



Writing Manuscripts for Journal Publication

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Disclosure

- No disclosures to report.

Overview

- Purpose: To provide participants with ideas, tips, and techniques for writing better research manuscripts.

Course Outline

1. Introductions and review of objectives (5 min)
2. Research paper fundamentals (30 min)
 1. Introduction
 2. Method
 3. Results
 4. Discussion
3. Publishing Considerations (10 min)
4. Common problems and ways to correct them (15 min)
5. Open Q&A (30 min)

Research Paper Fundamentals

Preparing Professional Manuscripts

- Excellent papers start with good ideas or studies (rigorous methods, reliable data)
- Articles should have a single focus and address it well
- Foundations of professional writing: integrity and objectivity
- Respect the reader—clear and efficient writing
- Excellent writing cannot conceal weak or flawed material

Research Manuscript Structure and Purpose

Manuscript Feature

Manuscript Purpose

Title

Abstract

Introduction (I) → What is the Question?

Methods (M) → How is the Problem Addressed?

Results (R and) → What are the Findings?

Discussion (D) → What do the Findings Mean?

References

Medical Journalism: Key Questions

- Who is involved? Audience, authors
- What is the purpose of the manuscript?
- Report new research, review existing information, express policy opinion
- Where is the best place for the information? Most appropriate journal, “fit” journal’s scope and mission
- Why is the information important? “So what” test
- How should the information be communicated? Format and writing strategy—research, review, case report, editorial, etc.
- When should information be communicated? Rapid publication, timing with other events, publication lag

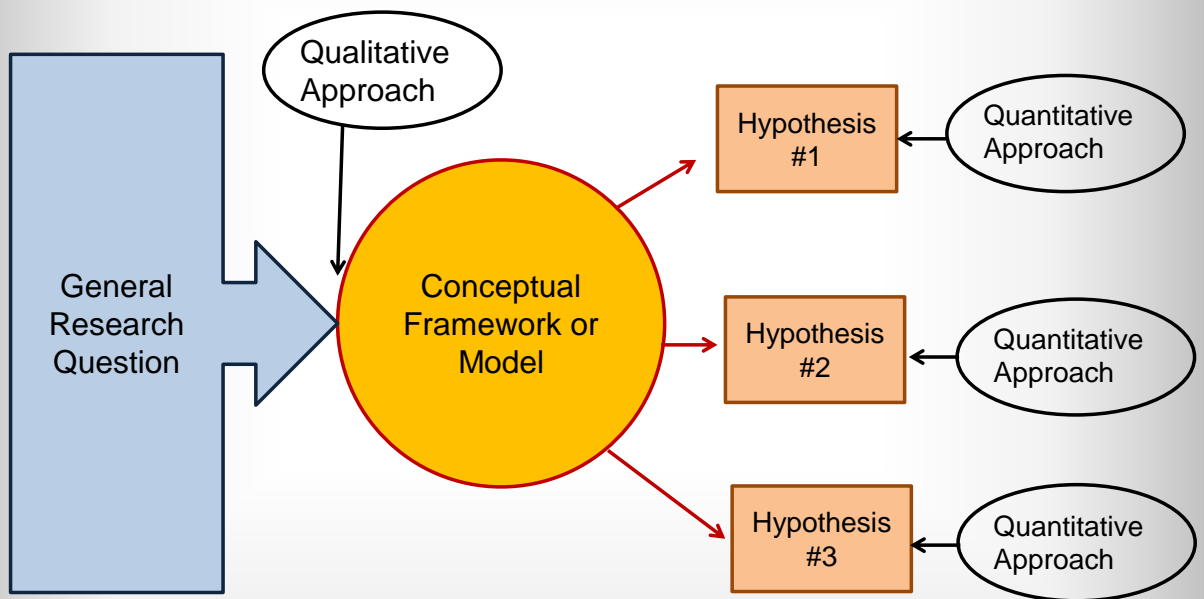
Problem Statement

- What is the problem you're studying?
- What is the relevance? (Why should the reader care?)
- Literature review. What is already known? Is it current?
- What is the theory or theoretical framework?
- What is the rationale for the study? What makes it novel?

Research Rationale

- No one has ever studied the issue
- The issue has been studied, but there are important gaps in knowledge
- The issue has been studied, but there are conflicting theories or results
- There is an alternative/better way to study the issue

Conceptual Models



The Value of Cognitive Frameworks

“The theoretical framework is the **structure that can hold or support** a theory of a research study.”

