

## Writing an Empirical Journal Article

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**Explanation:** This guidance focuses on the stages of writing and techniques for writing a manuscript explaining a research project. Use this guidance together with the guidance in, Writing Manuscripts for Publication<sup>1</sup>. This strategy for writing works well for many of Ted Endreny's collaborators. If you develop a better strategy, please share it with Ted.

### Stages of Writing

1. Stage 1: Plan
  - a. Determine audience and message
    - i. Confirm your results (message) support your objective.
    - ii. Select a journal (e.g., audience) appropriate for your results.
    - iii. Answer questions when framing objective, science questions, etc.
      1. What theory or existing hypothesis is known about focus of study?
        - a. Put issues, ideas, and findings in the foreground; avoid reviewing study after study and instead make sweeping but precise statements summarizing many studies, and cite those studies. For studies central to the current research, describe these in needed detail.
      2. What is unknown and why are these gaps in knowledge critical?
        - a. Describe literature with regard and avoid negative bias
      3. How does your work fill these gaps?
        - a. Work through rationale connecting results to filled gaps.
  - b. Prepare manuscript header, body, and supporting material sections
    - i. Title page section typically includes journal, title, authors & affiliations, key words, abstract, highlights
    - ii. Body section typically includes introduction, methods, results, discussion, conclusion; use alphanumeric outline<sup>2</sup> with complete sentences
    - iii. Material section typically includes acknowledgements, disclaimer, references, list of figures & tables, figures & tables
  - c. Reread clean, well-structured, clearly written manuscripts
    - i. Focus on how words were used to construct sentences, how sentences construct paragraphs, and paragraphs construct sections
2. Stage 2: Start writing sentences for alphanumeric outline
  - a. Complete sections as suggested in Writing Manuscripts for Publication guidance
3. Stage 3: Edit
  - a. Review outline, improve, solicit collaborator feedback on improved outline, repeat
  - b. Remove alphanumeric components and create manuscript with line numbers

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<sup>1</sup> [http://www.esf.edu/ere/graduate/Guide\\_WritingManuscriptSections.pdf](http://www.esf.edu/ere/graduate/Guide_WritingManuscriptSections.pdf)

<sup>2</sup> [https://owl.english.purdue.edu/media/pdf/20081113013048\\_544.pdf](https://owl.english.purdue.edu/media/pdf/20081113013048_544.pdf)

## Techniques for Writing

1. Editing and word choice
  - a. Systematically update all sections when fixing any element of outline
  - b. Systematically & judiciously select word choice & location for emphasis
    - i. Word choice for qualifying
      1. Adverbs: usually, often, sometimes
      2. Adjectives: most, many, some
      3. Verbs: may, indicate, seem, suggest
    - ii. Word choice for intensifying
      1. Adverbs: very, quite, clearly, always, certainly
      2. Adjectives: crucial, basic, major, key, essential
      3. Verbs: show, establish, it is clear
    - iii. Word placement in sentences to emphasize ideas;
      1. Put idea or issue at end of sentence to increase emphasis
  - c. Systematically make each word, sentence, paragraph concise
    - i. Delete meaningless words (e.g., actually, certainly, basically)
      1. Ask if it supports understanding of manuscript message
    - ii. Delete doubled words (e.g., each and every, first and foremost)
    - iii. Delete what readers can infer
      1. Drop redundant modifiers (e.g., past research)
      2. Drop redundant categories (e.g., period of time)
    - iv. Replace phrases with words (e.g., “in the event that” = “if,” “in the situation where” = “when,” “in order to” = “to”)
    - v. Change negatives to affirmatives (i.e., any phrase written “not + X” can usually be rewritten in the affirmative)
    - vi. Avoid unnecessary language that mentions your intentions (e.g., “to sum up,” “I believe,” “note that”); aka metadiscourse
    - vii. Turn nominalizations back into verbs or adjectives
      1. Verb: “the expectation was that participants” becomes “we expected participants”
      2. Adjective: “results reached significance” becomes “results were significant”)
2. Paragraph structure:
  - a. Topic sentence: contains the topic and a controlling idea about the topic
  - b. Supporting sentences following topic sentence take three types
    - i. Expand by detail
    - ii. Expand by comparison
    - iii. Expand by process
  - c. Concluding sentence: wraps up the paragraph, may transition to next paragraph
3. Cohesion: Information from one sentence appears in first few words of next sentence
  - a. Begin sentences with familiar information, end with impactful information
  - b. Use a common reference point & keywords throughout the paragraph
  - c. Use linking words to signal reinforcement of ideas (e.g., “in other words,” “moreover,” “also”) or to signal a change in ideas (e.g., “but,” “in contrast,” “however”)