Instructional Fair
Teaching and Learning Strategies Collection
Thursday, April 6, 2017

Co-sponsored by the Center for Excellence in Teaching and Learning and the Senate Committee on Teaching and Learning
Instructional Fair
Teaching and Learning Strategies Collection

On April 6, 2017, 31 faculty and staff presented ideas in how to best teach and promote student learning in the Oakland University classroom and beyond. This poster presentation format brought together multiple disciplines and perspectives, and presenters offered these handouts for attendees to collect and use to inform their teaching. These handouts are compiled in this collection in the order they were placed at the Instructional Fair, grouped together by discipline and concept.

- Circles of Impact: Helping Students Prioritize Content for Quizzes (Allar)
- What Is Your Superpower? (A Powerful Ice-Breaker) (Spencer)
- Cultural Assessment Panel (Gajewski)
- Songs in the Teaching of Modern Languages (Pieri)
- Cultural Extra Credit (Ploof)
- Analysis and Synthesis: Learn with Legos (Tess-Navarro)
- A Model for Multidisciplinary Service-Learning (Tess-Navarro, Jostock, & Burton)
- Using the Mindfulness Bell (Jostock)
- Academic Engagement & Student Persistence (Nisbett & Malley)
- Cased-Based Teaching (Jusela)
- Use of Case Studies as a Teaching and Learning Tool (Varughese)
- Molecular LEGOS (Martic)
- Active Learning Classroom Demonstrations to Get the Point Across (Kobus)
- Group Work with Google Drive (Rutledge)
- The Book Resource: Moodle’s Best Kept Secret (Moore, Arnold, & Bongers)
- Class Texts as an Effective Way to Communicate with Students (Riha)
- Collaborative Learning in Moodle (Todoroff)
- Using Revision Plans to Enhance Student Engagement with Instructor Feedback (Gabrion)
- Interpreting and Understanding Secondary Research: Teaching Students How to Become Consumers of Scholarly Research (Klein)
- Peer Paired Problems (Hosch & Yates)
- Promoting Deeper Learning Through Student-Written Questions (Nyland)

OU Libraries Resource Handouts
- Teaching Research Online Through Targeted Moodle Modules
- Research Unbound: An Online Library Orientation for Transfer Students
- LIB 250: A General Education Learning Option on Effective Research in the Information Age
- Online Library Instruction for WRT 160: A Flipped Option
- Teaching Research Online Through Targeted Moodle Modules
- Collaborative Assignment Design: Utilizing Your Librarian
- OU Libraries’ Multimedia Databases: Rich Resources for Teaching & Learning
- Primary Resources for Engaging Instructional Environments
- Incorporating Research Data Management into Curriculum
Circles of Impact: Helping Students Prioritize Content for Quizzes

Gregory Allar  International Studies Program  allar@oakland.edu
In-class active learning strategy

Learning Outcomes:
- To prioritize information into one of three circles;
- To justify rationale for decisions

Overview:

Last fall the students had been scoring just average on unit quizzes, yet they were actively participating in all class discussions. I decided that before the next internet quiz that I would question what they felt was important to understand in the materials to be covered in the quiz.

Step-by-Step Instructions

I split the class into two groups, and assigned each group to review one set of materials. I then asked each group to classify the key points in the materials into one of the three circles:

1. Worth being familiar with
2. Important to know and to do
3. Enduring understanding.

I gave them half the class period, roughly 40 minutes to complete this assignment. Once they had assigned all the terms or concepts into one of the three circles, I asked the first group to share their results with the class. Members of the other group and I challenged them to justify why each term or concept was assigned to the circle noted. This forced the presenting group to rethink or reaffirm their rationale. As a class, we came to one set of conclusions. I conducted the same procedure with the other group. This was a very entertaining and enlightening class!

Course Information: IS 260 Perspectives on Russia (~25 students) This course is discussion-based. It examines the intellectual, ideological, cultural, social, and political changes that have evolved in Russia throughout the centuries.

Ease of Application to Other Courses  EASY  MODERATE  DIFFICULT

Additional Comments:
I am more inclined to develop strategies, and employ graphics, in accordance with the Backward Design model from Grant Wiggins and Jay McTighe. In their book, Understanding by Design, they outline the three steps of backward design:

1. Identify desired results (i.e., what do we want students to know?)
2. Determine acceptable evidence (i.e., how do we know that they know it?)
3. Plan instructional experiences and learning interactions (i.e., how do we provide experiences for them to learn what we want them to?)

What Is Your Superpower? (A Powerful Ice-Breaker)
Kathleen Walsh Spencer, School of Nursing, kwspence@oakland.edu

Learning Outcomes
- The student engages with other students in online community
- The student provides a writing sample that is not cut-and-pasted from other courses
- The student identifies personal and professional characteristics that relate new career roles
- The student is familiarized with basic Moodle skills such as online forum and posting their photo

Overview
I noticed that my students were putting little thought into the Ice-Breaker introductions at the beginning of every semester. The Ice-Breakers, in general, are helpful to me because they give an idea of the students’ interest in the course, some demographic information, and a baseline sample of their writing. I noticed that students were “cut and pasting” their introduction from semester to semester, that they were not learning anything new about their peers, and that I wasn’t getting an adequate writing sample for early “intervention” to the Writing Center, if needed.

Step-by-Step Instructions
1. During the first week of the course, students are given guidelines for what information to post in the Ice-Breaker forum.
2. Students are required to respond to at least five other students.
3. Students are required to post their Mug Shot on Moodle.
4. Students receive points toward their final grade.
5. I post an Ice-Breaker and respond to every student.

Course Information
Students are in NRS 221, a beginning course for our basic students, and often the very first course at O.U. for our online second-degree students. The assignment instructions are:

Hello Scholars,
It is important for me to get to know you a little bit, and for you to get to know each other. I would like you to write, in paragraph form, the answers to the following questions. Please limit your response to 500 words. When you put your Post into the forum, use your full name (and the name of your superhero) for the title for the post (ex. Kathleen Spencer, Mighty Mouse). Do not upload an attachment, but cut and paste your post into the forum. This way, we don’t all have to open attachments to read the posts.
I would like you to read all of the posts and respond to five. Your responses are due October 31. Please respond to introductions that have not had any responses before you add a response to an introduction that has already been responded to.
Please introduce yourself by letting us know:
1. Which program you are in: Accelerated Second Degree or Basic BSN?
2. Why you chose nursing as a career/future plans and goals
3. If you were a SuperHero, which one would you be and why. What are your super powers? How are your super powers helpful to you as a nurse?
Be sure to upload a photo of yourself so your "mug shot" appears next to your email. I want the photo to be just of your face, with no one else in the photograph. You can look on Moodle for instructions. I look forward to reading about you.

Ease of Application to Other Courses  

**EASY**  
**MODERATE**  
**DIFFICULT**

**Additional Comments**

The biggest advantage of this Ice-Breaker is that students reflect on “what superpowers *do I have*, and what superpowers does a nurse *need*?” Since they are just beginning students and starting to identify with the role of “nurse”, it is valuable that they ponder the traits that are characteristic of nurses in general, and the kind of nurses they want to be. This is an opportunity for the students to recognize their own strengths, and to view the professional from a position of power and advocacy for their patients and community.

This assignment also gives me a ‘heads up’ if a student is struggling with Moodle or with formulating and writing a cohesive paragraph. Early in the course, I am able to identify students who need writing assistance and can refer them to the appropriate resources on campus.

**Resources**


Cultural Assessment Panel
In-Class Transformational Active Learning Strategy
Ellen Gajewski, School of Nursing, emgajews@oakland.edu

Overview
We live in times of a global society. Students of different cultures have been enrolling in U.S. institutions of higher education in increasing numbers over the last 10 years. There are many benefits of a culturally diverse student body. Higher education should respond to the concept of a globalized society by promoting cross-cultural training and collaboration in a world where this will now be a necessity. The Cultural Assessment Panel is a transformational active learning strategy that promotes the discussion of cultural differences through the voices of volunteer students from the class who are from different cultural backgrounds. It provides real life perspectives from human beings rather than reading about stereotypical cultural expectancies. In addition, the panel has been an opportunity to promote inclusiveness in the classroom for some students who have felt marginalized in the program. The panel members have made the students aware of cultural differences in a positive manner because they are listening to the stories of the friends in their class.

Learning Outcomes
Students will:
- Incorporate cultural awareness of differences that exist within and across cultural groups.
- Recognize the importance of understanding personal biases about people from other cultures.
- Demonstrate the desire to respond in a culturally competent manner during clinical encounters.

Step-by-Step Instructions
1. Students fill out a Culture Questionnaire that assesses their own cultural beliefs. The students are asked if they would be willing to share their cultural beliefs with the class.
2. Prior to the day of the panel, students listen to an audiotaped lecture on Cultural Assessment and Cultural Competence in the Healthcare Setting.
3. On the day of the panel, the student volunteers sit in the front of the classroom and discuss the following topics with the class in relation to their cultural beliefs:
   - What cultural group do you belong to?
   - How long have you lived in the United States if you were not born here?
   - What are differences in your cultural beliefs in comparison to western cultural beliefs?
   - What are differences in your cultural beliefs in relation to the healthcare system?
   - How can nursing students provide individualized care to someone from your culture?
4. Group discourse with reflection on cultural awareness based on one's prior frame of reference.

Course Information
I have implemented this teaching strategy in the Nursing Health Assessment course. The students are learning about performing a cultural assessment on their patients in order to provide culturally competent care.
The class is comprised of undergraduate students in the accelerated second degree nursing program. Students are in a cohort that will progress together for one year in the program. This is the first 7-week course in the program so the students are just getting to know each other.

The panel takes place on the last day of the course before the final exam in order for the students to be comfortable enough to share personal stories.

