LEARN Examples

Example #1

One of my greatest strengths as an instructor is the ability to adapt to differing student learning styles. I have taught students from very diverse backgrounds. While a doctoral student at the University of Michigan, I taught undergraduate political science classes. The majority of students were from high socio-economic brackets (Nishimura, 2009). Next, I was hired as an Assistant Professor of Behavioral and Social Science at Indiana University-East (IUE) in Richmond, Indiana. I had applied for a posted position in criminal justice; however, after an interview, this position was created so I could teach in multiple disciplines (social work, political science, criminal justice and sociology). IUE has a rural student body comprised of many first generation college students. After two years, I was hired in my current position as an Assistant Professor of Social Work at IUPUI, an urban campus. Additionally, I teach as adjunct faculty at the Indiana University School of Law-Indianapolis and Maurer School of Law in Bloomington. Throughout my career as an educator, I have received positive student evaluations; however, I constantly reflect upon teaching techniques and strive for improvement.

The most challenging course I teach is an undergraduate social work research class each fall semester. Research classes are dreaded by most social work students. As one student reported in a course evaluation, —Great class in spite of the subject matter. It is also a course students enter with greatly varying background knowledge, so some students feel uncomfortable asking questions they perceive might be silly. Both quantitative and qualitative Student Evaluation of Teaching (SET) scores have been positive since I started teaching the class in 2007, but I was troubled by how wide the grade distributions were. Some students grasped the material very well while others struggled. Additionally, I spent a significant amount of time fielding questions in office hours and by email that I thought I had covered in class.

After teaching the course for three semesters and reflecting upon the needs of students at the lower end of the grade distribution, in 2010, I decided to implement a Classroom Assessment Tool (CAT) (Angelo & Cross, 1993). The muddiest point CAT entails asking students to write down at least one point that they are still confused about at the end of each class session. The instructor can then review the responses and prepare a brief discussion of the most common muddiest point for the beginning of the next class session (Mostellar, 1989).

I empirically tested the muddiest point CAT’s effectiveness by only implementing the CAT in one of two sections with the same course material and assignments. The experimental section was given the opportunity to write down the muddiest point at the end of each class session. Typically one muddiest point would emerge among students, and I would lead a discussion of the muddiest point at the beginning of the next class session. The muddiest point CAT was even more useful than I anticipated, because it often allowed me to understand the problem in my explanation of the muddiest point to students. For example, the week we discussed single subject design methodology, a single muddiest point theme did not emerge from the data; however, I was able to understand why confusion on this topic was so high. During lecture, I had used a different example to explain each phase of a single subject study.
The first phase of a single subject design is baseline, the second is intervention, and the final is follow up. When discussing each phase, I used different hypothetical study examples. During my own reflection and preparation to address the muddiest point, I realized that student comments were confusing the three phases and examples, and that utilizing one example to explain the phases of single subject research from start to finish would greatly enhance clarity. Therefore, at the beginning of the next class section, I utilized one example to demonstrate the flow of a single subject study, and students responded that the concepts were suddenly clear. I have found the muddiest point CAT to be an excellent self-reflection tool to aid in clarity of my explanations, and to ensure my language used to describe concepts toes the line between professional and accessible.

In 2010, the control section was taught in the same way as the experimental section, minus only the muddiest point requests and explanations. In the empirical analysis between courses, the experimental class average course grade was 89.9%, compared to the control group average course grade of 85.8%. The classes were too small to demonstrate statistical significance. Therefore, in order to have a larger sample size and broader data in terms of discipline and student demographics, I am currently collaborating with a colleague at the University of Wisconsin. She is utilizing the muddiest point CAT with a group of students in an undergraduate criminal justice class, and also has a control class. We are in the process of preparing a manuscript on the effectiveness of the muddiest point CAT and will be submitting it for publication.

The quantitative assessment of the muddiest point reflected effectiveness through student grade outcomes, and qualitative assessment in student evaluations were also positive. In the experimental class, in response to what aspects of the class facilitated learning, a student reported: —Instructor enthusiasm and willingness to take additional time to make sure we understood the material. Another said, —Dr. Boys was good about offering clarifications when we were confused.

Upon empirical evidence of the CAT’s effectiveness, I continue to utilize it in all sections. The CAT fits squarely with my teaching philosophy that students should be able to apply information rather than just memorize definitions. The muddiest point CAT allows students to ask questions and inform the instructor if they do not feel comfortable with their understanding of the definition of a term. The exams in the research course are take-home, open-book essay exams, which require application of concepts to a clinical scenario rather than rote rehashing of definitions from a textbook.

An additional benefit of the assessment of the CAT in a research class is that it provided an opportunity for modeling. At the end of the semester, I was able to explain the study to the students from beginning to end stages. I explained how IRB approval was obtained, why a consent form was waived, the purpose of the research, how various research terms from the class applied to the study, and how the findings would be analyzed and published. Students expressed great interest in reading the manuscript. My strategy to engage undergraduates in research courses is to demonstrate that research is useful and all around them, and this provided yet another example. At the conclusion of this class, one student reported in the course evaluation, —This was a very boring subject, but the prof. made me want to listen. If she taught every class, I’d go get my PhD.
Another course that I teach regularly is a Master of Social Work course on public policy analysis. The class objectives are for students to know the current state of social policy and to advocate for change of those policies that are incongruent with the National Association of Social Workers’ values. At the beginning of the semester, students often report apathy toward policy and their ability to influence policy. Therefore, an assignment I designed to alter their perceptions of the difficulty of being involved in politics requires students to interview a legislator in groups of about four students. Each group must select and contact a state senator or representative (precautions are taken to ensure each group selects a different legislator). Groups then conduct a semi-structured interview of the legislator to learn such things as how the person got involved in politics, how the legislator educates him or herself on policies under consideration, and how much influence public opinion holds over the legislator. The groups then present a half an hour profile of their legislator. The intended outcome for students is to view legislators as people just like us, approachable, and each with their own personality.

In order to assess whether the assignment has the desired outcome, I have recently begun pre and post testing students on their likelihood of contacting a legislator regarding policy issues and their comfort level in speaking with legislators. In the three semesters that I have been conducting this assessment, results have been overwhelmingly positive. In response to the question of how comfortable a student would be contacting a legislator, ratings on a Likert scale, with 1 being very uncomfortable and 5 being very comfortable, went from an average of 1.27 at the beginning of the semester to 4.13 at the conclusion of the course. In response to likelihood of contacting a legislator in the future, scores went from 1.13 (very unlikely) to 4.03 (with 5 being very likely). Other faculty members have since implemented this assignment into their syllabus for the course and it is used in the Master of Social Work course master syllabus.

