A Peer Review Writing Workshop in the Advanced Lab
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Goal:
To enhance students' scientific writing experience through critiquing peers manuscript-style reports.

For a peer review workshop to be successful, students need to be taught how to provide effective feedback.1 The first advanced lab peer review workshop at Denison University took place in Spring 2015.

Timeline of Selected Writing Assignments

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Assignment Prompt:
As you read the article “The Science of Scientific Writing,” make two separate lists: (1) The things you think are important in the article and (2) the things you find interesting about the article. These should be typed, printed, and brought to class. They will be collected and graded as +/-.

Class Exercise:
- “Pair and Share” activity - groups of 2-3 compile “Top 4 Most Important” lists, share with class
- Summarize and discuss manuscript style lab reports and expectations for Phys 312

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- Summarize and discuss manuscript style lab reports and expectations for Phys 312, format of Peer Review Workshop

Peer Review Workshop

- Each student reviews one peer’s Report 2 draft (pairings chosen by instructor)
  - Read and comment prior to workshop
  - Provide 1-2 paragraph summary of comments
- WORKSHOP: Students spend ~20 min per paper
  1. Reviewer begins with a few positive aspects
  2. Reviewer DESCRIBES/ SUMMARIZES the experiment and findings
  3. Discuss positive aspects and suggestions for improvement or rethinking
  4. Questions reviewer has for author & vice versa
- Instructor’s Role
  - Thoughtful student pairings
  - Remind students of guidelines: keep them on track
  - Mitigate disagreements

Samples of Peer Feedback

Positive Comments:
“... recap uncertainty methods?”

Construcive Criticism:
“...“quantitative/qualitative” is too vague.”

Outcomes
- Students provided overall constructive and thoughtful peer feedback
- Several students commented that they learned more about themselves as writers by reading and peer reviewing their classmates’ papers
- The peer reviewed reports were on average the strongest reports of the three that were written.
- Peer review workshop saved the instructor many hours of time reading and providing feedback on individual drafts

Improvements
- Workshop groups of 3 instead of 2
  - Provide built-in mechanism for reviewer to describe/summarize experiment (#2 in Workshop process)
- Stronger (grade?) incentive for students to provide complete drafts for review
  - More feedback on data/uncertainty analysis

References
1. J. C. Bean, Engaging Students in Science: A Workshop (La Jolla, CA, 1994, pp. 295-302).

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Denison University Writing Committee