The panel usually consists of 10-15 students. The cohort of students is a very culturally diverse group of students. There are around 55-60 students in each cohort and usually at least 1/4 of the students are from different cultural backgrounds and are willing to share their beliefs. The students come from many different backgrounds and have included cultures representing Croatia, India, Iraq, Nigeria, Poland, Puerto Rico, Romania, Russia, South Korea, China, Egypt, Japan, and Thailand.

### Ease of Application to Other Courses

| EASY | MODERATE | DIFFICULT |

### Additional Comments

The stories shared are candid self-revelations of how it feels to live and interact with society when feeling like an outsider. The discussions encourage self-awareness of the students' thoughts and feelings regarding different cultures. Issues of culture are charged topics that people hesitate to address. It is important to develop a safe environment in the classroom to discuss diversity. Following the panel discussion, a wall is broken down. Students exchange tears and hugs and acknowledge hidden feelings. Stories touch the lives of classmates and there is both intellectual and emotional growth. Panel members encourage classmates to see each person as a unique individual asking questions to gain insight about the culture. College can feel very impersonal for students of a different culture and opening up the conversation about cultural beliefs can show that their experiences and beliefs are valued.

### Resources


Songs in the Teaching of Modern Languages
In-class active learning
Caterina Pieri, pieri@oakland.edu, Modern Languages and Literatures

Learning Outcomes
- Demonstrate level appropriate listening-comprehension skills
- Demonstrate clear pronunciation
- Recognize the role of music in world cultures
- Demonstrate a broad understanding of the target culture

Overview: Music is proven to be closely related to second language acquisition. It has the unique abilities of making us happier, helping us connect with others, moving us both physically and emotionally, and helping us recall a primal and universal instinct, while conveying a specific message related to its culture of origin.

Step-by-Step Instructions
1. Choose 6 songs with at least 2 of the following characteristics:
   a. culturally significant
   b. with multiple examples of a specific grammar topic
   c. with relevant vocabulary
   d. sung clearly, and at an adequate speed
   e. with a memorable melody
   f. with a simple choreography
2. Create one or more activities based on each song, for instance:
   a. filling blanks with vocabulary
   b. filling blanks with prefixes and suffixes
   c. conjugating verbs
   d. underlining all instances of one element (articles, prepositions, pronouns, etc.)
   e. critical written or oral analysis
   f. karaoke
   g. dancing (must be very simple and relevant to the target culture)
3. Implement your activities spread out during the course of the semester

Course Information: IT 114, Introduction to Italian Language and Culture I; 2 sections with a total of 38 students; activities took place during the whole semester of fall 2015.

Ease of Application to Other Courses
- Easy
- Moderate
- Difficult

Additional Comments: These activities are amusing and educational; they improve student retention by helping the instructor build a friendly environment in their classrooms.

Resources:
Visit lyricstraining.com for a huge collection of international music video activities.
Spanish Extra Credit for Introductory Levels
Maria Ploof, ploof@oakland.edu
Department of Modern Languages and Literatures
Active Learning Strategy

Learning Outcomes
Students will:
• investigate a cultural topic of choice at more in-depth level
• reflect on their own learning

Overview
Desire to learn about another culture is often what draws students to study another language; however, there never seems to be enough time to sufficiently cover cultural topics in-depth at the introductory levels. For this reason, I offer a cultural extra credit assignment, a composition, for each chapter that we study in Spanish. Students submit work via Moodle.

Step-by-Step Instructions
For each chapter covered in a semester, I post an extra credit assignment worth 5 pts. on Moodle. The assignment is basically the same: Write a 1.5 to 2-page composition (in English for SPN114, in Spanish for SPN115 and above) about a given topic, using a specific format, including at least three sources (no Wikipedia).

I give students 2 or 3 topic options. One of the options is normally to write about a cultural aspect of the country mentioned in the chapter. For example: "Write about a cultural aspect of Ecuador (its food, politics, music, etc.)" I leave the topic broad so that students can include any relevant personal interest about, or experience with, the topic. The other topic is usually more specific: "Write about the history of the tango."

I post a sample essay on Moodle so that students have a template and know the type of information I am looking for. I ask students to include their own personal reflections on the work and how it is relevant to their lives. Students have from the start of the chapter to the day before the chapter test to submit their work online. No late work is accepted. I only take away points if the format is not followed and/or sources are not cited, or if the grammar or information is particularly bad. I do not make corrections but do provide short feedback if applicable. Extra credit points are applied to each chapter test, and are not carried over from one chapter to the next. I do not give points over the test total.

Course Information
I implement this strategy in SPN 114 and 115 classes from the beginning of the semester; classes are capped at 25 students. I ask for the writing in English in SPN114 and in Spanish for SPN115 and above (SPN214/215). I post specific instructions and a sample essay on Moodle.

Ease of Application to Other Courses    EASY   MODERATE   DIFFICULT
Especially applicable to other language classes where cultural information is limited.

Additional Comments
I have gotten very favorable feedback from students who have chosen to do these extra credit assignments. In fact, I have been thanked, not for the points, but for the opportunity to delve
deeper into an area of interest. When researching a topic that allows for personal choice, some students find themselves captivated by their learning and write more than the required 2 pages. Even students who did not need the extra credit points have told me they didn’t mind because they enjoyed their research. I also find that once a student has completed an extra credit assignment, they are more prone to continue doing them. I often have as many as half the class completing the assignments.

Although it does require more time on the part of the instructor to read the essays, I have learned from my students and also about my students and how learning Spanish relates to them personally. These assignments add an extra level of learning to my Spanish classes, while placing the responsibility wholly on the student.

Resources
Although I came by this strategy in rather a spontaneous way, I have been refining it over many semesters and have been very pleased with the results. After-the-fact, I received confirmation of the validity of this strategy at the 10th Annual International Teaching and Learning Conference held at OU in May 2016.
Analysis and Synthesis: Learn with Legos

Analysis and synthesis are key concepts to critical thinking, but these abstract terms can make students’ heads spin. Make the abstract tangible by using Legos to visualize and build these concepts, first by taking apart a premade shape (analysis) and putting them back together in a new way (synthesis). This activity introduces and illustrates how to do analysis and synthesis to students in a WRT 150 class, in order to setup an assignment or major project where they will be required to use these skills.

**Step 1.** Divide students into 4 groups. Give each group a small cube made out of Lego pieces. The Legos should be different colors and shapes and all of the cubes should be constructed in a different pattern of pieces, instead of looking all the same. Ask the students to first recognize the shape of the Legos. They should confirm “a cube” or something similar.

**Step 2** Ask the students to disassemble the Legos into the individual pieces. Once they have done so ask, “How was the cube made?” and have them respond by describing the Lego pieces and pattern that once made up the cube. Each group has different pieces to talk about.

**Step 3** Briefly explain that this is how we do analysis, by breaking down the parts or components of something and evaluating how and why they were used.

**Step 4** Now, ask the students to take their Lego pieces and build something new with them. Either leave it up the groups what they build, or give each group a specific goal such as, “Build something long and narrow/flat and square/etc.”
**Step 5** Explain that this is how we do synthesis, by taking different pieces and putting them together to fulfill a new purpose.

**Step 6** Once the students understand the concepts of analysis and synthesis with the Lego pieces, immediately after give the groups a chance to practice their analysis/synthesis skills with text. This can be done in the same groups or new groups.

To practice analysis, you might assign each group to look at different components of the same short reading, such as arguments, evidence, organization, audience, persuasive appeals or whatever is relevant to the course at that time. Once the groups have had time to try and analyze their assigned components, have each group report to the class as a whole on their conclusions and interpretations of the reading.

In order to practice synthesis with text, choose 2-3 short readings on the same topic and give copies of them to each group. Each person in the group will read a different text (if you have extra people, assign some readings to pairs). Once all the group members in each group have had time to read the texts, have group members report briefly to their group about what they read. Then, assign each group a different question to answer on the topic, which they will need to answer with evidence from their readings. Once groups have had time to compose their answers by synthesizing their texts, have them report their answers to the class.

Afterward, debrief and reflect on the whole experience as a class.

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A Model for Multidisciplinary Service-Learning
Experience-Based Learning
Jessica Tess-Navarro, Writing & Rhetoric, jtess@oakland.edu
Katie Jostock, Communication & Journalism, jostock@oakland.edu
Travus Burton, Experiential Learning Coordinator, Office of Student Success and Experiential Learning Center, tburton@oakland.edu

Learning Outcomes

1. Identify the benefits of multi-disciplinary service-learning (MSL), how and why it is ideal for student learning and community impact
2. Identify an innovative and collaborative model for MSL (faculty, staff, administration, community)
3. Utilize reflection as a vehicle for learning and assessment

Overview

Presenters will provide their unique experiences with service learning from the perspectives of the campus-wide Experiential Learning Coordinator and two faculty. Presenters will explain why multi-disciplinary service learning is ideal, provide an innovative and collaborative model for faculty, staff, administration, and community partners. Presenters will reflect on their experiences using this model, and offer recommendations for implementation.

Step-by-Step Instructions

1) Meet with community partner to learn dreams, aspirations, challenges and dilemmas.
   a) Non-profits are ideal because they usually don’t have budgets to hire professional help.
2) Develop plan to meet or address needs within the scope of course learning objectives.
3) Recognize other disciplines, potential faculty and courses who could partner on a shared project to more comprehensively help the dream along or address the problem/issue/dilemma.
   a) “What additional work is needed and who can help?” “How might professionals work together to reach a common goal?”
   b) Ideally, the service-learning/experiential-learning coordinator can help facilitate partnerships among departments and between community partners
4) Coordinate a project plan and timeline (who will do “what” and “when”) between all partners.
   a) Convey the project outline, expectations and role for each student/class/group within the scope of the larger project.
   b) Transparency will foster accountability among each student/class/group
5) Implement multiple reflection points before, during, and after project
   a) Focus student’s attention toward “why” this project is important or needed
   b) Challenge students to identify what they will do next or how this experience has changed their perspective

Course Information
Multiple courses where specified learning outcomes are appropriate to complex community problem.