A graduate student who took my course on public policy analysis sent an unsolicited email expressing that my goal of student application of and reflection on course material outside the classroom was successful: —The passion with which you teach this course is absolutely infectious. Each week, I come to class having read materials that are challenging and thought provoking to then engage in critical discussion about the issues that affect our society significantly. Your diversified pedagogy (lecture, discussion, video, writing assignments, field trips, etc.) are exciting and captivating...While you focus on theory and policy, you make sure that we can apply the knowledge we gain in class to our professional choices outside of the classroom.

The most current example of my impact upon student learning at Indiana University is the implementation of an interdisciplinary service learning opportunity for law students and social work students. In 2010, a clinical law professor and I conducted a qualitative needs assessment in the Indiana University School of Law—Indianapolis. Data analysis revealed law students’ need and desire for more formal training in interviewing and counseling skills (Boys & Hagan, under review). In light of the results of the needs assessment and documented enthusiasm by law students for more interpersonal skills training, the team proposed to place social work students in the legal clinic to provide interviewing, referral and counseling assistance. We secured funding for the clinic through a 2011 Curriculum Enhancement Grant from the Center for Teaching and Learning, and the clinic will become interdisciplinary in January 2012.
The clinical law professor and I are designing, implementing, and directing the clinic through a team teaching approach. We will co-teach a course as part of the clinic, and pair law students and social work students to work together for the service learning component. The clinic aims to serve clients’ holistic needs by pairing students from different disciplines. The law student will address the clients’ legal issues and the social work student will ensure the clients are connected with appropriate social services, such as domestic violence counseling and social welfare benefits. The teamwork between students will increase law students’ aptitude in client-centered lawyering, and will familiarize social work students with the legal rights and resources available to clients. Students will more effectively and efficiently serve community members in need of legal counsel and social services, resulting in a clinic that is beneficial for both students and community members.

The interdisciplinary clinic is a response to the needs assessment we conducted at Indiana University and builds on decades of literature that consistently shows interdisciplinary collaborations to be effective educational tools (Weil, 1982; Brandon & Knapp, 1999; Coleman, 2001). Additionally, interdisciplinary work has been repeatedly praised as having both intellectual and administrative benefits for higher education (Weinberg & Harding, 2004). Finally, the interdisciplinary clinics have also been shown to enhance client service (Weil, 1982). Referrals for the clinic are obtained through Indiana Legal Services, and many clients do not have resources to retain legal counsel or other services by any other means. The efforts of this clinic directly serve members of our community.

The law professor and I are currently assessing whether introducing an interdisciplinary component to the clinic increases law student interpersonal skills through a quantitative pretest/posttest research design. In fall 2011, the clinic course is being taught as usual, by a law professor to law students. The students are completing an interpersonal communication skills inventory at the beginning and end of the semester to assess improvement in interpersonal skills through a semester without a social work component. In spring 2012, the clinic will become interdisciplinary with a new set of law students and social work students, as well as an interdisciplinary team teaching approach. Again, students will be pre and post tested on the interpersonal communication skills inventory, with the working hypothesis that the interdisciplinary component of the clinic will increase law students’ end of the semester interpersonal skills.

Implementation and evaluation of the clinic is also an opportunity for me to mentor a doctoral student. I am currently working with a research assistant who is a first year doctoral student in social work. She is an excellent fit to work on this project because she has a law degree and practiced law for several years. She has been an integral part of designing the clinic and planning the assessment.

References


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Example #2

Background/Description of the Learning Episode
I am going to describe a learning episode that involves P504. This course is a three-credit core class in the Masters of Public Health Program (MPH). Students take P504 during their first year in the program. For non-health policy and management concentration students this is the only health policy class they are required to take. The MPH program has a wide variety of learners including around 50% of students have just completed their undergraduate degree, students with 25 years of experience working as public health professionals and practicing physicians. We also have about 5% of the students that are international, primarily from Africa and Asia. Meeting the needs of a wide range of learners is a challenge for all of the core MPH courses. I have taught P504 U.S. Health Care Systems and Health Policy in the classroom since 2008. I developed it into an online course through a jump start grant, and it was offered online for the first time in the fall of 2009. I am currently teaching P504 online twice a year during the fall and summer semesters.

Recognition of the Need for Change
In the student comments for P504 from the fall of 2010, one student wrote, “I was disappointed by this class. There are so many interesting health policy changes going on in our country and we did very little to learn about current issues. I understand needing to learn the background and basis of change, but that should be tied with current activities.” Incorporating more current content and activities around the Affordable Care Act (ACA) of 2010 was also a goal of the health policy and management division.

Approaches taken to Improve Student Learning
In response to this comment and the division goal, I implemented several changes to the course activities. The students had been finding out about their state or federal representatives and senators, I started requiring them to read about recent legislation their legislator had sponsored and writing an email or blog comment in response to that legislation. This authentic assessment helped them to know more about current legislation, but also how to communicate with the legislator about that current issue. I also added an assignment of writing a policy brief about the Affordable Care Act. The student briefs are going to be incorporated into a website the department is constructing about the Affordable Care Act, so the work of the students will be used to assist us to inform the general public. These activities are illustrative of my teaching philosophy of communicating high expectations and using active learning techniques.

I have the students research a particular section of the ACA, since it will have a significant impact on the student’s future education and career. The activity is to deepen the students understanding of the key provisions of the legislation and to help them learn how to write a policy brief. The policy brief requires succinct consideration of policy options for a particular audience (e.g. official, bureaucrats, politicians or donors). Because these potential readers only have a limited amount of time to read and make decisions the information must be very concise. An example is a student who focused on what the governor should consider as he decides how to implement The Health Exchange that will require state action.
Assessment of Approach taken to Improve Student Learning

The students write a reflective summary at the end of the course and identify what activity was most meaningful to them and why it was important. The group activity “Sick Around the World” was identified by 37% of the students as the most meaningful, since it helped them to learn about health care systems in other countries and how they compare to the U.S. system. The group activities support my teaching philosophy of developing relationships and cooperation among students. Even with an online class I set up a forum for each group and have the live chat function available to facilitate the student groups ability to work together. The ACA brief was the second highest activity, and was selected by 24% of the class. One student wrote “this gave me insight into health care and where current legislation is taking the healthcare industry and I became more aware of the different aspects of the PPACA that I didn’t fully understand previously.” I had two students who took very specific political action as a result of the course. One wrote she went up and introduced herself to her state senator at a work event, since she had researched information about him and told him about working on her MPH degree. She offered to provide him with background information on health topics. Another student joined the Juvenile Diabetes Foundation advocacy group and is setting up an appointment with her congressional representative to gain support for legislation to advance an artificial pancreas project. The actions from these students support my teaching philosophy of communicating high expectations of the learner. They were able to apply the classroom activities in real world situations.

