Manuscript Frameworks

In the world of scholarly publications, great variety exists. For every set of data, and every topic, there are multiple ways to frame your writing into a manuscript appropriate for publication. Frameworks help researchers communicate their work in a systematic way and find its place in the larger body of work. Although most high schools teach you to only use the hypothesis-driven framework, there are many other ways to frame your manuscript.

In this module you will learn about 11 of the most common manuscript frameworks and when to use them.

Part 1: General Guidelines

1. Commonalities Between Frameworks:

   1. Abstract: According to Cargill and O’Connor (2009) an abstract has five parts. You must be succinct in explaining these five parts because most journals have a word limit for abstracts. These five parts are:
      a. Background information
      b. The purpose of the study
      c. The methods used
      d. Significant results
      e. Conclusion and recommendation

      (Some journals want an even more abbreviated abstract to contain only the purpose
and methods, significant results, and conclusions/recommendations).

2. **Introduction:** Describe the purpose, objectives, and rationale for your study including your hypothesis if you have one. Make sure to include a brief literature review section in your introduction covering what has been done. Most importantly, explain, how your study is different in order to distinguish it from other research.

3. **Conclusion:** Summarize your research, state significant implications, and suggest future research and ways to improve upon your work.

2. **Importance of Transferability and Generalizability**

   1. **Generalizability** is applying research results from a study population to the population at large. The researchers decide if their findings are generalizable to other populations.

   2. **Transferability** is the application of research results from a study population to another population or person who is reading the research article. The reader applies these results to him or herself rather than the researcher deciding if the findings are transferable.

   3. Generalizability and transferability are important when thinking about manuscript frameworks because certain frameworks work better for sharing generalizable or transferable results. For example, case study papers can be transferable, but are scarcely ever generalizable. On the other hand, hypothesis driven scientific articles are often generalized to larger populations.

3. **Know What the Journal Wants**

   1. In all cases, look at the various frameworks that your target journal publishes. Look for recently published papers for information on the most commonly published formats and how different topics are framed. This investigation will give you clues about the best way to frame your manuscript for your target journal.
Part 2: Manuscript Frameworks

1. Scientific: Hypothesis Driven

1. You conducted a study that tested the effects of nitrogen rich vs. phosphorous rich fertilizers on wheat growth. You predicted that nitrogen-rich fertilizers would affect growth more. Since this is a hypothesis, you would write a hypothesis-driven scientific manuscript.

2. This is a very common template for journal publications.

3. Use this framework when you have a hypothesis guiding your research and you either disprove or support it with your research.

4. For example, a research team testing the effect of a fertilizer on plant growth rates could have the hypothesis that the fertilizer will increase plant growth rates, and would thus publish with a hypothesis driven framework to share their findings.

2. Scientific: Not Hypothesis Driven

1. You conducted a qualitative study exploring the experience of first generation college
students at Penn State University (PSU). Since you did not have a hypothesis for this research, but a guiding question of “How do first-generation students navigate PSU?” you would write a non-hypothesis driven scientific manuscript.

2. As another example, a researcher wants to explore the potential for solar panel use in Kenya, so she would gather information about the area and the people there to make a recommendation. She does not need to have a hypothesis about whether solar panels will be successful or not.

3. Instead of a hypothesis, these manuscripts present data found in response to a series of driving questions.

4. This framework is appropriate for studies where you wish to explore a situation or concept but you are not seeking to support or disprove a hypothesis.

5. The biggest difference from a hypothesis driven paper is in the results and discussion section where several themes are discussed. Instead of a hypothesis, manuscripts with this framework present data found in response to a series of driving questions. Such exploratory studies are often open-ended.

3. Literature Review

1. You are part of a team who is examining the various ways the word “empowerment” is used in academic discourse. To publish your work you could write a literature review explaining the varied use of empowerment amongst published scholarly literature.

2. These literature reviews stand on their own, completely devoted to reviewing and summarizing the current literature on a particular topic and the direction that it is
going.
3. These are different from a literature review section in a manuscript because you will now summarize and analyze what is going on in the field and draw conclusions from it.
4. They are different from other research manuscripts because instead of putting forward a new argument, they synthesize and draw conclusions from current arguments.
5. Literature reviews are useful because they bring a large conversation about a topic into one place for others to read and understand efficiently. They also provide readers with high-quality sources about a topic.
6. The literature review can provide important insights on the best possible directions for new research on the topic.