Ease of Application to Other Courses MODERATE
It gets easier with more experience but as a rule of thumb most of the planning should be done before the course commences with plenty of room to accommodate “life” happening.

Additional Comments

Always provide your students with as much background or context about the project as possible but only after they have had a chance to “preflect” on what they think they already know about the dream/issue/problem/dilemma - doing this will provide you the instructor with a benchmark to gauge their growth and learning throughout the experience.

Resources


Ryan M. (2012). Service-learning after learn and serve America: how five states are moving forward. Education Commission of the States; Denver, CO.


Jostock, Katie PowerPoint
Using the Mindfulness Bell to Help Students Focus

Our students are distracted.

Rather than calling the class to attention, dedicate a few minutes to mindfully eliminate these distractions and focus on the present. Unlike a standard bell, a mindfulness bell sounds out a longer resonance that slowly fades. This gives the listener time to focus on the sound and notice its change in tone.

Do you have problems focusing your students? Perhaps they are still chatting happily or playing on their electronic devices as you call the class to order or in your attempt to reign them in from a group discussion. If you are like me, you do not like raising your voice to ask students to quiet down and put away their devices! One way you can call class to order or remind your students that it is time to focus is through the use of the mindfulness bell.

First of all, what is mindfulness and why is it associated with a bell? Andrews, Kacmar, and Kacmar (2014) define mindfulness as “a state of conscious awareness and attentiveness to what is occurring at the moment” (p. 495). It is an eastern Buddhist concept encouraging individuals to be present, which is often problematic for Western cultures (Brown, Ryan, & Creswell, 2007). Its benefits, however, influence “mental health and well-being, physical health, self-regulation, and interpersonal behavior” (Brown et al., 2007, p. 211). Moreover, the “state of conscious awareness and attentiveness” to the present moment implies intentional focus. And perhaps the best way to ensure this intentional focus—to “condition” our students to recognize when it is time to pay attention—is through the use of a “Pavlovian” bell. Buddhists use Tibetan singing bowls, due to the beautiful reverberations, which produce lasting relaxation and focus during meditative practices (Harrison, 2011). The mindfulness bell exercise is portrayed in the documentary film Room to Breathe (2013), when mindfulness teacher, Megan Cowan, visits an at-risk San Francisco middle school to bring meditative practices to students struggling with emotion regulation. Through this practice, students will be able to...

1. Identify when it is time to focus and/or refocus on class and the instructor by the sounding of the bell
2. Reflect on and apply this meditative practice to everyday living and mental health

The instructor needs the following to complete this exercise:

- A singing bowl, which can be purchased easily online, but faculty may also use a webpage like “Mindfulness Bell” from Washington Mindfulness Community.
- Five to ten minutes of class time
Directions:

1. Engage the class in a short discussion of what they do to focus and/or refocus attention
2. Mention you would like to try a method that might feel a little strange at first
3. Understand you may meet with some initial skepticism, which is why providing some research supporting the benefits of mindfulness and meditative practices is advisable
4. Tell the class you will play the sound of a bell, and you would like them to listen to its reverberations until they can no longer hear them
5. Once they are certain the sound is “gone,” instruct them to raise their hands
6. You may want to turn down the lights or encourage students to close their eyes
7. Play the bell once; repeat a second or third time if desired
8. Reflect with the class on what they thought of the activity (Did they like or dislike the exercise and why? What challenges did they face? How did they overcome these challenges? Do they see the exercise’s utility?)
9. If you wish to begin class this way each day, or if you wish to use the mindfulness bell as a way to reign students in from group discussions, make sure you clarify this with your class. (“I don’t like raising my voice to get students’ attention; so, if it’s okay with you, I’m going to play this bell each time I want you to quiet down and listen.”)

References:


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Academic Engagement & Student Persistence

Strategy to Support Student Success
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Objectives

1. Students will have the chance to engage with their major through major-related activities, organizations and/or research.
2. Students will have the opportunity to expand their professional network through targeted activities.
3. Students will be more actively engaged in their major of choice and future career field.

Overview

As part of the Second Year Experience (SYE), students are encouraged to explore five specific engagement areas: major/minor exploration, major, career/research, campus and community engagement. Students are able to customize their second year based on their interests and goals.

According to the Community College Survey of Student Engagement (CCSSE), actively engaged students are “more likely to stick with their studies and to attain their academic goals,” (McClenneny, Marti and Adkins, 2007, p. 1). These students may be engaging with faculty, staff, peers, or academically. To actively engage students in the classroom, faculty members may utilize active learning techniques, including class discussions, problem solving tasks and collaborative projects. According to research completed by Paul Umbach and Matthew Wawrzynski (n.d.), faculty members who worked to engage their students both in and outside the classroom, and promoted participation in enriching experiences led to “students who felt supported and were active participants in their learning,” (Umbach and Wawrzynski, n.d., p. 18).

George Kuh (2008) claims that high-impact practices (HIPs) are positively associated with student learning and persistence. HIPs include first year seminars, learning communities, writing intensive courses, collaborative projects, research and experiential learning, among others (Kuh, 2008). These practices require substantial time and effort, encourage students to interact with other students and faculty members, and push for collaboration both in and outside the classroom (Kuh, 2008). With the benefits listed above, Kuh encourages student participation in at least two HIPs throughout their college career.

SYE is considered one of the HIPs as described by Kuh. Academic Advisers meet with students both Fall and Winter semesters and discuss major/minor exploration, career planning and the importance of faculty connections. Both faculty and staff “can play a key role by encouraging students to take part in high-impact practices that are often rich with activities that induce students to apply what they are learning to the kinds of unscripted problems they will surely face in the future,” (Kuh, 2016, Final Words: Para. 2).
Step-by-Step Instructions

1. Include active advising sessions and high-impact educational practices
   a. Critical thinking
      i. “Is getting a C in Chemistry showing I’m in the right major?”
   b. Problem Solving Activities
      i. Scheduling with work, life and other obligations
   c. Collaborative assignments/projects
   d. Other experiential learning activities
      i. Internships
      ii. Community engagement
      iii. Civic responsibility
2. Encourage participation in undergraduate research (if applicable)
   a. Refer students to interested faculty members
3. Engage students in goal setting
   a. Who do I want to be? Where do I see myself?
4. Promote participation in academic student organizations

Context for Application
- Applicable for all students
- Usable throughout the entire semester

Ease of Implementation: EASY MODERATE DIFFICULT

Resources


High-Impact Educational Practices (LEAP)


Case-Based Teaching
Cheryl Jusela, DNP, ANP-BC, NP-C, cjusela@oakland.edu
Type of Strategy: Flipped classroom by using case-based teaching

Learning Outcomes
- Demonstrate self-directed learning through problem solving and decision making skills.
- Assess students’ ability to synthesize, evaluate, and apply information and concepts learned in lectures and texts.
- Develop interpersonal skills and the capacity to work in a team.

Overview: Students are given a case study at the beginning of the course and are assigned to work in groups of three. Beginning week four, the first half of the class is dedicated to lecture and the second half of the class is dedicated to student presentations. Each case study has four questions that must be answered. The length of the presentation is 15-20 minutes per group and each person must present a portion of the case study. This group assignment also has an individual component where each student is required to submit one test question and complete an evaluation form of themselves and each team member. Failure to do the individual component can result in additional point reductions for that team member. If the quiz question is well written, students may see them on the exams.

Step-by-Step Instructions for 100 students:
1. Develop 33 different case studies. Case studies can be based on real events or a construction of events that could take place. The case study should tell a story and can include issues and/or conflicts that need to be resolved. Include charts, graphs, and any relevant historical background information needed.

   Case studies in fields such as international affairs, public policy, history, or economics, should include historical information, including statistical data, relevant legal or governmental policy, and arguments by various agencies for actions to be taken. A good case study presents interest-provoking issues and promotes empathy with the central character. For example, a rhetoric instructor may want to teach students about plagiarism. Rather than giving a lecture to discuss this topic, he/she can give the students papers and articles used to write those papers, then ask if plagiarism had occurred and how they might respond if they were the instructor.

2. Review the case study rubric and evaluation form with students. Be sure to emphasize the group and individual component.

3. Beginning week 4, dedicate the second half of class to student presentation. Have three to four groups present each week, so that you can get through all of the presentation by the end of the semester. Be sure to have time on the last day of class for make-ups in case classes get cancelled.

Course Information: I implement this in an undergraduate NURS 227 (pathophysiology) course, which meets face to face one day a week for 2 ½ hours and is capped at 100 students.

Ease of Application to Other Courses: EASY MODERATE DIFFICULT

Additional Comments: Case-based teaching (CBT) fosters a student-centered approach and enables instructors to be facilitators rather than disseminators. Case-based teaching is an
active, integrated process that helps to maintain student’s interest on the subject matter, emphasizes learning as opposed to recall, promotes group work, and helps students to become self-directed learners.

**Resources:**
Use of Case Studies as a Teaching and Learning Tool
Bridget E. Varughese, Biological Sciences, Oakland University, bvarughese@oakland.edu
Tool: Case studies

Learning Outcomes
- Enhance higher order thinking by analyzing and evaluating concepts with life examples
- Increase ability to analyze scientific data and develop written and/or oral communication skills
- Promote team work through student collaboration and active learning

Overview
Although case studies have been used in law, business and medicine for a long time, its use in basic science education is recent. It is a great flexible teaching tool that can be used to consolidate knowledge, stimulate critical thinking and promote teamwork. Instructors can use case studies in a variety of formats such as clicker-based, in-class discussion, and out-of-class group or individual work. The scenario, questions or problems posed should be aligned with the learning objectives of the course. Through the different case study formats, both specific and/or open-ended answers can be asked. The latter often stimulates more discussion and creativity among students. To summarize, case studies not only allow students to develop thorough understanding of the concept, but also develop their problem solving, analytical, and communication skills.

