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Jeremy Dodsworth
jdodsworth@csusb.edu

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Recommended Citation

Dodsworth, Jeremy, "Developing a Writing Intensive (WI) Microbiology Lab Course" (2020). *Q2S Enhancing Pedagogy*. 95.
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Developing a Writing Intensive (WI) Microbiology Lab Course

Jeremy Dodsworth, CSUSB Department of Biology

Motivations

Writing intensive (WI) requirements on semester system

- Two WI courses will be required, with at least one at the upper division
- One WI course can be outside of GE (e.g. in major)

Practical motivation: Having WI courses in the Biology major will allow students to satisfy the WI requirement and a major requirement/elective with one course.

Pedagogical motivation: A WI course in the major will help students develop discipline-specific critical thinking and writing skills.

CSUSB WI Course Requirements

1. Writing is comprehensively integrated into the course and tied to course objectives and learning outcomes.
2. Writing comprises a significant part of the course work and reflects genres and writing activities appropriate to the course and discipline.
3. Writing is explained and supported in the course
4. Writing assignments are scaffolded.
5. Writing is supported by feedback and opportunities for revision.

Plans for WI Designation of Biol 3200 Microbiology Course

"Endospore-former" project (Labs 3-10)

Week 3: Read and discuss in class a primary research article describing a new species.

Week 5: Read a review article on endospore formation and write a short summary.

Week 10: Development of rubric for report in class.

Week 12: First draft due. Students perform a written peer review (summary document and written comments on draft) of first draft.

Week 13: Final report due.

"Isolate" project (Labs 8-15)

Week 6: Assignment to find a literature article on the environment that students want to sample from and summarize types of microbes present.

Week 7: Short prospectus on plans for their project (where to sample from, what kind of media to use).

Week 15: Oral presentation on their project to other students.

Finals week: Final report, in a "microbe-wiki" format, on their isolate project.

Other assignments

Week 1: Finding and summarizing a popular press article on microbiology. Students must indicate what they hope to learn in class that might help them understand the article better.

Throughout the class: Students maintain a laboratory notebook, which is collected and graded twice during the term.

Week 15: Follow-up summary on a popular press article on microbiology, where students must discuss how the course better helped them to understand the article.