“The theoretical framework **introduces and describes** the theory that explains **why the research problem under study exists.**”

Swanson R, Chernack T. Theory Building in Applied Disciplines. Berrett-Koehler Publishers;2002.

Questions vs Hypotheses

General “Research Question”

- Informed by experience
- May or may not be specific or testable
- No assessment may yet exist
- Example: “What does unplanned mannequin death do to the learner?”

Hypothesis

- Focused, definite and predictive
- Capable of being quantitatively assessed
- Example: “Can the negative impact of simulated death on learner emotion be mitigated by specifically addressing it during debriefing using an Advocacy-Inquiry approach?”

Methods

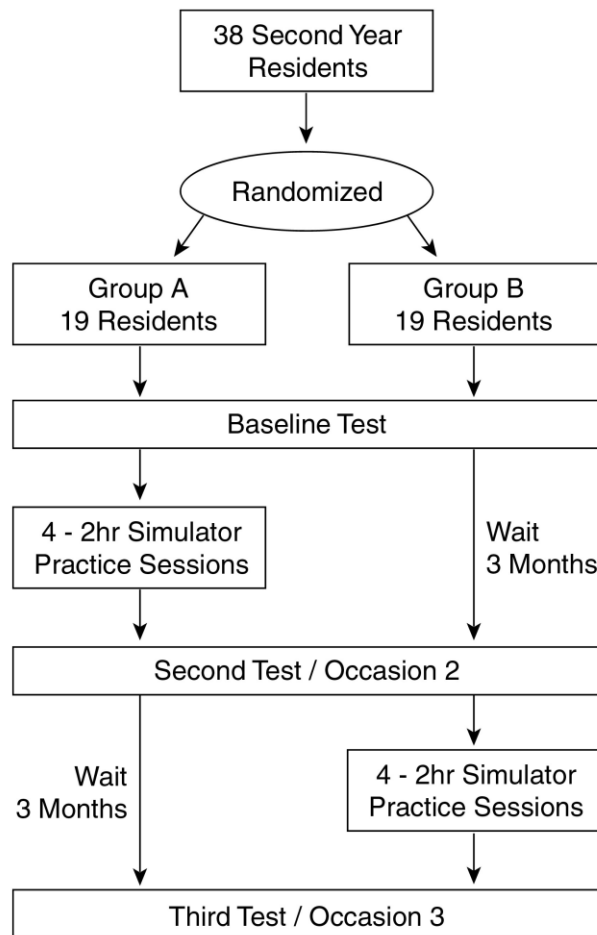
- The specific plan to investigate the hypothesis or research question
- Described in enough detail so that someone else can perform the same study

Methods - Quantitative

- Participants
 - Sample size
 - Selection, eligibility
 - Setting (laboratory, academic, clinic, etc.)
- Power analysis
 - Estimated effect size
 - Sample size needed
- Equipment/instruments
 - Are they appropriate?
 - Previous reliability and validity

Methods - Quantitative

- Research Design
 - Independent variables, factors, levels
 - Between subjects or repeated measures
 - Dependent measures
 - Randomization/counterbalancing
 - Participant flow diagram
- Plan for analysis
 - Data treatment
 - Statistical approach
 - Alpha level
- Statement regarding IRB/Ethics approval
 - Was it needed? If so, was it obtained?



Methods - Qualitative

- Used for hypothesis generation, not testing
- Participants
 - Non-random, “purposive” sampling often used
- Research Design
 - Typically consists of the analysis of textual data
 - Multiple theoretical and analytical approaches used (i.e. thematic analysis, Grounded Theory, etc)
- Plan for analysis
 - Theoretical approach used
 - Researcher “Reflexivity” (the effect of the researcher’s own presuppositions on the analysis)
 - Description of coding and consensus-building aspects of analysis
 - Data sufficiency

Results

- Describe results in same order of issues/hypotheses described earlier.
- Do the data conform to required assumptions?
- Report results of statistics performed, statistical significance, and effect sizes.
- Only report results that were described in the Methods, but analyze completely (main effects, post hocs).
- Interactions take precedence over main effects.
- Check that “numbers” add up and units are consistent.
- Use tables when precise values are important.
- Use figures when trends are important.

Discussion

- Restate primary objectives.
- Discuss results in same order of issues/hypotheses described earlier.
- Conclusions must follow from research design and data.
- Interpretations are consistent with results.
- Offer alternative interpretations.
- Tie results back to the theory and existing literature.
- Discuss limitations of the study.
- Discuss practical significance (vs. statistical significance).
- How will the findings make a difference?
- End strong. What is the clear take-home message?

