

Role of FYS and CCC

Writing in the discipline

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Premises

- The majority of students have done surprisingly little formal writing in high school.
- FYS and CCC introduce academic writing.
 - Academic sources, referencing, thesis-driven, etc.
- Many of these skills are transferrable, but college students, even seniors, are beginners in the discipline.
 - We should not expect them to write the way an expert writes, nor should we expect our FY writing program to make them able to do so.

My Observations

- **Context:** research proposals, research reports, writing results of teaching labs in journal format (juniors and seniors)
- Students understand the purpose of a literature review and know how to do it.
- Students understand academic sources. } evidence
- Students know how to reference. } (gain understanding)
- Students can usually ^{thesis} expand the idea of a thesis-driven essay to a research question. They also understand, with help, that a journal article is, in part, persuasive writing. } argument
- Students know how to organize paragraphs, etc. } structure
- Students have a range of skill in expression.
- *The majority of students who have difficulty writing in chemistry are actually struggling with understanding the content.*

We want to help students

- Understand the experimental plan and the data produced (or expected.)
- Understand how to do the experiment (i.e. what to actually do with their hands in the lab.)
- Analyze the data, including whether the data answer the experimental question and whether the data are statistically significant. *evidence analysis*
- Write up the results clearly and compellingly, usually in the form of a journal manuscript or a research proposal. *argument*

Parts of a Scientific Manuscript

- **Abstract:** 250 word summary, including experimental goal, method, and important results *orienting, motive*
- **Introduction:** sets the context and relevance, includes the overarching research question, references previous work *thesis*
- **Materials and Methods:** experimental details, particular language and type of discourse required
- **Results and Discussion:** sometimes separated; draws conclusions, again referencing previous work *evidence, analysis*
- **References**
- *Writing an entire manuscript is a large undertaking.*
- *A detailed prompt is extremely helpful, as is focusing on one part at a time.*

The Bottom Line

- A well-constructed, detailed prompt
 - can encourage more complete understanding of the material, which frames written work.
 - helps students produce quality assignments.
 - makes assignments much easier to grade.
- FYS and CCC are not designed to do this for the discipline, nor should they be expected to.
- We can expect college-level writing skills from our students, but we have to be prepared to guide them in the discipline, especially in ensuring they have a complete understanding of the content about which they are writing.