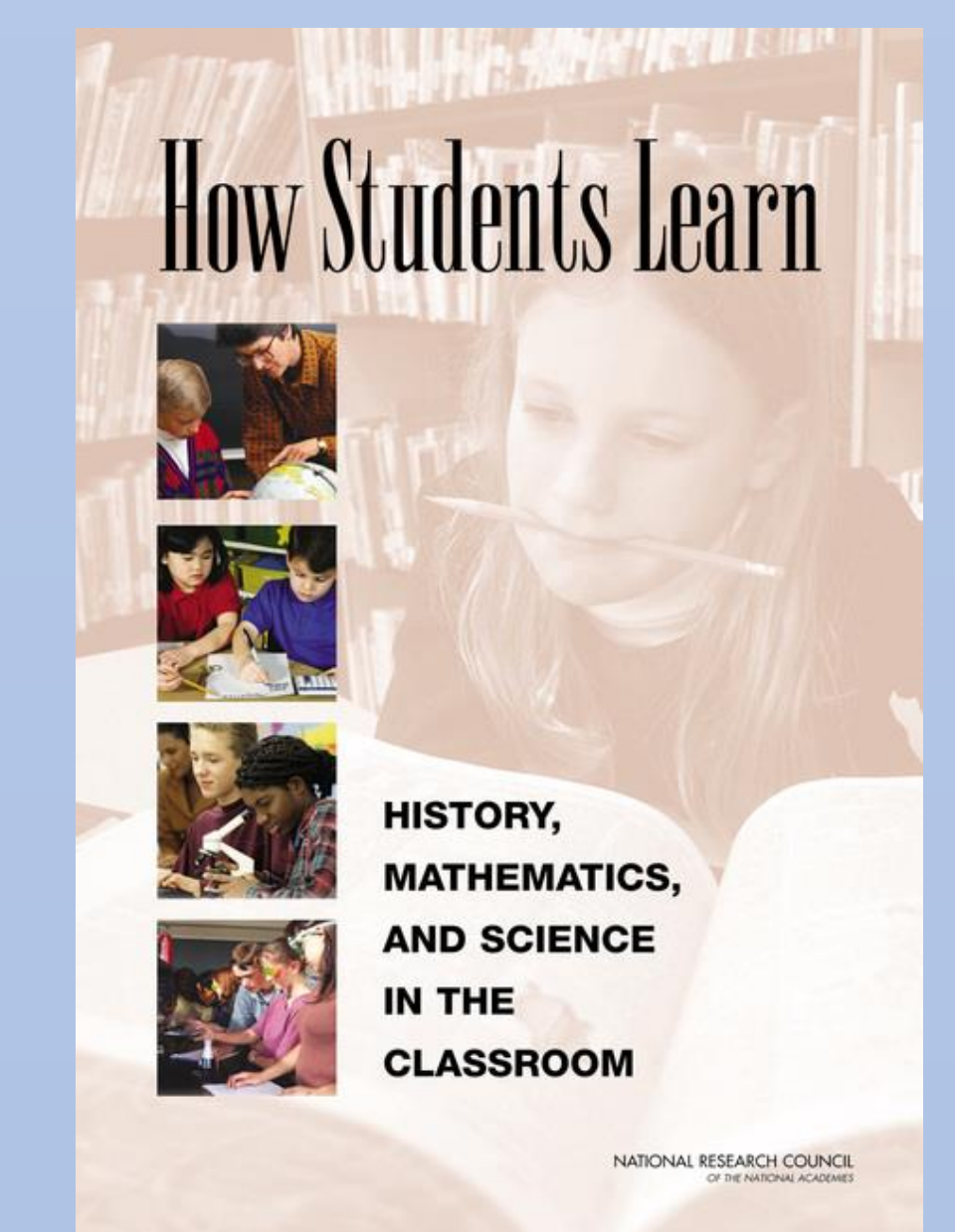
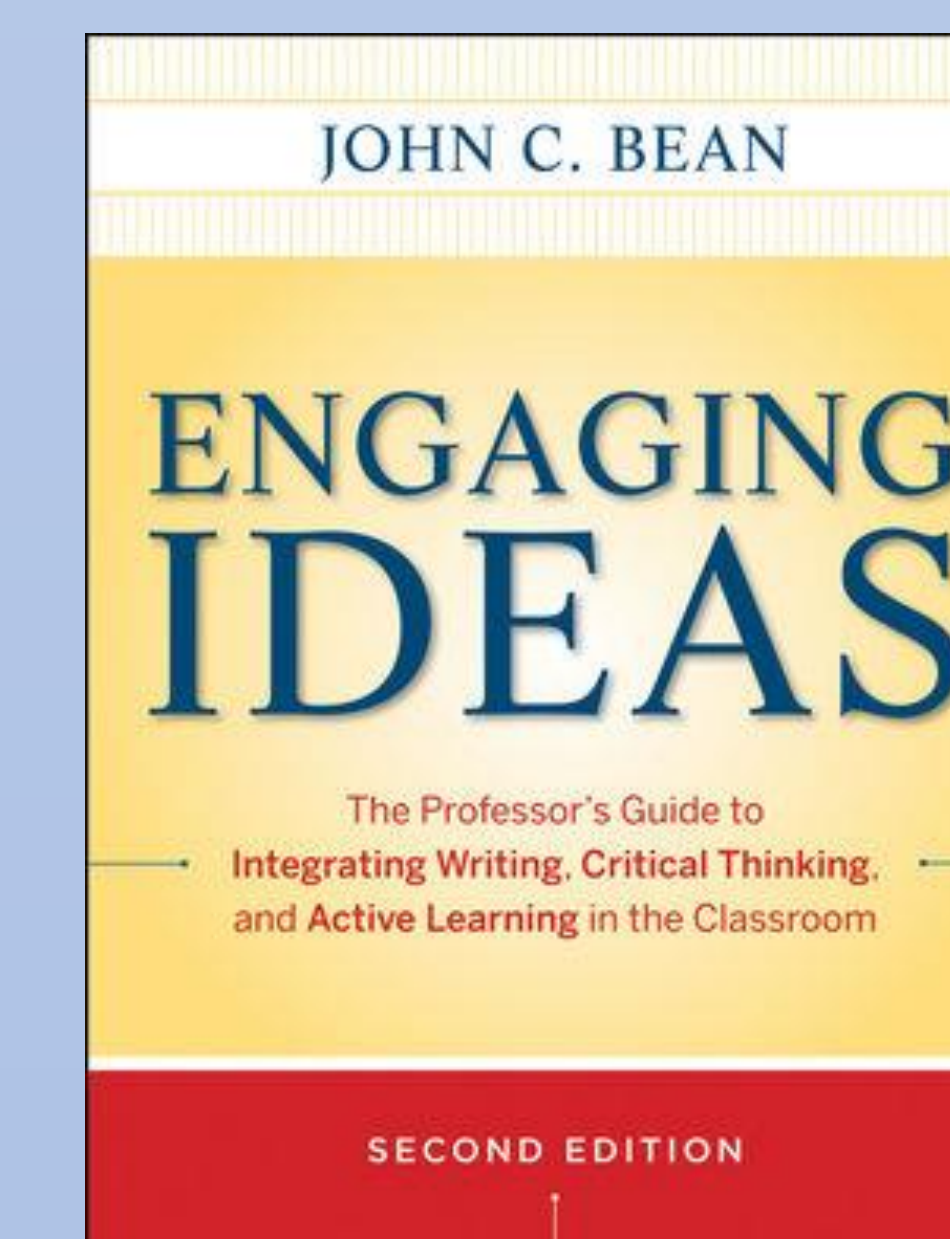
Adaptation of the Course Assignments/Activities to Satisfy WI Requirements

