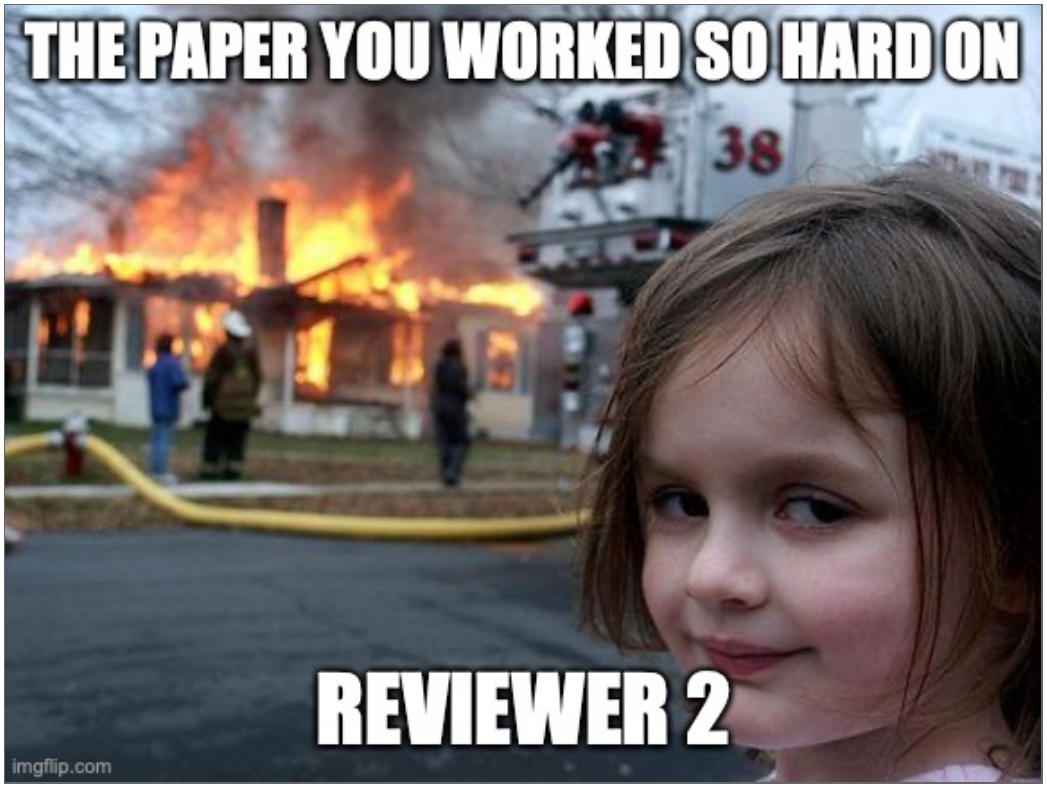
If you get to this point, it *should* be accepted

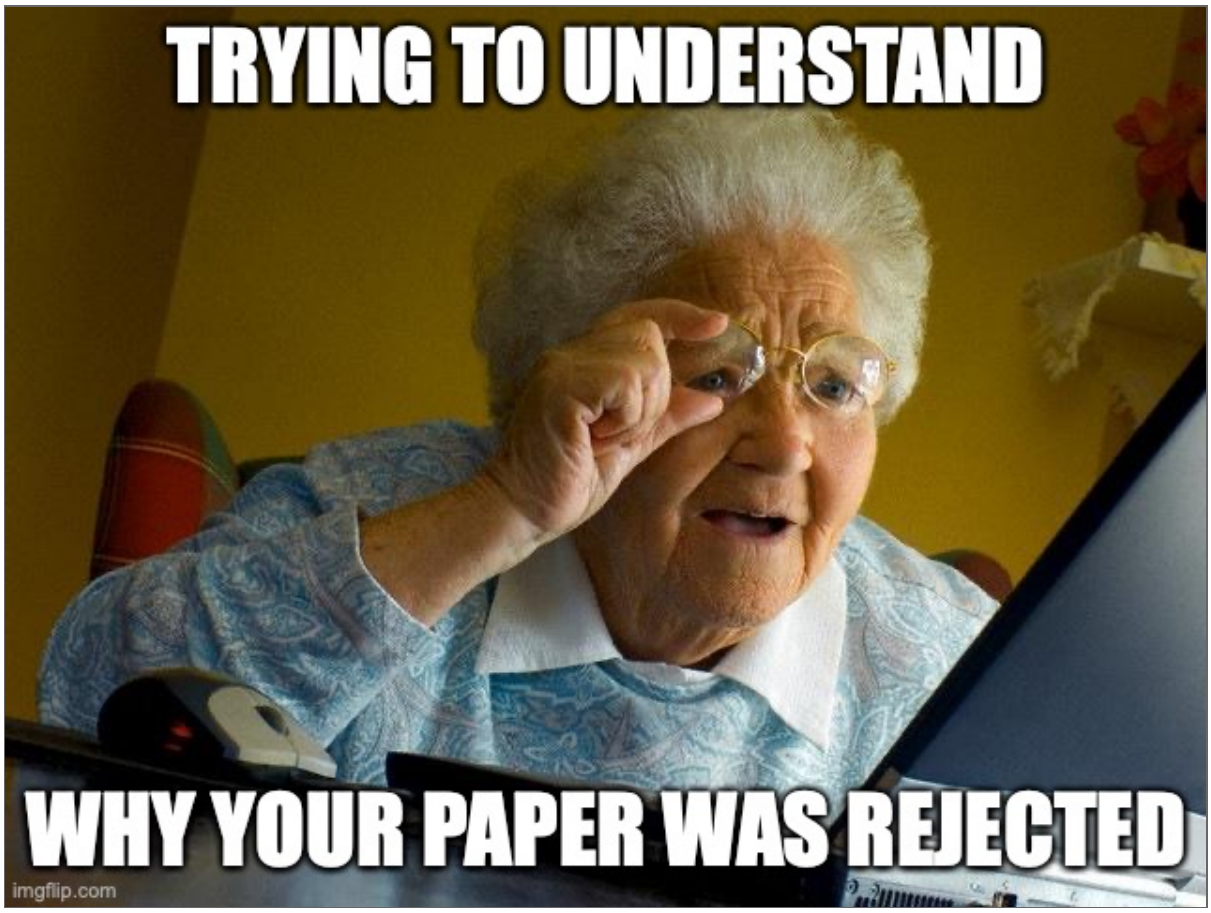
Example Response

This is the *hidden curriculum*. I learned how to do this when I took qualitative methods as a second year PhD student from this same process.



Memes!




TRYING TO UNDERSTAND
WHY YOUR PAPER WAS REJECTED
imgflip.com

Remember!

Good researchers **support** and **justify** they decisions they made along the way.

Wrap Up and What's Next??

After having your studies posted on the CI SONA webpage for at least a week, you should now have some data to begin exploration. This class period will be very applied – demonstrating how to download your data from Qualtrics, organize the database, clean the data, identify outliers, gather descriptive, and prepare everything for analysis.
I'm turning you loose!

Error ×

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