4. Typology/Taxonomy

1. If you are conducting research on the various sustainable farming practices in the U.S. you could write a typology manuscript describing the characteristics of these practices.
2. This framework is used to discuss a variety of types of something such as approaches, technologies, or personalities.

3. One element that sets this framework apart is an explanation of assumptions that you have for your typology. You also need an explanation of the way you are going to go about discussing the types. It is often helpful to have a diagram that shows the relationships between all of the different types.

4. The heart of a typology/taxonomy manuscript is where you discuss all of the different types. For each type, you should have an additional diagram and an explanation. You can provide a case study, examples, a cost/benefit analysis (i.e. a SWOT analysis of strengths, weaknesses, opportunities and threats), and any deeper content you can provide on the type.


5. **Theoretical / New Models**

1. An example of a new model topic is how the PSU Council on Engaged Scholarship is developing a set of successful business models for engaged scholarship experiences and will share them through a published article.

2. These manuscripts are used to present a new way of analyzing a topic or understanding a pre-existing system.

3. These contain a literature review that discusses similar models and state assumptions of those models.

6. Challenges and Opportunities

1. This kind of manuscript is a call to action. It presents a current status of a situation, provides contextual and systemic information, and suggests means of improvement. Say you went through a grueling summer of prototyping small-scale solar dehydrators for a burgeoning market in India. A challenges and opportunities manuscript is a good format for you to share the challenges this endeavor faces but the exciting opportunities it holds.

7. Lessons Learned / Best Practices / Evidence-Based Practices

1. You just went through a yearlong process of developing a strong relationship with a community partner to integrate community-based learning projects into a marketing class on campus. You learned a lot from working with them and want to share your insights for others attempting the same thing. This is when you decide to write a manuscript about your lessons learned.


3. Other fields of research and practice are very context based so it is hard to describe best practices. Here is where you would describe lessons learned of evidence-based practices. This article by Dicks et al. (2013) takes into account a broad survey of expert opinions based on their experience to list 35 knowledge needs for pollinator conservationists. Dicks et al. (2013). Identifying key knowledge needs for evidence-based conservation of wild insect pollinators: A collaborative cross-sectoral exercise. *Insect Conservation and Diversity* 6, 435-446.
8. Design Principles

1. Say you’ve engineered a new solar desalination product that you want to share with others. This would call for a design principles framework. This framework is used to explain how to construct a product or the design principles of a product.


9. New Educational Tool

1. As a science education student, you just piloted a plant growth lesson plan using produce from a school’s garden to engage your students. Your students excelled in their exams compared to other classes, and they gave you great qualitative feedback on your lessons. You think this is a curriculum worth sharing with other educators!

2. Here is another example: Mok applied a flipped-classroom educational strategy in an

10. Opinion Piece

1. Present a topic unsupported by empirical evidence but still important to the field of research. Although similar to a literature review, it diverges in its more extensive discussion of your opinion.

2. An opinion article by Gurevitch and Padilla published an opinion article about the link between invasive species and native species extinction. They take into consideration other works, but the point of the article is to voice their opinion based on the synthesis of other work and to challenge other work. Gurevitch, J. & Padilla, D. K. (2004). Are invasive species a major cause of extinctions? *Trends in Ecology and Evolution, 19*(9), 470-474.

11. Case Study

1. This framework is used to provide case-specific information that colleagues can use to shape approaches or utilize as learning tools. A case could be a person, a group
of people, a town, an event, and other such single situations used to illustrate a thesis.


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**Sources and Additional Resources:**

1. Framing Your Paper—Joern Fischer
2. Article on Literature Reviews, Conceptual, and Theoretical Manuscripts (Must have library access)—*Human Resource Development Review*, March 2009 8: 120-130
3. Types of Articles that Journals Publish—Editage.com
4. Framing Manuscripts—Penn State Humanitarian Engineering and Social Entrepreneurship