The upper-division Microbiology course (Biol 320) currently has two major projects in the laboratory section: isolation and identification of an endospore-forming microbe from a soil sample of their choice ("Endospore-former project"), and isolation and identification of a microbe from any sample of their choice ("Isolate project"). For each of these lab projects, which comprise the majority of the laboratory activities in the course, students write a final report in a primary literature format. Students also maintain a laboratory notebook and write two summaries of popular-press articles on microbiology in the news. These assignments comprise 20% of the final course grade, and support important learning outcomes of the course: Be able to independently research topics in microbiology and evaluate primary and secondary literature and popular press articles on microbiology; Effectively plan and execute laboratory procedures for the growth, isolation and identification of microorganisms; Evaluate the results of a hypothesis driven experiment.

Proposed changes to the assignments and structure in the semester system (Biol 3200) to satisfy WI requirements will emphasize scaffolding of the two major writing assignments and writing in multiple formats/genres, giving opportunities for feedback and revision.

- **"Endospore-former" project:** Early assignments will introduce students to primary and secondary literature formats and give students experience in summarizing others' research, which will be useful in the introduction and the formatting of their report. Peer review will allow a chance to receive feedback and revise their work. Students will write in primary research and peer review formats/genres.
- **"Isolate" project:** Early assignments will allow students to receive feedback from the instructor regarding their chosen topic and literature resources available for the project. The final "report" is intended for a broader audience ("Microbe-wiki" format) and will be supported by feedback from oral presentation of their results in the final weeks of lab.

Resources/References



Acknowledgements

CSUSB Q2S Enhanced Pedagogy Funding; ISSUES-X Grant supported by NSF IUSE Program #1727086