Step-by-Step Instructions
The delivery of a case study would depend on the type of case study and the expected participation. Therefore, the following is a general outline.

1. While developing the syllabus identify the learning objectives and/or main concepts that you would teach using case studies.
2. Prepare the case. You may use research, current affairs, or news articles to prepare the case. You can also choose prepared case studies from data bases. The case study center at University of Buffalo is an excellent source of case studies (http://sciencecases.lib.buffalo.edu/cs/)
3. Some things to consider are timings, whether you want it to be in-class or out of class assignment. There is a lot of flexibility and variation in the selection and preparation of case studies. At the end, the case study should align with your learning objectives and logistics of the class.
4. Develop a rubric for each case study.
5. Insert selected cases and rubrics into syllabus. The rubrics should be clearly explained to the students.
6. In time, explain to the students the case, and facilitate a discussion among students. You may need to steer the discussion sometimes. If it has a problem solving, experiment design or other open-ended questions, then it is best to get students to work in groups.
7. You can ask for a group submission or each student could submit their response.

Course Information: Applied in biochemistry I (Bio325) and Microbiology (Bio319). Both courses are offered in Fall and Winter semesters. The number of students in these classes vary from 45-75 students per class.
**Ease of Application to Other Courses:** Case studies can be easily applied to any course both in STEM and non-STEM fields.

**Additional Comments**
Most cases that are available to use requires 1-2 hours in-class time. This can interfere with lecture delivery. However, you can write shorter 15-20 minutes case or do it partially in class and remaining the students do out of class.

**Resources**
- [http://www.bu.edu/ctl/teaching-resources/using-case-studies-to-teach/](http://www.bu.edu/ctl/teaching-resources/using-case-studies-to-teach/)
- [http://sciencecases.lib.buffalo.edu/cs/](http://sciencecases.lib.buffalo.edu/cs/)
- [https://cft.vanderbilt.edu/guides-sub-pages/case-studies/](https://cft.vanderbilt.edu/guides-sub-pages/case-studies/)
Molecular LEGOS
Sanela Martic, Chemistry, martic@oakland.edu
In-class active learning and hands-on practice

Learning Outcomes
- Transform 2D drawings into 3D models of simple organic molecules
- Manipulate 3D models to generate specific functional groups
- Evaluate which 3D models possess property known as CHIRALITY

Overview
Students will use molecular modeling kits to build several organic molecules. By simple substitution of the model, student will make new functional groups. In addition, students will evaluate their 3D models for a property known as chirality. Chirality is a fundamental property of biological molecules.

Step-by-Step Instructions
1) Identify various atoms and bonds (by color coding)
2) Make allowed connections, using bonds and atoms, and generate 3D model of your choice
3) Use 2D drawings to make 3D models of methane, methanol, bromomethane, and 2-bromoethane
4) Evaluate each molecule above and determine it is chiral. To determine the chirality, build a mirror image of each molecule and try to superimpose (overlay) it on its mirror image. If the two are superimposable then the molecule is not chiral. By contrast, if the two are superimposable then the molecule is chiral.

Course Information
CHM234; Organic Chemistry I; 70-170 students; Used throughout the semester by students (in-class and at home) and myself while teaching the course (in-class). Students also may use the kit during exams and final.

Ease of Application to Other Courses EASY MODERATE DIFFICULT

Resources
Active Learning Classroom Demonstrations to Get the Point Across
Chris Kobus, SECS, ckobus@oakland.edu
In-class active learning

Learning Outcomes
- To facilitate critical thinking through a focused active learning exercise
- To engender an emotional response (positive or negative) to a logical lesson

Overview
Relatively simple, hands-on demonstrations impact the learning of students in the classroom that typically passively absorb information (not very successfully in many cases). The demonstrations are even more effective if one makes a statement of fact in a way that grabs a student's attention or sounds outrageously wrong to most of the class.

Step-by-Step Instructions
In introducing a fundamental concept, find a fact that is not intuitively obvious, or better yet one that goes against intuition. Google is an excellent resource for this.
Example: The human body is not directly temperature sensitive. The claim sounds outrageous and wrong. Everyone knows that you can tell when it is hot or cold!, the reasoning will go. But then follow that up by claiming you will prove it. This is where a demonstration comes in handy (if pressed for time, a properly structured discussion can have a similar effect).
- Demo #1: Bring a piece of ceramic tile and a piece of rigid insulation to class. Have students either put each hand on one material and ask which is warmer (they are both at the same temperature but the tile feels colder)
- Demo #2: Bring a small fan, ideally battery powered but a plug in works even better. Turn it on after you ask a student to sit in front of it. Have the student indicate how much colder the air feels as the fan is adjusted to higher speeds (the temperature of the air never changes and such can be shown by direct measurement)
- Demo #3: Bring a small tub of water in the class. Ask a student to put their hand in it and relate how much colder it feels (the temperature of the water is the same as the air)

The above demonstrations, either individually or together, are a powerful tool to get fundamental concepts involved. In this case, to introduce the sensitivity of the human body to how fast heat is leaving rather than directly on temperature (bioengineering), as well as the concept of convection heat transfer (heat transfer from a surface to a gas or liquid)

Course Information
EGR 250: Introduction to Thermal Engineering.
An introductory course on energy, the conversion of one form of energy to another, and the transport of energy from one place to another. Concepts of heat transfer are also covered.

Ease of Application to Other Courses
EASY  MODERATE depending on the subject matter and extent of demonstration

Additional Comments
After doing these demonstrations over many years, I have had students years beyond their graduation reminisce about how they remember some of the demonstrations we did in class, and how the key nugget of those lessons stuck with them long-term.
Caution: these should be short, low-cost but high-concept. If K-12 schoolchildren can learn something from these demos, then they are great for the college classroom.
Group Work with Google Drive

Group work is a challenging act of balancing challenges and rewards for collective effort. We want to evaluate students fairly based on their work, but we also want to evaluate their ability to bring together different perspectives and work as a team, much the way they will do in their careers. Google Drive offers common technology used in classrooms—a Google Docs word processor (like MS Word) and Google Slides slide presenter (like MS PowerPoint)—in a format that allows seamless and recorded collaboration among multiple users.

For group work I use Google Docs to keep track of work. Each group member has access to the document (along with me).

The Basics

• Google Docs can be used with any Gmail account. People without Gmail accounts can be invited to view documents. Anyone with a Google-powered email account (such as those with @oakland.edu email addresses) are automatically tied into Google Drive, which is where Google Docs, Slides, and other programs are available (see green image above).
• Collaborators are added to Google Docs at the creator’s discretion. Creators can choose whether collaborators view, edit, or manage the document (share with others).
• Any number of people can work in a Google Doc simultaneously. You can actually see others typing in the document at the same time you are.
• Google Docs save automatically. People use them for collaborative work because everyone has the same most recent version. You can revert changes in the case of accidental edits.
• Revision history (see yellow image above) allows anyone to see the history of changes, which are color-coded per user.

For more guidance on using Google Docs, visit google.com/docs
Benefits for Faculty
As I show in the first two images, Google Docs allows me to easily organize and monitor group work, which also makes students feel more assured of mutual accountability. When I assign a group research project, each student is asked to research their group topic and then place the research in a Google Doc. The program highlights and tracks edits made to the document. If a group member hasn’t done any work or poor quality work, then I can tell.

During class, the students are asked to create a basic plan for their presentation on the storyboard. As a group, they decide the subtopics and then each group member is assigned a subtopic within the presentation. The storyboard becomes a contract between the group members. They will then give me the storyboard so I know who is responsible for which subtopic. Again, they will use Google Docs to create the presentation and it tracks the work.

Additional Ideas
Use more tools available in Google Drive, such as Slides (like PowerPoint) and Forms (a survey tool). All of these tools are available in the same place. More on Google Drive can be found at drive.google.com

• Use Google Docs for group planning, brainstorming, and drafting formal writing.
• Use Google Slides for group presentations. The students will start to add their slides here, with each person working on his/her part. I ask that the students put what they are going to say in the Notes section below each of their slides.
• Use Google Forms for group evaluations. Forms allows you to use a variety of question types, from rating scales to open-answer comments.

Written by Amy Rutledge,
Special Instructor of Management Information Systems.
rutledge@oakland.edu
The Book Resource: Moodle’s Best Kept Secret
Tech Tool
Dan Arnold, Nic Bongers, & Shaun Moore, e-Learning & Instructional Support, arnold23@oakland.edu, bongers@oakland.edu, samoore@oakland.edu

Learning Outcomes

- Participants will gain knowledge on the ways the Moodle Book resource can be used in their face-to-face and/or online courses.
- Participants will discover the variety of ways that informational content can be displayed using the Moodle Book resource.
- Participants will be shown real life examples from three professors in three different disciplines and how they use the book resource in their Moodle courses.

Overview
The Moodle Book resource is an extremely versatile, yet often overlooked, learning tool. Faculty in face-to-face, hybrid, and fully online courses can use the Book resource to organize and present chunks of information. It allows you to embed related text, documents, videos, websites, audio clips, and more into your Moodle course in a format that is highly organized for students. Best of all, the Book Resource is easy to use with a just a little bit of practice.