In addition, here are comments from three other students who completed P504 in the summer of 2011, the next time I taught the course:

1. “I can say with certainty this class has been beneficial to me and that I have enjoyed taking this course and learning.”

2. “This basic information on how our country operates is so very important to the public health profession. I always thought, but now know, that being current on legislative issues affecting health is imperative not only to be “in the know,” but also to be of potential service to different advocacy groups and committees which may need an expert to speak on their behalf.” This student’s comments support my teaching philosophy of the benefit of using active learning techniques. The student will be able to use this information as they continue to work in the field of public health.

3. “This class was very valuable to me; it gave me the resources to understand how the health care system in the US is organized and how it differs from other countries. I really enjoyed the "sick around the world activity" and the knowledge I obtained has helped me beyond this class. Recently, I have been working with colleagues from Japan and Germany, and having basic knowledge on how their health care system works and the role of pharmaceuticals in those systems, has given me a competitive advantage. I have improved my understanding of their questions and concerns and I’m able to provide them with better support. Overall, the knowledge obtained through this class has given me the confidence to speak up and the tools to continue my growth in this arena, as well as, find the data to develop and provide informed opinions. I’m excited about the future possibilities that this learning has given me and I’m
looking forward to continue courses on this topic.”

Another approach to evaluation which supports my teaching philosophy of respecting the diverse ways of learning among students, is to examine changes on a pre and post assessment tool that the students complete. As part of the course I use a pre and post-test called the Political Astuteness Inventory (PAI). This 40 “yes or no” question tool was developed by Clark (1984) to measure political astuteness in nurses. An overall score is found by summarizing the questions when they answered “yes”, and it indicates four levels of political astuteness. The lowest level is the individual is “totally unaware politically”, up to the level that the individual is “politically astute and an asset to the profession” (Clark, 1984). PAI was adapted with permission to use public health professional instead of nursing professional and public health organizations instead of nursing organizations. IRB permission was sought and granted to use this tool as a part of P504.

A total of 147 students had used the tool when I did an evaluation with a MPH student to evaluate the changes in the PAI scores. At pre-test 42.9% of students were totally unaware politically, 49% were slightly aware politically and 5.4% were beginning to be politically astute. Only one person was at the highest level of being politically astute on the pre-tests. After the P504 course only 4.8% were totally unaware politically, 44.2% were slightly aware politically, 43.5% showed beginning political awareness and 2.7% were politically astute.

Using a matched pairs t-test for comparison, the mean of the pre-test to the post-test showed there was a statistically significant increase in political astuteness. Items with the greatest change were the following items:

- Knowing the process by which a bill is introduced in the student’s respective state legislature
- Knowing whom to contact for information about health-related policy issues at the federal or state level
- Knowing which house and senate committee usually deals with health-related issues
- Knowledge of at least two health-related issues that are currently under discussion at the state or national level
- Awareness of the stand taken by a state senator or congressional district representative on one current health issue
- Knowledge of the names of state senators in Washington, DC
- Knowledge of the names of congressional district’s representatives in Washington, DC
- Knowledge of at least two issues related to the students respective profession that are currently under discussion at the state or national level

**Reflection on Assessment Data**

The student’s response to the changes I have made in P504 indicate they have gained more information about the U.S. healthcare system and how to influence health policy which are the
goals of this course. The students indicate in their reflective comments that they know how to apply information to be able to influence how policy decisions are made. I believe the changes in the pre and post PAI scores and the student's reflection on the pre and post PAI scores have supported the changes I made in the course. It is clear that my efforts have improved student learning. The student activity to look at current legislation that has been sponsored by their legislator, and research and write about the ACA meet the need to focus more on current legislation which was the concern of the episode from the fall 2010 student evaluation. These changes support my philosophy to use active learning techniques and to communicate my expectations as advocated by Chickering and Gamson.

In order to continue to build upon these changes in the fall 2011, another section of P504 has been added. This new section of P504 has instituted doing the pre and post- PAI and a ACA policy brief activity. We will be doing an analysis at the end of the semester, to see how the assessment scores in the two groups compare, and the grading rubric scores on the ACA activity. The other P504 section is taught in the classroom during the evening and my section continues to be taught online. I will be working with our new Health Policy and Management PhD student who is the TA for both sections to do this review.

Reference

Example #3

Learning Episode
Getting Beyond “I just want to know what you want me to write in this paper”

Introduction: The “Right” Answer?
Studying literature can seem a subjective exercise in trying to guess “what the professor wants” a student to say in an essay or discussion. Yet it is as much about how we raise questions as how we answer them, and discussions and analyses are stronger or weaker depending upon the level of clarity, originality, and explanations of the evidence provided. Thus, I emphasize open-ended discussions, portable skills, and exploratory thinking as much as the content of a theme or period of literature and my classes stress the building-blocks of close reading to show students that literary analysis draws upon specific methodologies with established standards of evidence. What follows is a reflection upon how I work to achieve this for 300-level U.S. Literature students.

300-level Literature Courses and Close Reading
The courses I teach cover three periods of U.S. literature leading into the 20th century: ENG-L 350 (pre-1800), ENG-L 351 (1800–1865), and ENG-L 352 (1865–1914). These courses consist of 15–30 students from differing backgrounds: English majors, Education majors, and students pursuing studies inside or outside of the humanities—often with little experience in English classes. “Close reading” is crucial at the 300 level, the highest-level classes in literary analysis that undergraduates take (except Senior Seminar for graduating majors). While students usually need development of close reading skills, this can differ according to background; non-English majors, for instance, often need more practice forming an evidence-based textual analysis—by focusing intensely on one paragraph, sentence, or even phrase—as opposed to one based purely on a vague reaction. All students require sustained instruction and practice at crafting concise analytical paragraphs with a focused argument and logical structure.

The Need: From Close Reading to Written Argumentation
In addition to the needs suggested above, my analysis of data collected shows that students struggle with the skill of textual analysis and transferring that into written argument. I have discovered this in two ways: through continued observations of students’ contributions in discussions, in which students draw less upon acceptable evidence and more on anecdotal or personal reaction; and in my analysis of their longer argumentative essays (4–8 pages), in which students struggle to craft a clear, original and interpretive thesis and focused, argumentative paragraphs that work in direct support.\(^1\) I have also noted this need in students’ responses to

\(^1\) Brookfield and Preskill, in *Discussion as a Way of Teaching* (1999), explain that “Guided discussion is a self-negating concept if it means guiding talk toward a particular position or point of consensus” (24).

