Student writing and learning

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Early Career Workshop 2017

Modified after an EC Handout by Rachel Beane
How writing is often included in coursework

• Final research project at end of course (last day of classes?)
• Students complete this at the last possible moment
• You frantically grade at end of semester to meet deadline
• Minimal feedback returned to student, no chance for students to learn or iterate
What are our big picture goals for teaching writing?

• Allow students to revise work iteratively to learn how to improve their writing
• Encourage them to extend the time horizon for work
• Encourage them to learn to self-evaluate/edit in a real and meaningful way
• Teach them what the reader needs to interpret their writing
Plan carefully for your specific course and needs

• Is this a general science course and you want to teach good basic analysis and writing skills?
• Is this a majors course where you are trying to teach fundamental aspects of science writing?
• Is this a capstone course where you are emphasizing highly technical writing?
• What is the length and depth of the assignment?
• The nature of your assignment may influence the appropriate approach to take
Some thoughts and approaches

- Teach writing and your expectations explicitly
- Minimize line-by-line editing
- Rubrics
- Peer review
- Low-stakes short writing assignments
- Annotated bibliography
- Scaffolding long writing assignments
Teach writing explicitly

• When are students learning about good writing?
• It may be they haven’t had explicit training as often as you might think
• Take one lecture (or more) to teach what good writing means to you and why writing is important
• Emphasize the goals of writing and the needs of the reader
  • Highlight significance of problem
  • State a thesis
  • Clear and logical flow of ideas from one section to the next, etc.
• Highlight science/earth science formats and conventions, as students may be unfamiliar with these
• Cover citation style and give examples of why we do this
• Craft your assignment carefully and be explicit about your expectations
Minimize line-by-line editing

- Tempting to do this
- Often to justify our grades?
- Cons likely outweigh benefits
- This is overwhelming!
- Mixes the small and big problems
- Highlight one example of a problem rather than each instance
- Direct students to a writing center if there are extensive problems or...
- Sit down one-on-one to highlight issues

Use a rubric

### Research Paper Rubric

<table>
<thead>
<tr>
<th></th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content and Focus</strong></td>
<td>• Exceptionally clear, focused, interesting thesis.</td>
<td>• Clear thesis which maintains a consistent focus from beginning to end.</td>
<td>• Contains thesis but with inconsistent focus.</td>
<td>• Thesis statement lacks clarity and focus.</td>
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<tr>
<td></td>
<td>• Strong, rich supporting details and examples that prove thesis.</td>
<td>• Specific supporting details are present.</td>
<td>• Generalized supporting details that prove thesis.</td>
<td>• Inadequate or missing supporting details.</td>
</tr>
<tr>
<td></td>
<td>• A meaningful conclusion explaining the importance of the research and how it can be used.</td>
<td>• A clear conclusion as to why the research is important.</td>
<td>• Conclusion tends to summarize research.</td>
<td>• Missing a summarizing conclusion</td>
</tr>
<tr>
<td><strong>Organization</strong></td>
<td>• Strong introduction and conclusion.</td>
<td>• Clear introduction and conclusion.</td>
<td>• Introduction and conclusion is present but not clear.</td>
<td>• Unable to clearly identify introduction and conclusion.</td>
</tr>
<tr>
<td></td>
<td>• Consistent and coherent logical progression.</td>
<td>• Illustrates some consistency and shows some logical progression.</td>
<td>• Show some attempt of consistency and order.</td>
<td>• Lack of consistency and order.</td>
</tr>
<tr>
<td></td>
<td>• Uses clear and skillful transitions.</td>
<td>• Uses clear transitions.</td>
<td>• Paper shows attempt of transitions between paragraphs.</td>
<td>• Paper shows little or no attempt of transitions between paragraphs.</td>
</tr>
<tr>
<td><strong>Style</strong></td>
<td>• Written in formal language (avoids slang completely).</td>
<td>• Majority of paper written in formal language.</td>
<td>• Some use of formal language recognized, informal language is dominant.</td>
<td>• Paper frequently uses informal language.</td>
</tr>
<tr>
<td></td>
<td>• Elaborate and colorful language.</td>
<td>• Language appropriate to topic.</td>
<td>• Most language is inappropriate to topic.</td>
<td>• Language is not appropriate to topic.</td>
</tr>
<tr>
<td></td>
<td>• Consistently strong and varied sentence structure.</td>
<td>• Words convey intended message.</td>
<td>• Able to get vague idea of message.</td>
<td>• Message is unclear.</td>
</tr>
<tr>
<td></td>
<td>• Direct quotes support student’s ideas.</td>
<td>• Direct quotes support student’s ideas.</td>
<td>• Some parts of paper written in student’s own words.</td>
<td>• Majority of paper is plagiarized.</td>
</tr>
<tr>
<td></td>
<td>• Paper written in student’s own words.</td>
<td>• Majorily of paper written in student’s own words.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sources/Format</strong></td>
<td>Follows MLA guidelines:</td>
<td>Follows MLA Guidelines with few exceptions:</td>
<td>Inconsistent use of MLA style guidelines.</td>
<td>Fails to follow MLA style Guidelines.</td>
</tr>
<tr>
<td></td>
<td>• Uses 5 or more cited sources.</td>
<td>• 3–4 cited sources used.</td>
<td>• Less than 3 cited sources used.</td>
<td>• Less than 3 cited sources used.</td>
</tr>
<tr>
<td></td>
<td>• Sources meet the guidelines for types of sources.</td>
<td>• Sources meet the guidelines for types of sources.</td>
<td>• Majority of parenthetical documentation done incorrectly.</td>
<td>• Parenthetical documentation used incorrectly.</td>
</tr>
<tr>
<td></td>
<td>• All parenthetical documentation is MLA correct (author’s name pg. 31).</td>
<td>• Few errors noted in parenthetical documentation.</td>
<td>• Random MLA documentation.</td>
<td>• Works Cited page is not understandable.</td>
</tr>
<tr>
<td></td>
<td>• Works Cited page is MLA correct.</td>
<td>• Majority of Works Cited page is MLA correct.</td>
<td>• Rarely documents sources.</td>
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<tr>
<td></td>
<td>• All researched info is documented.</td>
<td>• Most research info is documented.</td>
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<tr>
<td><strong>Conventions</strong></td>
<td>Superior editing; Rarely makes errors in the following areas:</td>
<td>Careful editing; Makes few errors in the following areas:</td>
<td>Some evidence of editing:</td>
<td>Poor editing:</td>
</tr>
<tr>
<td></td>
<td>• Spelling and mechanics.</td>
<td>• Spelling and mechanics.</td>
<td>• Extensive spelling and grammatical errors.</td>
<td>• Spelling and grammatical errors make it difficult to read paper.</td>
</tr>
<tr>
<td></td>
<td>• Correct usage and grammar.</td>
<td>• Correct usage and grammar.</td>
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</tbody>
</table>