Step-by-Step Instructions
1. Turn editing on in your Moodle course
2. Select “Add an activity or resource”
3. Select Book from the list
4. Name your book (i.e. Chapter 4 – Potions and other Potent Potables)
5. Click Save changes
6. Start adding Chapters...Be creative! (or contact e-LIS for an individual appointment)

Course Information
HRD 308 – Fall 2016; 30 students; All semester
MIS 100 – Winter 2017; 80 students; All semester
QOTCC - Winter 2017; 20 faculty; 4-weeks

Ease of Application to Other Courses  EASY MODERATE DIFFICULT

Additional Comments

- The Book resource is a great way to share content digitally. I primarily use it to supplement required chapter readings with related videos, articles, podcasts, and websites. In doing so, I can appeal to various preferred learning styles. ~Dan Arnold
- I've used it for things such as resources to be used when talking in a forum, or even for exam review guides. ~Shaun Moore
- I use the Book resource to present a combination of video, images and text on single pages. It saves a lot of space on my course page, and the students find it engaging and easy to navigate as well. ~Nic Bongers

Resources  e-LIS Book Resource Help Document – Available in direct link below, which can also be found at oakland.edu/elis in the Help Documents page under “Moodle” and “Miscellaneous.” https://docs.google.com/document/d/1OsU60ebbnfLdp-qEV4EufewMQXQ6yvs7JX6QzCjw/
Communicate with Class Texts

Helena Riha, Linguistics & International Studies, riha2@oakland.edu

Type of Strategy: Method to Communicate with the Class

You ask students to check their OU e-mail for course announcements, but are they doing so consistently? Your students are probably not checking their e-mail as often as you would like. The Wall Street Journal reports that young people in their teens and early twenties use e-mail primarily for formal communication – it's for "communicating with old people." An effective supplemental way to reach students is by sending out class texts – course announcements sent as text messages. Short course announcements can be sent in their entirety. Long announcements can either be summarized, or you can just send the header for your e-mail message as a text and ask students to check their e-mail for the full message. An important caveat with class texts is that signing up for them must be optional, whereas asking students to check their OU e-mail for messages can be required.

Convert Students' Cell Phone Numbers into E-mail Addresses

Course announcements can be sent from your OU e-mail account as text messages by way of an SMS gateway – an e-mail address with the recipient's cell phone number and carrier in it. The recipient's cell phone number is followed by the carrier's gateway (e.g. 2483215432@txt.att.net). To create a class texts mailing list, you will need to obtain each participating student's cell phone number and carrier, and then you will need to create a mailing list with that information. The main carriers and their gateways are provided in the next section. To find the gateways for other carriers, Google "list of SMS to e-mail gateways."

Use a Moodle Survey to Obtain Students' Cell Phone Numbers and Carriers

The most convenient way to do obtain the mailing list information you need is through a Moodle survey. You can use the Survey tool in Moodle to create a "sign up for class texts" survey that collects participating students' information. After the survey has closed, you will need to download the information to create your mailing list (survey example on next page).

Create Your Class Texts Mailing List

You can download students' survey responses from Moodle as an Excel file. Once you have done that, delete all of the information except student names, cell phone numbers, and carrier gateways. Copy this information into a table in Word and add <> around the phone numbers and gateways. Your mailing list should look like this:

After you have your mailing list, you can copy and paste it into the BCC cell of e-mail messages you want to send out as texts.
Reminders about Class Texts

1. The most important detail to remember is to send all class texts as BCC messages so that students' cell phone numbers are not revealed. Address the message to yourself as the main recipient and copy and paste your class mailing list into the BCC cell.

2. Tell students that they can unsubscribe at any time by sending you a message with the word *unsubscribe*. Those who withdraw from your course will definitely need to do this!

3. Remind students that if your text message is cut off, they will need to check their OU e-mail for the full message.

4. Let students know that you will begin using class texts after the add/drop period is over. This will enable you to avoid having to update your mailing list when enrollments are still in flux.

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Example of Moodle survey for collecting contact info.

Collaborative Learning on Moodle
Pamela Todoroff, WRT & RHT, todoroff@oakland.edu
Online Group Work Strategy

Learning Outcomes:
• Examine past difficulties with collaborative projects to avoid repetition of them and to dispel discomfort
• Demonstrate a process for successful [online] collaboration and teammate selection
• Offer strategies to deal with non-collaborative teammates

Overview:
Collaborative writing/work is rampant in today’s workplaces. Frequently workplace teams operate in a virtual environment that might include a team blog, LMS, WebEx, or other new media format. But collaboration is not intuitive and online collaboration can be manifestly intimidating. Offering a process for effective collaboration eases students’ fears and increases the responsibility of all. Articles and video resources speak to various elements of the collaborative process while two online forums (that are easily converted to in-class writing exercises) offer a learning opportunity, a means to select teammates, and a significant tool to hold students accountable to each other. The strategy offered here is most effective when presented during the week before groupwork commences as it prepares students to be successful (and responsible) collaborators.

Step-by-Step Instructions:
• Establish one week (preferably just before a major collaborative project) as Collaboration Week. Identify it as such in the syllabus and on Moodle.

• Assign Readings:
  1. “Coping with Hitchhikers and Couch Potatoes on Teams” by Barbara Oakley, Oakland University (use this to explain difficulties during Moodle forum #1)
  2. “Writing Eyeball to Eyeball: Building A Successful Collaboration” by Rebecca Ingalls, Drexel University — (use strategies described here in Moodle forum #2)

• Assign Videos (or show during on-campus class)
  1. How to Work Within A Team (4:08) — Introductory material
     https://www.youtube.com/watch?v=ECUNdp9ZDw8
  2. Optimizing Virtual Teams (3:56) — particularly good strategies for online collaboration
     https://www.youtube.com/watch?v=0SzWrazgt7Y&t=55s
  3. Why Collaboration Is an Individual Effort: Emily Eldridge at TEDxMU (12:38) — use to explain “difficult” teammates in Moodle forum #1
     https://youtu.be/DmGn2X9SETk

• Video ‘Lecture’ re: Collaboration — tying together concepts from assigned readings & videos; suggesting ways to use materials to effectively select teammates; offering a 2 week ‘trial’ period after which they may “vote someone off the island”

• Moodle Forum #1: Your Experience with Collaborative Writing Pitfalls
  o Include a link to “Group Writing” from which students select a “pitfall” (see handout for forum language)

• Moodle Forum #2: Create your ‘ideal’ Group Contract
• Include a link to Developing effective and cohesive virtual teams (1:42) (see handout for forum language)

• **Group Contract:** the first Moodle forum of the Group’s work to synthesize the individuals’ ‘ideal’ Group Contracts

• Offer the **Collaborative Assignment** description and a Moodle forum to develop a Group **Writing Plan**

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**Course Information:**
This strategy is effective with any level of on-campus or online classes. I have found that the benefits of devoting an entire week to Collaboration outweigh any possible disadvantages, particularly for first years or classes with a quantity of “independent thinkers.”

**Ease of Application to Other Courses:** ➔ EASY

**Resources:**
There are two main resources—an article and a YouTube video—that are the basis for the second activity (“Your Ideal Group Contract” Moodle forum) but the general idea for a process preparing students for collaborative work came from my experience as a corporate writer and project manager.
Using Revision Plans to Enhance Student Engagement with Instructor Feedback
Laura Gabrion, Dept. of Writing and Rhetoric, gabrion@oakland.edu
In-class Active Learning

Learning Outcomes
- To increase students’ engagement with instructor feedback on written drafts
- To encourage students’ revision practices via a specific plan
- To facilitate synchronous or asynchronous conversations about students’ writing

Overview
Many students enter college with low self-perceptions about their writing skills. One way to make instructor feedback useful and meaningful to students is to create opportunities for conversation between student and instructor in advance of the revision stage. By combining instructor feedback with student-composed revision plans, instructors and students can participate in dialogic feedback that encourages both critical thinking and critical revision (Berzsenyi, 2001; Muldoon, 2009). Dialogic feedback diminishes students’ misinterpretations of instructors’ comments and gives students a better understanding of their writing and which skills to work on as they progress to the final written product.

Step-by-Step Instructions
1. Once students have completed their drafts, have them fill out a revision plan targeting their top five issues/problems/concerns about the draft, their plan to solve the problems, and the rhetorical benefit of doing so
2. Instructors can use the revision plans to give students specific and focused feedback on their drafts, whether delivered orally or in writing
3. Students should be encouraged to further discuss instructors’ comments, whether orally or in writing

Course Information
This activity can be done in a variety of different courses that require written work from the students. This activity has accompanied drafts throughout the semester in several WRT 150 and WRT 160 courses. The number of students in these courses is capped at 22; however, the activity could be used with larger classes as well. It may be more beneficial in larger classes to offer the activity to students who are struggling with the written requirements in the course. For those teaching in other disciplines, the column regarding the rhetorical benefits of planned changes to the draft can be eliminated.

Ease of Application to Other Courses
- EASY
- MODERATE
- DIFFICULT

Additional Comments
This activity can simply instructor feedback by allowing the instructor to focus on students’ concerns. It also encourages students’ revision practices because they have developed a specific plan for revising that includes both global (i.e., organization, clarity of claim) and local (i.e., documentation, mechanics) revision targets.
Resources


Interpreting and Understanding Secondary Research: 
Teaching Students How to Become Consumers of Scholarly Research

Laura B. Klein, Ph.D., Department of Writing and Rhetoric, lklein@oakland.edu

Learning Outcomes

Students will:
- understand general content areas of a scholarly article
- become more savvy consumers of secondary research
- implement a 5-point framework for interpreting scholarly articles

Overview

In accordance with first-year writing core objectives, faculty are required to instill a foundational understanding of secondary research strategies for locating and evaluating sources both through library and other online databases appropriate for academic scholarship. Although a great deal of emphasis is given to locating sources (how do I find an article?) and evaluating a source (is it scholarly, peer-reviewed? Is it credible?), more emphasis can be given to help students understand the content of a scholarly article. These materials provide faculty from any discipline with the tools and framework to help students interpret scholarly studies and become more “savvy consumers” of secondary research.