\(^2\) A note on assessing needs: Essays analyzing literature do not lend themselves as easily to quantifiable data in the same ways as, for example, quizzes and mid-terms. Yet they are immensely valuable as the principal tools of assessment, for they propel students to utilize higher-order thinking skills such as synthesis, application, and evaluation.
end-of-course evaluations and mid-term informal surveys (via online survey tool).³

Assessing and Addressing the Need: Three Semesters of L35x

To prioritize and address the need to build students’ skills in textual analysis and transfer that into written argument, I have tested and worked to refine a key assignment used in many humanities classes: the reading response, a regular piece of written work analyzing the day’s reading and posted in advance in the Forum section of the online course page. This activity—linked with others as part of discussion—addresses the need identified in several ways, including offering regular opportunities for student practice with professor feedback and fostering the development of skills of analyzing individual passages that can then be scaffolded with other skills as part of a larger written argumentative analysis. It also ensures that students have done the day’s reading, are mentally prepared to discuss it, and can explore and test interpretive ideas in a relatively low-stakes environment. I have collected data to judge the effectiveness of and refine specific practices within a given class and over different semesters.

Fall 2009: ENG-L 352 (U.S. Literature 1865–1914)

Except for weeks in which a larger essay was due, I required each student to post a response to the Forum before class once per week. I included no word limit or minimum and offered no specific prompt except the following options: posting a question to guide class discussion, responding to a classmate’s posting, or writing an interpretive paragraph with a clear argumentative topic sentence and a close reading of a textual passage in support. To encourage risk-taking, I did not grade them numerically.

While the assignments were in many ways successful, as students participated actively, raised questions to guide discussion, and tested possible interpretations, overall their larger essays and abilities to closely read passages did not advance as much as I had hoped. Quantitatively, their three major essays averaged in the 82 to 84 range as a whole, which indicated some success. Yet a majority of essays lacked the consistency of analysis that I sought in terms of using multiple examples from different sections of the text(s) and offering original readings that we had not deeply explored in class. The assignment helped me recognize the immense value of offering regular and multiple opportunities for student practice with professor feedback if structured in a viable way for both parties. Given that students’ reading assignments were often quite demanding, and that I read every response and posted 4–5 sentences in comments, such a frequent (weekly) response proved unsustainable. Moreover, in the SET narrative responses, one important comment requested further practice in connecting these forum responses to class discussion and to the moves made in essays.

Spring 2011: ENG-L 352 (U.S. Literature 1865–1914)

For my next offering of this class, I thus altered the assignment in the following ways:

- I required only three responses out of five opportunities
- I required students to address a specific topic and practice a particular body paragraph

³ As Robert Boice (Advice for New Faculty Members, 2000) notes, proactive and early seeking of meaningful student evaluations is central to assess student learning and make needed adjustments (58–59).
format, which I taught using *Guidelines for Critical Reading, Thinking, and Writing*. This introduced the “AXES” model, which includes an **A**ssertion (or topic sentence that is not summary but an argument), **E**xamples (at least one passage quoted from the text), **X**planation of specific words, metaphors, images, etc. from that example, and **S**ignificance, explaining how that example related to an overall interpretive argument

- I offered a much clearer and more comprehensive handout explaining what is required
- I commented on and graded the responses, which made up 10 percent of the course grade.

The results were mixed. Some responses improved from the previous class; their average grade was 83 percent (slightly lower than what the previous class would have achieved if I had numerically graded their work) and usually by the third response a student was attempting a focused argument via the AXES format. Yet students’ main papers declined from previous semesters, averaging in the C+/B- range. Upon reviewing the data and student evaluations, I concluded that there were not sufficient opportunities for practice with only one response due, on average, every month of the course. At least three comments on SET data confirmed this, indicating a desire to expand the role of the forums.

Fall 2011: ENG-L 351 (U.S. Literature 1800–1865)

For my current course, I have used the data from previous semesters to restructure and strengthen the response assignments in the following ways:

- Grading and commenting upon every response, which provides impetus to take the assignment seriously and an immediate signal regarding how students are reaching the assignment goals
- Requiring students to complete at least five out of seven, with the possibility of completing more and counting only the best five; this utilizes what Ken Bain in *What the Best College Teachers Do* (2004) notes as a central motivating tool: offering students “many chances to demonstrate their learning,” including revisions (36)
- Specifying in assignment guidelines that students must follow the AXES paragraph model and stay within a 250-word limit, which promotes greater focus
- Offering posted reading questions to help guide their thinking or, as in the case of the particularly daunting *Moby-Dick*, a “reading guide” that suggests several passages to consider prior to class
- Posting a topic/question, making this quite specific (and thus as a point of departure for discussion that day) or leaving more room to foster student originality. For example, a recent prompt offered two choices: A) Make and support an interpretive claim on the conflict between Ahab and Starbuck (*Moby-Dick*, pages 139–140); or B) Consider and respond to, with an interpretive claim, any of the questions listed in the posted Reading Guide
- Introducing, on a weekly basis, an example of a student response to collectively consider how it achieves assignment goals. This shares student successes and helps them identify which aspects of the example—and their own work—are functioning well and which need additional attention

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4 Hellen Lee-Keller, Copley Custom Textbooks.
• Including, on a bi-weekly basis, in-class work in which groups create an argumentative topic sentence based on a close reading of an assigned passage. In this way, the responses are part of a larger set of activities, including full-class discussions and instructor-led examples, used to reinforce the same goals.

The results of these changes are thus far encouraging: the first two larger essay grades are higher (average: B range) and many papers are offering original, insightful, and focused analyses. In addition, the grades for the responses themselves are also higher than in the past (87% average), as students are following the AXES model to craft sharp, evidence-based arguments.

Illustration: Student Work
To illustrate the progress resulting from my assessing, reflecting upon, and revising this assignment, below I include examples (in italics) from and reflections on one student’s work to show how the responses have improved through this practice and led to a more successful essay.

Student’s early forum response: For the characters in Child's *Hobomok* Native Americans are categorized in two separate ways. In one way, they are characterized in a subservient role to the white people living in Salem and Plymouth. The others fit into a category of enemy. The character Hobomok himself falls into the role of guide, informant and protector of the Conant family. "...for Hobomok, the moment his errands were hastily delivered, had returned to guard them with the quick eye of love, and the ready arm of hatred." (Child 41) He is accepted by the white people as long as he is of use to them. For instance, they inquire of him at the group counsel for crucial information about the surrounding tribes and their motives towards the white colonists. He acts as a mediator between the natives and the colonists. "The quiver of the Pequod is full of arrows, replied the Indian; his belt is the skin of a snake, and he suffers no grass to grow upon his warpath. He needs not the sinew of the Narragansets to draw the arrow to the head." When called upon, Hobomok divulges the hidden agendas of other Native Americans.