General Guidelines for Effective Professional Writing

- Plan and organize before writing.
- Know your audience.
- Write for a broader, less knowledgeable reader.
- Tell the reader how you will discuss topics.
- Present an organized, logical progression of ideas.
- Maintain consistent organization throughout.
- Make sure you address what you say you will address.

General Guidelines for Effective Professional Writing

- Be clear and concise.
- Keep sentences simple, use only 1-2 ideas per sentence.
- Use cohesive paragraphs.
- Use concrete examples.
- Avoid jargon.
- Avoid passive voice.
- Select words carefully.

Tips – Literature Review

- Conduct a literature search to achieve your objective.
- Categorize your reference materials as to how they support your purpose.
- For each article:
 - What are the strengths and weaknesses?
 - Is the methodology sound?
 - Do you have confidence in their findings?
 - What is the author's opinion? Do you agree? Why or why not?
 - Are there inconsistencies in the article? What might account for them?

Tips - Make a Skeletal Outline

- Introduction
 - Heading 1
 - Heading 2
 - Hypotheses
- Method
 - Participants
 - Materials
 - Procedure
 - Experimental design
 - Statistical approach

Tips - Make a Skeletal Outline

- Results
 - Finding 1
 - Finding 2
- Discussion
 - Findings
 - Limitations
 - Summary

Tips - Make a Detailed Outline

- Then add major points to the outline
- Then fill in sentences

Model Outline for an Empirical Study

- **Introduction**
 - Describe the topic
 - Discuss the significance of the topic
 - History of the topic/early research
 - (discuss the present status)
 - (describe relevant background info)
 - Discuss issues for consideration
 - describe issue(s) #1
 - discuss relevant research
 - state hypothesis
 - state the relationship to the next topic
 - describe issue(s) #2
 - discuss the relevant research
 - state hypothesis (interaction)

Model Outline for an Empirical Study

- **Method**
 - Participants
 - Equipment/instruments
 - Procedure
 - Experimental design/statistical approach
- **Results**
 - (follow issue sequence and group DVs together)
- **Discussion**
 - Restate objectives
 - Discuss issue #1
 - Discuss issue #2
 - Discuss limitations
 - Discuss issues for future consideration
 - Provide a brief conclusion/summary

Reporting Guidelines for Health Care Simulation Research: Extensions to the CONSORT and STROBE Statements

(Cheng et al., *Simul Healthc* 2016;11:238-248)

- Consolidated Standards of Reporting Trials (CONSORT)
- Strengthening the Reporting of Observational Studies in Epidemiology (STROBE)
 - Title and abstract
 - Introduction
 - Methods
 - Results
 - Discussion
 - Other info

Tips – General

- Reconnaissance on the target journal
- Find and use a “hideout”
- Get criticism and feedback from colleagues
- Be your own toughest critic
- Proofread!
- Have your coauthors proofread!

Publishing Considerations

In Which Journal Should You Publish?

- This is extremely important because it directly affects format of the final article
- Simulation specific journal vs education journal vs specialty journal vs nursing journal
- Examples of journals accepting simulation and educational studies
 - Simulation in Healthcare-**simulation specific**
 - Advances in Simulation-**simulation specific**
 - BMJ Simulation and Technology Enhanced Learning-**simulation specific**
 - Clinical Simulation in Nursing-**simulation specific**
 - Journal of Graduate Medical Education-**resident/fellow specific**
 - Teaching and Learning in Medicine
 - Medical Teacher