Step-by-Step Instructions

Classroom discussion and activities will focus on the general framework provided below.

Interpreting Secondary Research 5-Point Framework:

1. What is the purpose of the study?
2. What method was used to gather data? (quantitative or qualitative, and any specifics)
3. Summarize key results/findings
4. Were there any limitations to the study?
5. What are the future applications for this study and/or area of research?

Faculty are encouraged to implement this in-class activity as a precursor to course assignments that require the use of secondary research. After faculty present context to students about the importance of interpreting secondary research, he/she can introduce the framework provided above. A separate 5-Point Framework table/chart can be distributed to students for use when completing this activity.

This activity works well when faculty have students use the 5-Point Framework for both a quantitative and qualitative article. Articles can be selected by faculty members based on program discipline using the Kresge Library One database. Students can work on this activity individually, with partners, or in a small group. Once the students have spent 20-30 minutes reading the article(s) and completing the framework grid, faculty can discuss appropriate responses for each question within the framework.
Course Information
This activity is used in WRT 160, a general education required writing foundations course, which typically consists of first year students. Student enrollment is capped at 22 per CRN.

Ease of Application to Other Courses  EASY  MODERATE  DIFFICULT

Additional Comments
For classes that require students to use scholarly articles/secondary research for course assignments, this is a relevant activity to help students understand how to interpret sources (at least at a high level). This activity is especially meaningful for first and second year students and others who have had limited exposure to scholarly work. By engaging in this activity, faculty can help students develop a comfort level and overall awareness of the purpose, format, and content typical of a research article. For my WRT 160 classes, I implement this activity as an in-class assignment early in the semester – before students begin the research process needed for a major project.
Peer Paired Problems
Sarah Hosch & Jonathan Yates, Department of Biological Sciences, hosch@oakland.edu
In-class Active Learning & Metacognitive Development
Proposed Activity for Gateways to Completion Project

Learning Outcomes
Students will
- Apply, analyze and evaluate biological concepts through case studies, problems or scientific data
- Self-reflect on their performance and accurately judge their skill level
- Engage with their peers through discussion of biology

Overview
This technique has been piloted as part of the John N. Garner Institute Gateways to Completion (G2C) process (http://www.jngi.org/g2c/). The G2C initiative involves a number of faculty and staff across Oakland University campus, all involved in determining the impact of “gateway course” redesign on both student success at the level of the specific courses, as well as institutional wide success through retention, graduation rates and decreasing achievement gaps between nondisadvantaged and disadvantaged students. We are currently proposing course-wide integration of this technique in multiple sections of Biology I.

Step-by-Step Instructions
At least once per class, students will answer a series of questions using a classroom response system.

1) Students will answer a Bloom’s level 3-5 (Apply, analyze or evaluate) question independently. Students are given ~2 minutes to answer the question.
2) Students will report their confidence in answering the question correctly.
3) Students will reattempt the question, this time working in pairs or groups to determine a consensus answer.
4) Students will report their confidence in answering the question correctly as part of a pair or group.
5) Instructor will report to the class on the number of correct responses and the confidence levels of the class.
6) Instructor will open a class discussion on the critical thinking steps required to correctly answer the question, and can supplement with examples or explanations if needed.

The instructor can continue to monitor the critical thinking outcomes and confidence to the class throughout the semester.

Course
Biology I is considered a “Gateway Course” due to its high student enrollment (around 2100/year), high DFWI rate (25.6% for 2015-2016) and that it is foundational in nature, meaning it is required for students to enter into a particular major (Biology, Health Sciences) or educational tract (nursing). All courses in Biology require a 2.0 in a prerequisite course; students are unable to move on in their program without successful completion of Biology I. Thus, many students retake the course, sometimes more than once.
Ease of Application to Other Courses  

EASY  MODERATE  DIFFICULT

Additional Comments

This particular technique aims to provide “early and often feedback,” which allows instructors to assist student learning in several ways. First, students will be given feedback on their mastery of content and application of that content in critical thinking exercises. Second, instructors can use information on performance to flag students that are struggling. Together with personal emails or “faculty feedback,” students can be directed to advisers and resources very early in the semester, before the first exam. Lastly, students will have an opportunity to develop their metacognition skills. If students can more accurately gauge their skill level, they may be able to alter their learning activities appropriately. Students may relate their performance to the number of hours spent studying for an exam, which is not an accurate predictor for success.

Because this is a piloted technique, at this time we do not have data to indicate student learning gains in our course when used for the duration of the semester. In addition, this is one of multiple pieces of our proposed course redesign for the Gateways 2 Completion program. One advantage of this technique is that collection of student demographics data may help us to understand if there are disparities in critical thinking and metacognition skills.

To really see a benefit in improved critical thinking, we feel that best practices include high levels of instructor engagement with the students, including post-question discussions about how to work through the question. This not only provides students with guidance in their learning, but also creates a supportive learning environment where students feel comfortable asking questions and discussing their learning as part of a larger community.

Resources


Promoting Deeper Learning Through Student-Written Questions
Rod Nyland, Biomedical Sciences OUWB, nyland@oakland.edu
In-class active learning and study skill building tool

Learning Outcomes
Students will
- learn how to develop their own high-quality assessment items
- be able to utilize a highly effective study technique across courses
- be able to evaluate their depth of understanding with a given topic

Overview
In challenging curricula, many students may struggle as a result of primarily utilizing low efficacy learning techniques. Furthermore, students in our medical curricula frequently utilize multiple-choice questions to assess their current level of understanding with course concepts. In our course we teach students how to write challenging multiple-choice questions, reflective of their board examinations, in an attempt to both provide additional assessment measures and instill effective study techniques. Not only is it important to inform students the benefits of such techniques, but it is usually necessary to help them develop these skills. Without training, many student-written items lack rigor and may not provide the author as much benefit as possible.

This tutorial may be applied as an in-class activity or an extracurricular resource for students.

Step-by-Step Instructions
At the beginning of the semester we teach study skills to our first year medical students. After that, I work with any interested students to help them write their own questions. While there are related steps before (study skills workshop) and after (ongoing support for student question writing), the following steps outline the process for teaching students how to write questions:

1. Orient students to the benefits of question writing.
   In the related study skills workshop I emphasize the significance of question writing as a learning technique. While it is important to refer to supporting research in cognitive psychology, it is equally important to boil it down to the fact that they need to have a really strong understanding of material to write challenging questions. Thus, in the process of writing questions they are developing strong connections between concepts, and also identifying areas where their understanding is superficial.

2. Provide examples of how to produce quality questions.
   I have developed a handout that walks students through a few examples they should be familiar with to show how to craft challenging, layered questions. This can easily be achieved in any discipline. Below is a simple example followed by one in my discipline, pharmacology.

   a) Effectively, the process of question writing can be thought of like increasing the complexity of a math problem. You start out with the fact or concept they need to
know, illustrated here as the sum of 2 and 6. This can be any critical fact or concept the must master in a course.

b) Then, you increase complexity by replacing components of the *fact* with other concepts they should have mastered. Here it is making the math more complicated, but in other disciplines you could replace dates with historical events, or remove products (organic chemistry) and insert reagents and conditions.

<table>
<thead>
<tr>
<th>Simplest</th>
<th>Increased complexity</th>
<th>Most complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solve the following:</td>
<td>Solve the following:</td>
<td>Solve the following:</td>
</tr>
<tr>
<td>2 + 6 = 8</td>
<td>(12 - 6) + 6 = 12</td>
<td>(12 - 6) + 31 = 35</td>
</tr>
</tbody>
</table>

In my discipline of pharmacology, they must know what happens when a patient receives norepinephrine. But, I don’t want them to just memorize the effects, as the “simplest” representation would assess. I want them to know the underlying processes at play so they can apply this knowledge in different situations and predict the outcome. In order to write the question on the far right they need a strong understanding of the physiology and pharmacology taking place. If they are not able to produce a question like this it gives them insight as to where they need to devote more study.

<table>
<thead>
<tr>
<th>Simplest</th>
<th>Increased complexity</th>
<th>Most complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the expected physiologic response when a subject is injected with norepinephrine?</td>
<td>Decreased heart rate upon administration of norepinephrine is directly related to activation of which receptor type?</td>
<td>A research subject receives Drug X and a new baseline for heart rate and blood pressure is recorded. The subject then receives a dose of norepinephrine. The patient’s blood pressure and heart rate both increase. Which of the following is most likely Drug X?</td>
</tr>
<tr>
<td>A. Decreased blood pressure &amp; heart rate</td>
<td>A. ( \alpha_1 ) adrenergic</td>
<td>A. Atropine</td>
</tr>
<tr>
<td>B. Decreased blood pressure &amp; increased heart rate</td>
<td>B. ( \beta_1 ) adrenergic</td>
<td>B. Isoproterenol</td>
</tr>
<tr>
<td>C. Increased blood pressure &amp; decreased heart rate</td>
<td>C. ( \beta_2 ) adrenergic</td>
<td>C. Phentolamine</td>
</tr>
<tr>
<td>D. Increased blood pressure &amp; heart rate</td>
<td>D. ( \alpha_2 ) adrenergic</td>
<td>D. Prasugrel</td>
</tr>
</tbody>
</table>

3. In small groups, lead a structured question revision session.

This entire session is all about teaching students how to write effective questions. The following details have been developed to make the session as influential as possible.

a) Provide each group with a list of “factoid” questions, like the “simplest” example in the left panels. This way they don’t waste time trying to come up with a concept to write a question on. You are providing a starting point.
b) One of the most important aspects of the exercise is how they get from a factoid question to a layered question, so I provide a worksheet that encourages them to elaborate on the logic they used to construct the rigorous question.