Comments: While the response is offering a general topic—the two ways the novel *Hobomok* presents Native Americans—it lacks a clear focus and interpretive argument, expressed in a clear topic sentence, that indicates how the text is thus commenting upon a larger issue. In other words, the argument and analysis stay at the level of what we learn about a specific character. It also offers multiple pieces of evidence but not a complete explanation of how they support an argumentative statement. (Grade: low-B range)

Student thesis and one sample body paragraph for later paper: Although both authors express the importance of the shared universal connectedness of humankind and the call to action, there are disparities between their definition and implications of these concepts; such disparities reflect the discourse of inequality between men and women during this time and are demonstrated through the literary strategies of Emerson in “The American Scholar” and Fuller in *Woman in the Nineteenth Century* …

Meaningful action in regards to reform is another common, yet implemented disparately, concept shared by both Emerson and Fuller. Emerson’s describes the concept of meaningful action in one way as “find[ing] consolation in exercising is the highest functions of human nature. He is one, who raises
himself from private considerations, and breathes and lives on public and illustrious thoughts" (1741). Emerson is maintaining that meaningful and purposeful action to reform a nation thrives outside the realm of private life and that men will find security in the actual public living of their lives. 

...[additional example omitted for brevity] Divergently, Fuller argues that meaningful action can occur on a more private level. She urges women to “hold not [themselves] excused from acting in private. Seek out these degraded women, give them tender sympathy, counsel, employment. Take the place of mothers, such as might have saved them originally” (1833). In other words, Fuller suggests that although it may be deemed inappropriate for a woman to take meaningful action for reform in a public sphere, she is still capable of demonstrating purposeful action through her private life. The difference in these two arguments is that Emerson, being a male, deems that purposeful action can and should be conducted in the eye of the public, while Fuller, being a woman, in acknowledgement of the disparity between the sexes, knows that women during this time period cannot act publicly without facing ridicule and prejudice. ...

Comments: The student has progressed well from the earlier response by crafting a thesis linking the individual sections of the entire essay and a body paragraph that offers a clear argumentative focus. Although the former could more specifically explain the “disparities” between Emerson and Fuller, and the latter could be clarified with a stronger topic sentence early on (a solid statement appears later in the paragraph, which I have marked in bold), these demonstrate the progress this student made after practicing the skills of close reading and analysis in both responses and other assignments. (Paper grade: Low-A range)

Future Plan Based on Previous Data and Strategies
Beginning in Spring 2012, I will draw upon the lessons from my experiences and these reflections, modifying the assignment as follows:

- Continue with insistence on AXES paragraph format and 200-word limit
- Continue with a minimum of five responses
- Continue to refine instructions and offer examples of how responses relate to larger essays
- Provide new opportunities for students to write responses after the class meeting and to respond to each other’s postings; students have noted in evaluations that this will allow them to continue the discussion in productive ways and offer additional avenues for participation—a key concept in my teaching philosophy: the idea that what we discuss and engage with in class is only one aspect of a larger sense of continued learning that branches outside of the classroom.

By building in multiple opportunities for written practice with professor comments, expanding these opportunities to include both before- and after-class responses, and continuing to reinforce the skills needed through discussion configuration, workshops, and small-group work, I hope to most effectively address a lack in students’ ability to craft an original, interpretive, and focused argument that considers how a text is engaging with a larger issue; that is, how it is ultimately making a claim, through its narrative presentation, about a specific topic/concern from its historical period. This should take students well beyond the question of “what the professor wants” and into the realm of developed, independent thinking.
Example #4

Description of Teaching Situation
The teaching situation described here takes place as part of EDUC E345, *Language Arts and Mathematics for the Young Child*. I chose to reflect upon this learning episode because it is an example of a series of constructivists lessons connected to real world experience that leads to an authentic learning experience measured by an authentic assessment. Students in E345 are juniors in their first semester of the teaching program and have completed all the pre-requisites for admission into the Elementary Education Program, including mathematics content and foundations of education courses. Thus, these students are referred to as “teacher candidates,” or simply “candidates.”

I co-teach this six credit hour course with a language educator. My responsibility is teaching three of the six credit hours focused on early childhood (grades Kindergarten – 2nd) mathematics methods. All candidates enrolled in this course are required to enroll in an associated one credit hour field (clinical) experience. Prior to the fall of 2009, candidates were placed in a variety of Kindergarten through 6th-grade classrooms. Beginning in the fall of 2009, candidates were placed with a kindergarten student.

This narrative documents a three-stage progression of modified instructional sequencing related to a major assignment in this course, an assignment that required the candidates to make sense of a child’s mathematical thinking, in order to impact candidate learning. The field placement serves as the data collection point for this assignment. Candidates are asked to collect and analyze evidence of a Kindergartner’s numeracy and literacy development, and present the results in the form of a case study. This narrative explains how instructional strategies were modified in order to help candidates better reflect on their own learning and make important connections between practice and theory.

Recognizing the Need for Change
EDUC E345 is a combined early childhood mathematics/literacy methods course that is structured around the important developmental milestones in early mathematics and language learning. Within their coursework, candidates are exposed to education theory related to these developmental milestones through course readings and discussions and are expected to recognize these theories in practice as they participate in field experiences. The case study (see Item A in supplemental materials) is the major assignment in this course, documenting the candidates’ ability to recognize important developmental learning markers in early childhood literacy and numeracy. As the mathematics methods instructor, I am particularly interested in the candidates’ ability to recognize developmental markers in early numeracy, primarily focused on the big ideas in counting, addition and subtraction, and place value.

The case study assignment existed as the major course assignment in EDUC E345 prior to my arrival at IUPUC and remained unchanged during my first academic year at the institution. Since both portions of the course (language arts methods and mathematics methods) were taught by adjunct instructors in years prior, with the language arts portion continued to be taught by
adjunct faculty through spring of 2009, I knew little about the type of instruction that was implemented in the course in support of this assignment. I initially considered this assignment as a standalone evaluation of the candidates’ ability to engage in dialogue with a child around the child’s understanding of mathematics, knowing that the candidates may or may not have the opportunity to engage with a learner of early mathematics due to the varied field placements throughout grades K-6. I resigned myself to the idea that this assignment would provide me with very little evidence of what the candidates truly understand about early childhood mathematics. Instead, I intended the assignment to provide evidence of the candidates’ ability to self-reflect upon what they consider to be a teacher’s role in numeracy development.

