

How to Practice a Piece of Music and Write a Journal Paper

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Performing music and preparing a research paper for publication have many similarities. Fundamentally, both can be viewed as comprising several layers. The steps to preparing a piece of music for a performance include:

1. Decoding the notes
2. Playing the notes at the proper tempo
3. Using the correct rhythm
4. Playing the notes with proper intonation, especially important for, but not limited to, stringed instruments
5. Using proper articulation
6. Using proper use of dynamics and phrasing
7. Breathe or bowing control
8. Continuity of playing from start to finish
9. Integrating all of the elements into a cohesive performance

It is impossible to practice each of these dimensions simultaneously as one prepares for a performance. Instead, one should decide what is being practiced, and focus on that single aspect during each run through of the piece. During step 9, integrating all of the elements, one is encouraged to attempt to put it all together in spite of the imperfections of the components in order to train to play all the way through without giving in to interruptions. Each practice session should end with this regardless of the progress. In this way, the music is built up from pieces and integrated into a whole that flows logically and without interruption.

Although there is not a one-to-one correspondence between the two, the preparation of a research paper follows a similar trajectory as the music preparation. Here are some guidelines for writing a paper, followed by a set of objectives for reading through the manuscript:

Create overall structure. This is best started by forming an outline, or choosing the core figures and data that you wish to include in the paper. I suggest writing a very terse outline followed by putting together a series of figures that tell the story of the outline. Powerpoint is the ideal home for a group of figures. You can edit them, move them around, and otherwise tweak them as necessary.

Do not do any formatting at the beginning of the process. Start by preparing two documents – one with text and one with figures. Print the figures so they can be easily referred to. Then type the text into a document with double spacing, 12-point font. Make no attempt at formatting until the end.

Create an introduction that motivates why the paper deserves to exist – what is new and different about this effort? What problem exists and how is it solved by the work in this paper?

Imagine that the paper is a courtroom trial – when general statements are made, there must be some evidence. That evidence will exist either as the data in your paper, or in the introduction as references to

previous work by yourself or others. If a paper has been published, the assumption is that it has been vetted and can be used as this “evidence.” Everything else in the paper, you have to prove with the data.

At each pass through the manuscript, the writer should seek only a few of the following objectives at a time, including (in no particular order):

1. Does the paper follow a logical path through the introduction, theory, experiment, presentation of data, discussion and conclusions?
2. Does the body of the paper support the original statement of the problem and solution?
3. Are sentences properly formed? Are they clearly stated without unnecessary dependent clauses?
4. Is there proper use of articles?
5. Can sentences be shortened – are there any redundancies, repetition, omissions?
6. Is there consistency between section headings and numbering, use of words such as “Fig.” or “Figure”?
7. Do figure captions support the figures without adding text that would be more appropriately contained in the text?
8. Are figures readable? Are font sizes appropriate to appear in the paper? Is brightness and contrast adequate for photographs and micrographs?
9. Do micrographs have scale bars and other important information?
10. Are tables adequately formatted?
11. Is adequate use of references made, and are they in the right places? Are they numbered correctly?
12. Does the abstract capture the essence of the problem and results without unnecessary detail?
13. Is the “Conclusions” section really about conclusions, or merely a rehash of the abstract? Instead, label that section “Summary and Conclusions,” and include a short summary, and then some new thought and conclusion that ties the paper together.
14. Are the references consistent in terms of capitalization, use of authors’ names, abbreviations of journal titles, etc. (Note that there are accepted abbreviations for journal names. Use these instead of making them up.) <http://library.caltech.edu/reference/abbreviations/>
15. Are any words misspelled?
16. Did you make proper use of “which” and “that”?
17. Did you use punctuation correctly, including commas and semicolons?
18. Do paragraphs start with a short introductory sentence?
19. Are paragraphs indented properly? (You must have one or the other, but not both: A blank line or an indent.)
20. Do you have a single or double space between each sentence consistently throughout?
21. Are headings the same font and type throughout?

This list could be much longer, but should give the flavor for the sort of rigor necessary for a quality paper submission. The bottom line: read and reread until you are past tired of doing so, and no more problems are found. Good luck with your performances and your publications!