4. Collect the revised questions and compile into a resource for the class.

   After the session I provide the students with a detailed question writing guide that I have developed. The guide has examples of question writing errors as well as links to the National Board of Medical Examiners (NBME) online question writing tutorial. I also provide their compiled group revision worksheets to give them examples of how to consider developing layered questions.

5. Provide feedback and continued support on question writing.

   Finally, I make myself available to provide constructive criticism on how students can continue to improve their question writing skills. For the past few years, students in our school have created a question writing committee to generate mock midterm and final exams to supplement what we provide. I try to help support them with this effort.
Two very important aspects in the above steps are providing a model that students can follow, and giving them constructive feedback on their products. Without both of these students may end up wasting their time by creating questions with low rigor.

**Course Information**

I am the current course director for the first basic science course taken by first-year medical students at Oakland University William Beaumont School of Medicine. In our course, Biomedical Foundations of Clinical Practice 1, students engage with a variety of disciplines including biochemistry, cell biology, genetics, immunology, microbiology, molecular biology, pharmacology, and physiology. The current enrollment for our school is 125 students per cohort, and as a school we embrace students with a “non-science” undergraduate major. As a result we have found teaching students *how to study* is as important as *what to study*. Early in the semester we teach the students about effective study strategies, and question writing is one of the high efficacy techniques we describe. Recently I began teaching students how to write effective questions though 1) a one- to two-hour informal workshop, 2) supporting a student question-writing committee, and 3) providing additional resources to help them develop this skill. A similar workshop can be employed easily and at any time throughout the semester.

**Ease of Application to Other Courses**  
EASY  MODERATE  DIFFICULT

**Additional Comments**

Unintended consequences

Many of our first-year medical students struggle when first faced with applying course content in layered, board-style questions. A surprising benefit many of our students have expressed is that through learning how to write these layered questions they learned how to approach answering them on our exams. One student in particular described to me how the questions originally seemed very abstract, but then after learning how we construct them she was able to deconstruct questions on exams and apply what she had learned in the course.

**Resources**

In my follow-up question writing guide I provide links to the NBME online question writing tutorial. This is useful for both educators and students alike to learn strategies for writing effective, layered assessment items.

NBME’s Writing Multiple Choice Questions: An Introductory Tutorial
http://www.nbme.org/IWTutorial
Teaching Research Online through Targeted Tutorials
Contact Amanda Nichols Hess, nichols@oakland.edu
Teaching Resources

Learning Outcomes
- Students will be able to develop a research topic and search strategies to find information for an academic or scholarly purpose
- Students will be able to effectively find, use, and evaluate scholarly information available through the resources at OU Libraries
- Students will be able to explain key academic concepts, such as how to use and cite sources correctly and the copyright responsibilities they have as a creator/user of content
- Students will be able to effectively use the various resources (e.g. databases, journals, e-books) available through OU Libraries

Overview
As instruction has moved online and students need research help 24/7/365, OU’s librarians have worked to provide freestanding online tutorials for anyone on their website. OU Libraries’ website houses a large searchable collection of library tutorials and help documents, available at https://research.library.oakland.edu/sp/subjects/tutorials.php; these resources include both how-to guides on using databases or integrating resources into RefWorks as well as more conceptual tools to help students think about ideas such as the research process or evaluating information. Students can use these resources as they need, but instructors can also link to a specific tutorial (or the broader collection) to support students’ learning needs.

In addition to short, standalone tutorials, OU’s librarians have also created and continue to maintain standalone, self-enrollable e-courses on Using and Citing Sources (also known as the Plagiarism tutorial) and Copyright and You. Students can work through these resources to build their understanding of these key academic concepts. Upon successfully completing these courses with a score of at least 80% on a final assessment, students earn a badge to indicate their competency. They can then share this badge with you as part of a course assignment!

Step-by-Step Instructions
Your next steps depend on your need:
- If you would like your students to complete the Using and Citing Sources e-course (also known as the Plagiarism tutorial), provide them with this link: https://research.library.oakland.edu/sp/subjects/tutorial.php?faq_id=35
- If you would like your students to complete the Copyright & You e-course, provide them with this link: https://research.library.oakland.edu/sp/subjects/tutorial.php?faq_id=173
- If you find your students need help with a specific library-based tool (e.g. database, RefWorks, interlibrary loan system), search the Libraries’ tutorials to see if resources are
available to support these needs. Provide students with a link to the Libraries’ tutorials, or to a specific tutorial.

Course Information
These resources are NOT course-specific – OU’s librarians have designed tutorials and specific online learning modules for lower-division and upper-division undergraduates as well as graduate students! They can help you bring research instruction online regardless of the setting or need.

Ease of Application to Other Courses

EASY MODERATE DIFFICULT

Resources


Research Unbound: An Online Library Orientation for Transfer Students
Contact Amanda Nichols Hess, nichols@oakland.edu, or Beth Wallis, wallis@oakland.edu

Teaching Resource

Learning Outcomes
- Students will be able to develop a research topic and search strategies to find information for an academic or scholarly purpose
- Students will be able to effectively find, use, and evaluate scholarly information available through the resources at OU Libraries
- Students will be able to access research support services through both OU Libraries (e.g. targeted research help, interlibrary loan services, RefWorks) and other campus offices (e.g. the OU Writing Center)

Overview
Transfer students, or those who don’t have to enroll in WRT 160, may miss essential instruction on scholarly research at Oakland University. To address this issue, OU Libraries has designed a self-enrollable e-course, Research Unbound, that faculty and instructors can assign to their students to bolster basic research skills. This e-course focuses on introducing the research process and resources available through OU Libraries with a focus on the needs of more advanced (read: not first-year) students: how to identify and use subject-specific databases; how to get targeted help from a subject librarian; and how to use resources like RefWorks and interlibrary loan. When they successfully complete this e-course, students earn a badge of completion they can share with instructors to demonstrate competency. Faculty can ask specific students to complete this course, or they can require it of their whole classes; they could also use this as a pre-lesson before more targeted, in-depth research instruction with an OU librarian.

Step-by-Step Instructions
1. Review the e-course, available at https://espace.oakland.edu/course/view.php?id=598, and determine if it’s useful in your course
2. Ask students to complete the course and show proof of completion in the form of a badge
3. Consult with your subject librarian to determine if additional research instruction would be useful

Course Information
This standalone e-course is designed as an introductory resource for upper-division researchers. If your students have all taken WRT160, they may find this instruction redundant, so gauge their research capabilities (or work with your subject librarian to do this!) before assigning this task.

Ease of Application to Other Courses
- EASY
- MODERATE
- DIFFICULT

Resources Access this self-enrollable e-course at: https://espace.oakland.edu/course/view.php?id
LIB 250: A General Education Learning Option on Effective Research in the Information Age
Contact Beth Wallis, wallis@oakland.edu, or Kris Condic, salomon@oakland.edu
Teaching resources

Learning Outcomes
- Students will be able to explain how information sources originate and operate in a broader social, economic, and political context
- Students will be able to effectively seek and critically evaluate information found through a variety of research tools (e.g., subscription databases, the open web, library catalogs), and incorporate that information into a culminating research project
- Students will be able to discuss current information-related issues

Overview
With the ever-increasing availability of online and digital resources, it is vital that students be able to find and use information effectively. In response to this need, OU’s librarians developed and offer LIB250: Introduction to library research and technology in the information age. In this online course, students learn about the organization of information, search skills, the research process, discipline-specific sources, the evaluation of information, information ethics and other sources of debate. This course meets the general education requirements for knowledge application and writing-intensive in general education and is open to all undergraduates (with WRT160 as a prerequisite). If you find you have students struggling with research, consider recommending this course!

Step-by-Step Instructions
You can find out more about LIB250 at https://library.oakland.edu/courses/index.html

Course Information
As mentioned, LIB250 is all-online and meets the general education requirements for writing-intensive in general education and knowledge application. It is open to all students who have successfully completed WRT160 and is offered in the fall and winter semesters. It tends to fill up quickly!

Ease of Application to Other Courses

Resources

Nichols Hess, A. & Greer, K. (2016). Designing for engagement: Using the ADDIE model to integrate high-impact practices into an online information literacy course. Communications in Information Literacy, 10(2), 264-282.
Online Library Instruction for WRT 160: A Flipped Option
Contact Beth Wallis, wallis@oakland.edu, or Katie Greer, greer@oakland.edu
Technology Tool & Teaching Resource

Learning Outcomes
- Students will be able to develop a research topic and search strategies to find information for an academic or scholarly purpose
- Students will be able to effectively find, use, and evaluate scholarly information available through the resources at OU Libraries
- Students will be able to have targeted research support time with an OU librarian, if the WRT160 faculty member so chooses

Overview
OU Libraries’ instructional program has a long-standing partnership with WRT160 courses, and the librarians partner with these faculty to help lower-division students learn the basics of academic research. In 2015, a team of three librarians (Greer, Nichols Hess, and Kraemer, 2015) introduced an all-online instructional option for classes that would have otherwise met with a librarian in person; in studying this instructional format, Greer et al. determined that it was equally effective in helping students attain learning outcomes.

As a result, OU Libraries offers WRT160 instructors who would typically bring their students to the library for an in-class instruction session the option of having students complete an all-online instructional module independently, and then participate in a face-to-face follow-up session with a librarian. During this face-to-face session in the library, students can work with the librarian, the instructor, and each other to conduct research on their topics. This flipped option can help to ensure students’ questions are answered and issues are resolved!

Step-by-Step Instructions
If you are a WRT160 instructor: Contact Beth Wallis, wallis@oakland.edu, for more information about the online / work session instructional option. She will help you schedule a work session for your class with one of OU’s librarians!