The first indication that change was required occurred after the first round of scoring case studies in the fall of 2007. Candidates’ reflection scores on the reflection portion of the assignment (first column of the scoring rubric shown in part 2 of Item B in supplemental materials) and connecting with course content (second column of the scoring rubric) were extremely low. My concern lay in the fact that as the class studied early childhood number concepts, such as counting, some candidates were working with older children in their field experience who had progressed on to more advanced mathematical topics. As a result, the candidates did not have professional, theory-driven professional vocabulary at their disposal to explain the thinking they witnessed in these older elementary children. The example below exemplifies the type of surface-level analysis and reflection of the majority of candidates placed with older learners during the field experience component.

Recognizing that scores were not likely to improve without additional opportunities for the candidates to witness early childhood mathematics theories put into practice, I refined my teaching in the three subsequent semesters. I structured the teaching in my classroom to model the process of getting to know a child through a virtual case study experience, using a series of video-recorded one-on-one interviews between a kindergarten learner and a teacher. I noticed that even though the instruction in support of the case study assignment exposed the candidates to early childhood mathematics learning theory, resulting in better connections to course content (second column of the scoring rubric), reflective practices still suffered as students often had difficulty relating to the teaching and learning seen in video-taped segments. By the spring of 2009, I also realized that the combined language arts/mathematics scoring rubric was not specific enough to the mathematical ideas I wanted to measure from this assignment. I approached my co-instructor to ask her to consider dual rubrics (one for language arts and one for mathematics) so that each of us could capture more content-specific evidence of candidate
growth. In addition, I requested that the one credit hour field (clinical) experience be assigned to my teaching load so I could pursue a field experience arrangement that provided the candidates with access to kindergartners.

**Approach to Affect Student Learning**

The fall of 2009 brought the changes that I requested and that would allow me to restructure this assignment and related course instruction into an authentic learning experience measured through authentic assessment (the case study assignment). Of primary importance was a re-negotiation of the field experience. In the spring of 2009 I met with principals at several elementary schools in hopes of locating a placement that would give my candidates access to kindergarten learners for an extended period of time. I found a partner in a local elementary school, where the principal and kindergarten classroom teachers agreed to pair up my candidates with a kindergarten “study buddy” for weekly one-half hour pull out sessions over a six-week period.

Once the new field experience arrangement was finalized and the candidates began work in the field, I found that class discussions became much more dynamic and rich. Students not only had video-taped examples of young children doing and talking about mathematics, but they also had real-world experience of working one-on-one with a kindergartner to help them make important connections to the theory we studied in class. Adding to the consistency of the overall experience in the fall semester of 2010, the series of adjunct instructors teaching the language arts portion of the class were replaced with a full-time clinical faculty member who was, and continues to be, equally interested in providing candidates with authentic learning experiences. She has revised the language arts scoring rubric and has worked hard to make sure the language arts learning theories studied in class connect well with the work the candidates do in the field.

This instructional approach fits well with what I consider good instruction, in general. It is a constructivist teaching approach that allows students to experience new cognitive ideas in an authentic setting. In addition, the authentic assessment (case study assignment) is open-ended in nature and allows for multiple ways of understanding early childhood mathematics learning theory by providing evidence of the variety of ways children think about mathematics.

**Assessment of Student Learning**

The initial scoring rubric (see item B in supplemental materials) used to assess this assignment was more of a checklist for points rather than a performance rubric with the potential to identify specific candidate knowledge. Because allowances were made for students matched with older children as part of their field placement, scores were inflated and did not necessarily reflect the candidates’ understanding of theory of early childhood mathematics development. Only the one or two students lucky enough to be placed in a kindergarten classroom were able to adequately reflect on how the theory studied in class is applied in practice.

Beginning in the fall of 2009, the scoring rubric for the mathematics portion of the case study was revised to consider specific aspects of making sense of and reflecting upon children’s mathematical thinking, along with connecting ideas from theories studied in class with practices in the field (see item C in supplemental materials). The rubric serves as an instrument to
measure the candidates’ ability to self-reflect, understand mathematical content, implement student-centered tasks with young children, analyze children’s thinking, and make appropriate suggestions for next instructional steps.

Quantitative results from the spring 2011 administration of the instrument are included on the scoring rubric in red font. Qualitative changes were also realized in the candidates’ analyses of children’s thinking and in their self-reflection. The example below exemplifies candidate analysis that includes reference to course content and professional, theory-based vocabulary that was so often missing from responses prior to the modifications to the instructional episodes and field placements.

The second example shown below exemplifies candidates’ self-reflection that connects the real-world experience of working with the kindergartner to course content.

**Reflection on Assessment Data**
An analysis of the results from the spring 2011 data presented in the revised scoring rubric indicates that of the fifteen students enrolled in the course realized the greatest number of higher scores (3 pts. or 2.5 points) in the categories implementation, analysis of child's mathematical development, content knowledge, quality of writing, and next teaching steps. In each of these categories there were at least 12 of the 15 students scoring in the top two scoring categories.

The concern with the results lies in the categories of connection to course content and self-reflection. Even though current results are far better than those prior to the revised instructional episodes and new field placement opportunities, additional growth in student knowledge in these areas is warranted. To help the reader understand the type of evidence associated with these two scoring categories, I will write a few words to describe what counts as evidence of connection to course content and self-reflection. For the “connection to course content” category I am specifically looking for reference to theory studied in class. This may either be in the form of citations to the text or by embedding professional vocabulary associated with particular theories into the various portions of the case study. For the “self-reflection” category I look for evidence that the candidate has internalized the big ideas from the case study in an attempt to make sense of their own learning. Students receiving a low score typically focus their
reflection on their kindergartener’s learning rather than their own.

Current Steps being taken to Impact Student Learning
The current semester’s candidates are in the process of compiling their kindergarten case studies. This semester I modified my instruction in an attempt to help the candidates make sense of the characteristics of self-reflection. In particular, I have engaged the candidates in whole class discussion of assignments early in the semester that have a reflective requirement as part of the assignment. We have examined examples of self-reflective writings and completed some peer-editing work. In an attempt to affect an increase in the number and quality of connections from readings made in the case study, I have employed various “reading in the content area” strategies to discuss and debrief the content of course readings. For example, candidates have been engaged in vocabulary self-collection strategy (Literacy and Learning, 2011), the Final Word Protocol (National School Reform Faculty, 2011), and various metacognitive strategies. I will pay particular attention to scores in the “connections to course content” and “self-reflection” categories to determine whether or not the modifications to my instruction impacted student learning.