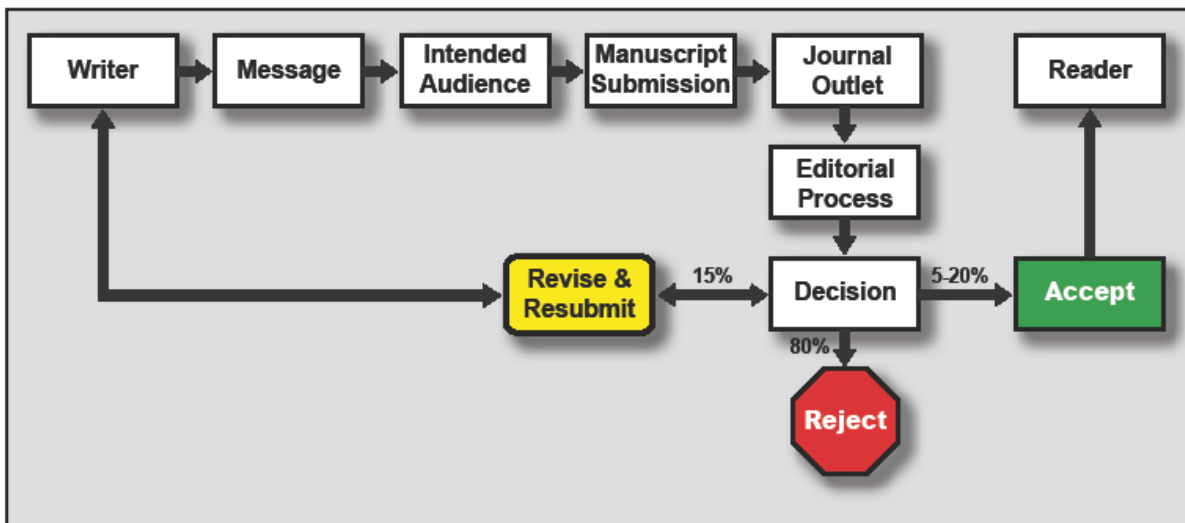


How Do You Choose...

How to maximize chances of acceptance

1. Look at example articles from a number of possible journals **prior to** writing
 - In which journal does your study seem most “at home?”
2. Once you find a possible journal, go to the website and find the “author instructions” page
3. Consider the article types available- which one fits your study best?
 - Empirical Research
 - Review
 - Curriculum Development
 - Conceptual





2009 RIME RESEARCH Paper Evaluation

<i>Criterion</i>	Not Satisfactory	Fair	Good	Excellent
Relevance to RIME				
Title, abstract, authors				
Problem statement, conceptual framework, research question				
Reference to literature and documentation				
Research design				
Instrumentation, data collection, quality control				
Population, sample				
Data analysis, statistics				
Reporting of statistical analyses				
Presentation of results				
Interpretation, discussion and conclusion				
Overall presentation, documentation				

- Strengths & weaknesses
- Recommendation

Editorial Assessment and Peer Review

- Editorial evaluation and initial screening
- Peer review process
- Editorial decision-making
- Expected turnaround time
- Tracking manuscript status

Submitting Revised Manuscripts

- “Revise and resubmit”
- Respond promptly
- Be professional and polite
- Address comments in detail
- Contact editor(s) about questions, concerns, conflicting information

Common Manuscript Problems

Top Ten Reasons Manuscripts are Rejected

(Bordage, 2001; Meyer et al. 2017)

- Insufficient problem statement, poorly described **
- Lack of novelty, irrelevant topic *
- Incomplete, inaccurate, or outdated review of the literature *
- Inappropriate or suboptimal instrumentation *
- Sample too small or biased *
- Inappropriate or incomplete statistics *
- Insufficient, inaccurate, or inconsistent data presented *
- Inappropriate tables or figures
- Weak Discussion, overinterpretation of results **
- Text difficult to follow or understand

* True for *Simulation in Healthcare*

** go hand in hand

Other Problems with Submitted Manuscripts

- Incorrect format
- Submission of very small portions (“slices”) of a study or re-analysis of same data
- Excessively long paper
- Old data
- References: too many, too few, inaccurate, unpublished data
- Lack of attention to detail

Different Types of Papers

- Empirical Investigations
- Reviews
- Technical Reports
- Special Articles
- Concepts and Commentary
- Correspondence/letters to the Editor

Discipline of Writing

Hard, solitary work

Fenstermacher's Law of Writing

Planning & outlining

Multiple **outline** drafts

Strunk & White, *Elements of Style*

Dictionary & Thesaurus

Hardnosed collegial critique



Resources on Preparing and Reviewing Papers

- Cook DA, Beckman TJ, Bordage G. Quality of reporting of experimental studies in medical education: A systematic review, *Medical Education* 2007;41:737-745.
- Cheng A, et. al. Reporting guidelines for health care simulation research: Extensions to the CONSORT and STROBE statements, *Simul Healthc*;11:238-248.
- JPGM Gold Con: 50 yrs of medical writing (huge web-oriented bibliography) www.jpgmonline.com/goldcon.asp
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- Sternberg, RJ. How to win acceptances by psychology journals: 21 tips for better writing. 1992; *APS Observer*, 12-13.
- Wagenmakers E. Teaching graduate students how to write clearly. *Association for Psychological Science* 2009; 22:29-30.
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12. Wayne DB, Butter J, Siddall VJ, Fudala MJ, Wade LD, Feinglass J, McGaghie WC. Mastery learning of advanced cardiac life support skills by internal medicine residents using simulation technology and deliberate practice. *Journal of General Internal Medicine* 2006; 21: 251-256.
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Open Discussion: Issues You Have Faced With Your Writing

Thank You!