**Advantages**
- Sets clear expectations
- Allows students to focus on key writing concepts
- Makes grading faster/easier for you and more transparent for the student

**Considerations**
- How many focus items?
- How complex is the scaling?

Score: ______ / 4

Evaluated by: __________________________ Date: __________
Peer review of drafts

Pros:
• Students can learn better writing by editing their peers’ work
• Students may be more receptive to evaluation from their peers (but sometimes not!)
• Can save instructor time

Possible cons:
• Student evaluations may under or overshoot your own expectations, leading to confusion
• Students may not do a thoughtful review
• Students might be mean or insensitive

Issue clear guidelines about your expectations for the peer reviews. Consider collecting and editing reviews prior to returning comments. Consider grading the quality of the student review to add accountability.
Short, low-stakes writing assignments

- Allows practice and feedback without major grade implications
- Quick turn-around on feedback
- Could take numerous forms:
  - Short response to a scientific paper or news article
  - Writing a caption to a figure or image
  - An analysis of a geologic theme or concept
The annotated bibliography

- Students submit a brief overview of their paper and summarize their key sources
- Requires students to work in stages (due 2-3 weeks prior to paper?)
- Allows you to vet the project and sources ahead of time and head off potential problems
How to lengthen the time horizon: “Scaffolding” a longer writing assignment

• Getting students to take sufficient time on a writing assignment is challenging
• Lack of opportunity for revision based on comments
• Consider scaffolding longer assignments into manageable chunks (outline, introduction, results, etc. or however else you want to partition)
• Provide timely feedback on each section, focus on key issues
• Have students highlight for you the changes that they made for their revisions
Think, Pair, Share on a writing assignment you are considering

• On your own, brainstorm two or three content areas from your course that you could use for a student writing assignment
• Come up with the type of writing assignment that you would use for each topic
• Work with a partner to plan a writing assignment that you could give to your students with as much detail as possible
  • How long will they have to work on it?
  • What feedback, if any, would be provided along the way?
  • How will you assess this assignment?
  • How much is it worth (relative to their final grade)?
• Share your assignments with the group
Resources

• SERC Resource “Organizing Scientific writing”
• SERC Resource “A Simple Approach to Improve Student Writing”
• SERC Resource “Example of Writing Assignment on Plate Tectonics”
• A Resource for Further Resources