Final Reflection
My initial goal in modifying the instructional sequence associated with the case study assignment was to provide candidates with a model of constructivist teaching that incorporates authentic learning experiences and within which learning is measured through an authentic assessment. In the case of this particular instructional sequence, there were additional changes that needed to be made in order to create an opportunity for the desired authentic learning experiences, including re-negotiating the field (clinical) experience component and redesigning the scoring rubric. For me, the experience of rethinking the instructional sequencing to support the candidates’ work in making sense of children’s thinking has given me additional insights into my own students’ learning. The authentic assessment not only reveals to me how the candidates’ make sense of children’s learning; rather, it also provides evidence of changes in beliefs these pre-service teachers hold about their future practice. The long-term goal of my work is to support student-centered mathematics teaching. I believe that impacting pre-service teacher beliefs through practice-based instructional experiences that focus on children’s mathematical thinking should be the primary goal of any mathematics educator. In general, whenever instructional issues arise in my teaching of mathematics, I rely on practice-based teaching vignettes to refocus my students’ attention to children’s thinking. The evidence of candidate learning from the case study experience supports my conjecture that real world, practice-based learning experiences impact candidate learning. On a personal level, it is rewarding to witness these pre-service teachers working with children and implementing the theory we explore in class.

References

Example #5

*BME 33400 Biomedical Computing: Competency-Based Feedback*

The Problem: The course introduces a number of numerical tools and techniques for solving problems that arise frequently in engineering. The first time the course was offered, a couple of students managed, through partial credit on exams and significant help from peers on homework, to attain a passing grade in the course without conclusively demonstrating that they could correctly apply any of these methods to completion. Regardless of points earned, giving a passing grade to an engineering student who can’t solve problems independently seemed a misrepresentation of the student’s achievement in the class.

The Innovation: I have defined nine “core competencies” for the class (such as “Finding Roots of Nonlinear Equations”, “Interpolation and Data Fitting”, and “Boundary Value Problems”). Students are required to demonstrate competence in at least six out of these nine areas in order to pass the course. This can be done either by scoring at least 70% on an exam question related to the competency area or by putting together a portfolio of problems demonstrating their competence in that area, and coming to talk to me about them.

The Outcome: Implementing this new requirement has had a strongly positive effect on student learning outcomes in the course. Competencies provide a framework of fundamental skills and knowledge necessary for successfully applying the tools we discuss in class; by mastering most of these fundamentals, students prepare themselves for a deeper exploration of the material. As a result, in recent years I have been able to delve much deeper into several topic areas (including linear regression and numerical methods for solving several classes of partial differential equations) than was possible the first couple of times I taught the course. Students are thus able to apply these methods to a wider range of problem types, and to go back to first principles to derive new formulas for related classes of problems not explicitly covered in class. Moreover, student response to the competency framework has been strongly positive. Though at first they are a bit frustrated at the prospect of extra work if they don’t pass a competency on the first try, once they have been through the process they realize just how much it increases their understanding of the material. They appreciate it so much, in fact, that every year I get requests from students to extend the competency framework to my other classes. Although I have madesteps in that direction by talking much more explicitly about expected learning outcomes, the one major downside of this method has kept me from adopting it outright in other classes: it is very time-intensive for the instructor. However, the benefits to student learning are strong enough that I continue to work toward an efficient way of applying a similar process in my other courses.

*BME 32200 Probability and Applications in BME: Intentional Ambiguity*

The Problem: Our students need ongoing, intentional development of their critical skills in order to be prepared for the engineering workplace, but may not be getting much practice prior to the capstone experiences of the senior year.
The Innovation: In my Probability and Applications course, we talk not only about probabilistic and statistical methods for analyzing data, but also more broadly about drawing conclusions from and making decisions based on information: What does it take for data to be “convincing”? What tools do we have at our disposal to help us decide whether to accept information at face value? To reinforce these points, I have developed a probabilistic modeling project on neural signaling that seems quite reasonable on the surface – all the information provided is true, accurate, and appropriately cited from reputable sources – but in fact includes some ambiguous (and in one case, intentionally contradictory) information that makes it impossible to get a “perfect” result if one follows every instruction exactly as written. I then ask students to re-examine the underlying assumptions and propose an alternate model that provides a better fit to data while maintaining physiological relevance of the model.

The Outcome: It is clear from their reactions to the assignment that students are not at all used to thinking about information presented by their professors as anything other than gospel truth – to the point that they get uncomfortable when asked to figure out where the instructor is wrong. However, this discomfort spurs a great deal of critical thought and questioning. The two weeks before this assignment comes due are among my favorite times of the year from an educational standpoint: I walk into the classroom to find my students engaged in friendly argument with each other about what might be going on in the problem, and primed to ask pointed questions about the possibilities they have considered. Even those students who do not manage to work all the way to the root of the problem and uncover the contradiction at least get some practice in making judgments about ambiguous information, justifying their reasoning, and then reconsidering their arguments in response to feedback: in addition to instructor comments, students get peer feedback through an anonymous review process, and have an opportunity to re-write their papers in response to that feedback. Some evidence suggests that the assignment is shaping students’ critical thinking even out of the classroom: a student this spring reported that one of his classmates had begun to turn a critical eye toward the reliability of information he finds on the internet, because “How do we know it’s really correct?” For a lot of our students, that kind of thinking is a huge step forward.

BME 33100 Biosignals and Systems: Replacing Homework with Homework Assessments

The Problem: BME 33100 develops methods for linear system and signal analysis that are fundamental to a number of engineering disciplines, including signal processing, system identification, and control theory. The material is among the most abstract in the engineering curriculum, requiring students to visualize signals in the complex plane and apply complex mathematics to simplify computations. Mastering the material requires practice solving many problems to illustrate the wide range of methods discussed in the course. Required weekly homework assignments would seem to be a reasonable vehicle to give students this necessary practice. However, due to the abstract and unfamiliar nature of the subject matter, students confronting the material for the first time often take a very long time figuring out how to approach these problems. Faced with a looming deadline and limited time, they will choose getting as many points as possible by any means necessary over actually learning the material. In many cases, this leads to getting “help” from peers (or the
internet) in the form of copying down steps (or sometimes whole problems) without actually understanding them. Furthermore, lengthy homework assignments can be slow to grade, so students may not be getting feedback on their work in a timely fashion.

The Innovation: Following complaints from students about the extreme workload in the class, and from TAs about their lack of confidence that students fully understood the work they submitted, beginning in 2011 I replaced the weekly homework assignments with weekly ungraded practice problems for in-class discussion, combined with 15-minute “homework assessments” (which students identified as “quizzes”) given every three to four class periods to test students’ mastery of recent course material.

