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Teaching Math 464 WI - History of Mathematics every Spring since 1998

The writing goal of my WI course is that students learn how to write more or less self-contained mathematical exposition for an audience at their senior-level of mathematical training or beyond. My class size averages 12-15 students. Here, I only address general writing skills, omitting what I cover about the technical analysis and explication skills specific to mathematics. I have noticed that my students write surprisingly insightful peer reviews later in the course after they have been through an extensive revision process for their first paper. The assignment below is an attempt to encourage the development of those insights as the course begins.

A Challenge:

In spite of their previous training in writing, my experience is that at the beginning of my course 80-90% of my students demonstrate an informal style of writing and seem to possess weak revision skills. In short, they tend to write the way they speak and rarely revise or proofread their work.

One Response:

Since improvement of an informal style and the development of revision skills require self-editing, this assignment is designed to expose student editing skills, to see just how carefully they are trained to closely criticize writing in general. If they can edit a peer's writing well, they have the skills to edit their own writing well. This is a low stakes (small number of grade points, and they are responding to someone else's writing) early assignment, due the next day of class. I give them a short paragraph or two from the introduction in the first draft of a previous student's paper, paragraphs which reflect the weaknesses mentioned above. (Since I have taught this class many times before, I have many first drafts to draw from, and starting last year also have written student consents to so use their class work. You may have other rich resources of student error to choose from.) The assignment is (1) to mark up by hand (usually in red ink) the given paragraphs, remarking on and asking questions about clarity, completeness, composition, and so on, in addition to the bare essentials of grammar and spelling, and then (2) to type 1-2 pages (no larger than 12 pt. font, and no wider than 1 inch margins) discussing more fully everything they have noted, including especially questions they have and their writing recommendations to the author of the paragraphs. I then grade these and return them the following day of class. Any superficiality in their analysis reveals itself. This is a repeatable assignment; just swap out the paragraphs. Since this assignment does not allow students a chance to revise and resubmit their work, I recommend immediately repeating the assignment at least once, so they can apply what they have learned from the first iteration. Afterward, I tie up these lessons by telling them I expect them to complete this level of editing before I see any of their drafts going forward.

A challenge:

I teach a senior synthesis course where the goal of the course is to challenge students to synthesize disparate scientific facts into a single thesis. The main obstacle I face in the course is teaching technical writing. Writing in the sciences is significantly different than the style of writing that students typically have been exposed to. However, grammatical and similar issues also are a significant issue that makes teaching the discipline specific more difficult.

One response:

I tackle these issues using the same solution: low-stakes assignments throughout the semester before the final high-stakes assignment. Students are required to write 6 small papers and the lowest score is dropped (a total of 100 points out of 300 for the course). This serves the purpose of allowing feedback to the students on technical writing and matters related to the synthesis of material.

To tackle grammatical issues I use the first assignment as an “attention grabber” I am EXTREMELY harsh in my grading of the first assignment (especially grammatical issues). This gets the students’ attention and grammatical issues quickly disappear. I find that the majority of students can write well, but do not necessarily put in the effort at the start of the course. For example, after the first paper is graded I ask how many had proofread their paper; invariably only 2 or 3 out of 20 students read their paper a second time. The low-stake nature of these assignments means that it does not affect the students’ grade; but does serve to get their attention. This allows me to focus more on the main focus of the course.
