Implementing a Graduate-level Data Information Literacy Curriculum at Oregon State University: Approach, Outcomes and Lessons Learned

Amanda L. Whitmire
Oregon State University

Follow this and additional works at: https://escholarship.umassmed.edu/escience_symposium

Part of the Information Literacy Commons

This work is licensed under a Creative Commons Attribution-Noncommercial 3.0 License
Students were eager to learn about metadata, both in terms of how to use them to meet specific learning outcomes, and questions about how well sessions prepared them. Students were given the opportunity to assess their learning and experience throughout the course: twice during the course: once at half-way through, and twice during the course: once at half-way through, and once at the end of the course.

Approximately 11 students, including three faculty members, participated in the course. Demographics are as follows: six students from the College of Public Health and Human Sciences, two from the College of Forestry, and one each from the Colleges of Veterinary Medicine, Science, and Agriculture. Student degree paths ranged from non-thesis master's to PhD. All but one of the students having a very well defined thesis research project already planned and others much less so.

Where I Can Improve

Communicating purpose and expected outcomes of the Data Curation Profile

"I'm still not sure I understand what they are for and about."

Reducing redundancy between lectures, perhaps by explaining important concepts in different ways.

"I would have liked more [on this]."

Be more cognizant of student knowledge and experience levels

"This is all new information to me and I don't understand," said one student.

"I really am engaged in class."

Balancing needs of students from disparate disciplines

"I expect to get more [on this]."

Hands-on activities in class and in the computer lab

"I personally enjoyed the hands-on elements the most."

More hands-on activities in class and in the computer lab

"I personally enjoyed the hands-on elements the most."

Incorporate more case studies

"Doing case studies with existing databases could be helpful."

Guest speakers

"I liked having the guest speakers share about their area of expertise.

Where Students Liked

Best practices for data storage, backup and security, including local resources

"[Metadata issues, lesson and hands-on activities]... were very practical and useful."

File-naming and folder organization strategies

"... was very practical and useful."

Hands-on activities in class and in the computer lab

"I liked the active laboratory sections."

Hearing examples and case studies from real life

"I liked hearing about other people's data, their errors, and successes."

Metadata, lesson and hands-on activities

"I liked learning about metadata issues, especially how they're what I struggle with the most."

Guest speakers

"I liked having the guest speakers share about their area of expertise.

References


Acknowledgments

The development of graduate-level research data management courses is a team effort. I gratefully acknowledge my colleagues from the Lamar Soutter Library at the University of Edinburgh for sharing their education materials openly. I thank the University of Massachusetts Medical School (UMMS), DataONE, and EDINA and Data Services Library for help with designing student assessments. I am very grateful to Nancy LaPelle and guests for feedback, ideas and inspiration. I recognize that I can make improvements in this area to get students more engaged.

AMANDA L. WHITMIRE, Ph.D. - Assistant Professor & Data Management Specialist

ORLEANS UNIVERSITY LIBRARIES & PRESS

Implementing a graduate-level data information literacy curriculum at Oregon State University

Teaching Objective

Enable graduate students to acquire foundational knowledge and skills in selected data information literacy (DIL) core competencies that would support long-term habits in planning, management, preservation and sharing of research data.

Approach

Core elements centered on developing effective teaching strategies for DIL core competencies.

Course Characteristics

Description: Careful examination of all aspects of research data management best practices; open to students of all disciplines. This 2-credit course was designed to incorporate substantial active learning approaches; lecture was punctuated by individual and group activities. Significant focus on student participation and engagement. The midterm exam was an abbreviated Data Curation Profile, and the final exam was a data management plan. See poster supplementary materials for course syllabus (detailed course description, assignments, grading methods, weekly schedule and readings), lesson plans and evaluation content.

Demographics: 11 students, including three faculty members. The disciplinary range of the students was broad: six students from the College of Public Health and Human Sciences, two from the College of Forestry, and one each from the Colleges of Veterinary Medicine, Science, and Agriculture. Student degree paths ranged from non-thesis master’s to PhD. All but one of the students having a very well defined thesis research project already planned and others much less so.

Assessment: Students were anonymously surveyed (qualitative) twice during the course: once at half-way through, and again during the final week of classes. I asked targeted questions about how well sessions prepared them to meet specific learning outcomes, and requested written feedback on what they liked most and least about the course content.

How Will I Change the Course Next Year?

Connect students & content to the “real world”! Not surprisingly, the students most enjoyed aspects of the course that involved the “real world.” This included hands-on activities in class, opportunities to learn about software tools and resources in the computer lab, examining case studies in data management success and failure, and having guest lecturers visit the class. I need to incorporate more real-world case study content. One student suggested that I use a real research project as a case study that we follow across topics throughout the course. Great idea!

More hands-on time with metadata: Students were eager to learn about metadata, both in terms of theory and practical tools and methods for creating it. We had a computer lab period devoted to metadata tools (Cetelecia and DataUP, taught by our Metadata Librarian), but the students wanted more. Metadata format and creation are very discipline-specific; this is one area where I was less successful in meeting the learning needs of my discipline-diverse students. Next year, I’ll add another computer lab to give the students more time and experience with the tools, and design an assignment that will clarify the creation process and products.

Use the data management plan as framework: The goal of the course is to give students knowledge and skills in data management that apply directly to their research workflow. Their final assignment, a data management plan (DMP), was the culmination of the class and was intended to provide them with a guiding document for the remainder of their graduate research. While I verbally related course content to the DMP throughout the course, they didn’t make the connection. A better approach may be to have them create concepts of the DMP as we go. This would better facilitate the self-directed process of applying largely discipline-agnostic course content to their highly individual research.

Have a “data day!” This is another student suggestion that I really like. They said, “I think having a day in which we bring in our data set (if possible) and be able to incorporate some of the concepts we talked about in class with management, naming, security, etc.” I am considering whether to have a class session devoted to this, or if I should incorporate a weekly “office hours” in a library computer lab to give students this kind of opportunity.

Split the course? There were a few suggestions to offer [at least] two versions of this course, each one for humanities/social sciences and natural/applied sciences. This makes sense on many levels, but involves doubling my teaching workload. It’s not clear that this is realistic at this time, but I am open to the idea.

More active learning: While I did employ several active learning approaches throughout the term, I recognize that I can make improvements in this area to get students more engaged.

Contact

amanda.whitmire@oregonstate.edu

@oregonstate.edu

Innovation | Heart | Ideas

AMANDA L. WHITMIRE, Ph.D. - Assistant Professor & Data Management Specialist