Course Information
Currently, this option is only available for WRT160 courses, but if you are interested in developing online learning options for a course you teach, contact your OU subject librarian: https://library.oakland.edu/people/subject_librarians.php

Ease of Application to Other Courses

<table>
<thead>
<tr>
<th>EASY</th>
<th>MODERATE</th>
<th>DIFFICULT</th>
</tr>
</thead>
</table>

Resources
Teaching Research Online Through Targeted Moodle Modules
Contact Amanda Nichols Hess, nichols@oakland.edu, or Julia Rodriguez, juliar@oakland.edu

Teaching Resources

Learning Outcomes
- Students will be able to develop course- or discipline-specific research skills, such as developing a research topic, building search strategies, understanding the scholarly conversation in a field, acknowledging authority and its contexts, and the different values of information formats
- Students will be able to effectively find, use, and evaluate scholarly information in specific subject areas available through the resources at OU Libraries
- Students will be able to translate library-focused instruction on research into the context of a course or a broader discipline

Overview
As instruction has moved online and students need research help 24/7/365, OU’s librarians have worked to design Moodle learning modules for specific courses (whether face-to-face, online, or hybrid). We have collaborated with faculty members to create these learning modules about academic research, and they can include:
- Asynchronous interactions (e.g. Moodle books, discussion forums)
- Synchronous interactions (e.g. online chat, WebEx sessions)
- Assessment (e.g. Moodle-based quizzes, other graded assignments)

These kinds of targeted tools are developed by request / need!

Step-by-Step Instructions
If you would like to have a research-focused online learning resource developed specifically for your instructional needs, contact your subject librarian:
https://library.oakland.edu/people/subject_librarians.php

If you’d like to get help developing an online learning module that DOESN’T focus on academic research, we recommend contacting Nic Bongers, bongers@oakland.edu, in eLIS

Course Information
These resources are course-specific but can be developed for ANY class: OU’s librarians have built specific online learning modules for lower-division and upper-division undergraduates as well as graduate students! We can help you bring research instruction online regardless of the setting or need.

Ease of Application to Other Courses EASY MODERATE DIFFICULT

Resources
Collaborative Assignment Design: Utilizing Your Librarian
Contact Shawn McCann, mccann@oakland.edu
Assignment/Assessment

Learning Outcomes
- Students will be able to locate appropriate information and data resources within the context of their course or discipline.
- Students will be able to utilize advanced techniques such as limits, filters, and report builders for finding information within a library resource.
- Student will be able to analyze, download, transfer and synthesize content from disparate online resources into a cohesive, unified project.

Overview
Many students are not aware of the wealth of resources available at the library that go beyond the resources they are introduced to in WRT160. A great way to expose students to these resources is to have an assignment tailored to the offerings of the library that specifically suits the content of your course. Many OU librarians have experience in developing assignments that meet a myriad of needs for both instructors and students. In this arrangement the course instructor serves as subject matter expert for the course and the librarian serves as the expert on library resources. The librarian, then, can provide assessment support (or lead the grading work) where library and information resources come into play. These assignments can be discrete in-class tasks, online activities, or more overarching class projects (think final papers or annotated bibliographies).

Step-by-Step Instructions
To work on a collaborative assignment that integrates appropriate library resources:
1. Review the library website and its wealth of resources (http://library.oakland.edu)
2. Contact your Liaison Librarian. (https://library.oakland.edu/people/subject_librarians.php).
3. Share your syllabus and any other related course documents with your librarian.
4. Meet in advance of the start of classes to discuss possible assignment ideas (the longer the head start the better the assignment will be).

Course Information
These types of assignments are not course or discipline specific; they can be constructed for just about any of the courses taught at OU. As an example, an instructor for MIS 100 worked with the Business librarian to create an assignment where students harvested demographics data for three separate cities in Michigan (Detroit, Ann Arbor, Rochester) from multiple different library resources. The data was compiled and recorded in an excel spreadsheet. From there students used the data to create visualizations that compared the 3 different cities on multiple demographic dimensions that served to highlight how strikingly different (or similar) the three cities are despite such close geographic proximity.
Ease of Application to Other Courses

EASY  MODERATE  DIFFICULT

Additional Comments: These types of assignments work great for anything related to gathering data and statistics, but can work equally well with finding more typical library-related sources like journal articles and books.
OU Libraries’ Multimedia Databases: Rich Resources for Teaching & Learning
Questions? Contact OU Libraries at ref@oakland.edu
Teaching Resources

Learning Outcomes
- Faculty and instructors will be able to integrate content available through subscription databases and provided by OU Libraries into their instructional interactions with students, especially multimedia content
- Students will be able to engage with the high-quality academic information provided through OU Libraries’ subscription databases in their subject-area coursework

Overview
As it works to support the teaching, learning, and research needs of campus, OU Libraries has a number of subscription databases that provide audio, video, and image content faculty can use in their instruction. Whether teaching face-to-face, online, or in a blended classroom, instructors should check out these databases to see if any content supports students’ learning!

Step-by-Step Instructions
- Review the different resources for audio, video, or image information on OU Libraries’ database listing page: https://research.library.oakland.edu/sp/subjects/databases.php
- From this list, identify which resources might be of use and search or browse for content in your subject area!

Course Information
The resources in these databases can be applied in virtually any course in any class setting.

Ease of Application to Other Courses

Resources
- Listing of audio databases available at:
  https://research.library.oakland.edu/sp/subjects/databases.php?letter=bytype&type=Audio
- Listing of image databases available at:
  https://research.library.oakland.edu/sp/subjects/databases.php?letter=bytype&type=Images
- Listing of video databases available at:
  https://research.library.oakland.edu/sp/subjects/databases.php?letter=bytype&type=Video
Primary Resources for Engaging Instructional Environments

Contact Emily Spunaugle, spunaugle@oakland.edu
Dominique Daniel, daniel@oakland.edu

Teaching resources

Learning Outcomes

- Students will be able to ask questions to analyze primary sources’ creation and dissemination.
- Students will be able to effectively find, use, and evaluate primary sources available through the resources at OU Libraries.
- Students will be able to integrate primary source materials into assignments, incorporating them with secondary and other scholarly sources.
- Students will be able to cite sources correctly and articulate the copyright responsibilities they have as creators / users of content.

Overview

Digital and physical collections of primary sources available through OU Libraries can illuminate your course content. OU Librarians can advise, co-create, or fully design an instructional experience to help your students examine logic and visual rhetoric; question creator/audience relationships; contextualize and interpret past lives, institutions, events and practices; and question the material conditions of a document or text. In a custom learning environment in line with your course goals, OU Librarians can model techniques for effective critical analysis of primary resources, regarding their creation, purpose, and transmission, and how these analyses can be folded into scholarly conversations.

Step-by-Step Instructions

Your next steps depend on your need:

- Want to supplement course content with audio or video clips, or primary source documents? Browse our subject guides for suggested e-resources at https://research.library.oakland.edu/sp/subjects/index.php, or contact Dominique or Emily for suggestions.
- Want to create a tactile learning experience for your students to experience archival materials firsthand? Contact Dominique or Emily to develop a library instruction session in line with your course objectives.
- Want your students to embark on individual research projects using a rich variety of source materials? Contact Dominique or Emily to create custom course guides and schedule consultations.

Course Information

Primary resources create meaningful learning opportunities in a variety of disciplines, including courses in literature, creative writing, cinema studies, history, public history, communications, art, art history, and the Honors College.
Ease of Application to Other Courses

Resources

- Why Use Primary Sources--Library of Congress
  http://www.loc.gov/teachers/usingprimarysources/whyuse.html
- Special Collections at OU: information about accessibility, finding aids, and links to online collections: https://library.oakland.edu/collections/special/
- Archives at OU: information about accessibility, finding aids, and links to online collections: https://library.oakland.edu/archives/
- Browse subject guides for audio, visual, and textual resources:
  https://research.library.oakland.edu/sp/subjects/index.php
Incorporating Research Data Management into Curriculum
Joanna Thielen, University Libraries, jthielen@oakland.edu
Type of Strategy: In-person instruction

Learning Outcomes
After receiving research data management (RDM) instruction, students will be able to:
- Articulate the benefits of RDM
- Know at least three RDM best practices within a particular data topic (how to organize data, how to store data, etc.)
- Implement these practices into their own research workflows and personal lives

Overview
This academic year, OU Libraries has started offering instruction in the area of research data management (RDM). RDM is the compilation of small practices that makes data easier to find, easier to understand, less likely to be lost, and more likely to be usable during a project or ten years later. As students develop their research skills through research methods courses, internships or independent study, they may not learn how to organize, store, or preserve their scholarly data. RDM instruction provide practical best practices on a variety of data-related topics, from how to find existing datasets to how to safely store data. Additionally, many best practices are applicable outside the area of research data such as how to create an effective digital file organization system.

Step-by-Step Instructions
1. Invite the Research Data Librarian (Joanna Thielen, jthielen@oakland.edu) to your class! She'll need some basic information about your course (# of students, student level of experience with research, etc.) as well as the course syllabus and any relevant assignments.
2. Joanna prepares and delivers that presentation during your class.

Course Information
The target audience for this type of instruction is upper level undergraduate and graduate students. Ideally, this instruction will occur as they are beginning their research. The goal is to provide them with research data management (RDM) education before they develop their research processes/habits. In past instruction, we’ve found that faculty often gain new knowledge too! RDM instruction is applicable to every discipline. So far, this instruction has been implemented in Education, Biological Sciences, and the Honors College.

Ease of Application to Other Courses
- EASY
- MODERATE
- DIFFICULT

Additional Comments

Resources
Interested in scheduling a RDM instruction session? Contact Joanna Thielen, Research Data Librarian, via email jthielen@oakland.edu. In addition to in-class workshops, OU Libraries also provides individual and small group consultations and workshops for faculty meetings, lab group meetings, etc.
An overview of research data management and various data topics can be found on the Research Data Support section of the OU Libraries website: library.oakland.edu/services/research-data/