The Outcome: By far the greatest benefit of using homework assessments in place of lengthy submitted homework is the immediate feedback students get on their work. Immediately after papers are handed in, we go over the solution in class, with students making suggestions based on what they just tried. Thus, not only do they get to see the correct solution, they also get a chance to discuss why other approaches they might have tried are incorrect (or non-optimal). Because these assessments are brief, covering only one or two problems, they can be quickly graded and returned the very next class period – so even students who don’t volunteer their solutions in class will receive timely feedback on them. This rapid cycle of practice, testing, and feedback helps students identify and correct misconceptions early, before they snowball into ongoing confusion. The frequent testing and feedback seems to make a strong impact on student learning, as demonstrated by test scores: The 2011 average on the (cumulative) BME 33100 final exam was 73.0%, compared to final exam averages of 63.1%, 63.1%, and 67.3% in 2008, 2009, and 2010, respectively. On course evaluations, several students mentioned that eliminating homework submitted for points made it much harder for them to stay motivated to keep up with each week’s exercises, and suggested that at least some homework should be due each week. Following that suggestion, in the spring semester I implemented homework assessments in my BME 32200 Probability and Applications class, but I made 2-3 practice problems each week required for credit. This seemed to help students keep up with the material, and that strategy – weekly practice problems of which only a subset are submitted for credit, combined with frequent homework assessment with rapid feedback on student responses, has become the new standard for all three of my 300-level courses.

Broader Effects of Classroom Innovations

These changes to the structure and assessment of my courses have certainly made a difference in the measured attainment of learning outcomes in my own classes – but to what extent have they affected students’ longer-term development of analytical skills? To answer this question, I keep an eye on whether the observed learning outcomes from my own classes translate to future success in related areas. I work closely with Dr. Ken Yoshida, who teaches BME 41100 Quantitative Physiology (for which my BME 33100 class is a direct prerequisite) to ensure that students coming out of my class are well-prepared to hit the ground running in his class. As a result of the improvements in my own classes, student performance in his course gets stronger every year, to the point that this year he has been able to significantly scale back on review of concepts from my earlier class in favor of jumping into new material more quickly, and in much
more depth, than in any prior year. As a further check on whether students are indeed learning and retaining the core mathematical and engineering principles and skills developed in my classes, I pay close attention to subsequent student performance in higher-level electives that build on the material from my classes, such as ECE 53800 Digital Signal Processing, ME 55000 Finite Element Analysis, ECE 60000 Random Variables, and GRAD-G 651 Intro to Biostatistics. Students who take these courses report that their learning from my classes provides an appropriate foundation, and that they generally feel at least as well prepared as their peers from other engineering departments (ME, ECE) in terms of their grasp of prerequisite material and fundamental engineering concepts. This is reflected in their performance in these courses: students who have mastered the material in my courses have no trouble passing these higher-level courses.

Data from the two most recent cycles of the National Survey of Student Engagement (see table on the next page) also indicate that IUPUI Biomedical Engineering students now engage more frequently than other engineering majors in higher-order thinking skills such as analyzing, applying, synthesizing, and making judgments about information. Although the small N makes it impossible to draw strong conclusions about inter-program differences, there does appear to be a consistent trend of stronger emphasis on higher-order thinking skills in BME compared to the average across all seniors in engineering. Furthermore, BME seems to have made noticeable gains – moreso than our peer departments – in emphasizing both “Making Judgments” and “Applying”. Although there may be many factors at play besides the effect of my own courses, these results are certainly encouraging.

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Example #6

My course objectives include both introducing and advancing the knowledge of undergraduate students who are not specialists in literature or feminist philosophy to women's literature and feminist theory in undiluted form. We study very sensitive and very painful issues that include violence against women (e.g., domestic violence, rape, and hate crimes including lynching and assault): we tackle diversity topics and identity politics that are often uncomfortable, namely gender, race and ethnicity, sexual orientation, socio-economic class, age, and disability, in an age plagued by sexism, racism, homophobia, classism, ageism, and ableism. In addition to the challenges posed by the content of the subject matter, the structural challenges I face in the classroom are bountiful. I teach entire texts, not summaries, of very difficult material in terms of sophistication—for English majors, let alone non-English majors (the latter—non-majors and non-minors—are the majority of the population I teach). I also teach two sections concurrently: the 200-level students and 300-level students work together in a seminar. None of this material is easy to study or teach in either content or form. Additionally, the great majority of the students I teach are not literature or English majors, and they tend to be first-generation college students who find their way into my courses because my classes fulfill diversity requirements for certain majors and minors. In other words, students do not generally elect to take English L207/English L378, they take it in order to fulfill a requirement. In order to prepare my students for what I ultimately expect of them, every class session builds upon the one before and after it, and I use discussion as a technique to track what my students know but also to make them active collaborators in the making of meaning and knowledge, specifically in connection with literary interpretation. I use class discussion, discussant activities, and reading check quizzes as tools in a feedback loop every class. As an entire class, myself included, we scaffold upon what we know and build upon it as learners, and we collaborate in building interpretations. Also, part of what I have done to address the challenges of what I teach is to study and listen to what my students and peers tell me in their evaluations of my teaching, which I also consider to be part of an ongoing feedback loop. I use a feedback loop so that I can ensure to the best of my abilities that the students will become more educated and sophisticated readers and citizens in the world they inhabit.

Because students know they will be called upon in every class, they tend to come prepared. And because active participation leads to active learning, students in L207/L378 sign up to be discussion leaders for a particular author and text, and they come to class on the assigned day prepared: they have three strong discussion questions that they will pose to the class, but they also have reflected on the material and prepared their own responses to those questions, which they have written down and I collect at the end of class (and return with comments and a grade after reading the discussant paper and taking into consideration their role as discussant).

Discussants are free to pose any good questions (read: questions that begin with “how” or “why”—not “what”): as the semester progresses, they pick up on my example of establishing a theoretical frame that will orient our analysis and discussion of the literature. We always connect the theorist and her theories with the assigned reading for that week, but we also will allude to what we have already read, thereby forecasting what the students will do in their written
assignments.

In order to meet my objective of effective student learning and to maintain a continuous “feedback loop,” I use discussion as a teaching strategy, tied to research components (my own, research in the field, and research by the students). This objective and the subsequent planning to realize it resulted from assessments of my teaching by others. In Spring 2008, in L207, my global score on my teaching evaluations was a 4.36/5.0, the lowest global score I have ever received.

Only one student offered anonymous feedback in the comments section, and s/he wrote, “The instructor could change [the] way the class discussion[s] are led.” Because L207 is taught concurrently with L378, I could compare the results. The 300-level students rated the course a 4.89/5.0, significantly higher than their 200-level counterparts. That discrepancy caught my attention. In perusing the comments from the upper-level students, several of them, interestingly, praised my ability to lead discussion. But the most critical, constructive feedback in that section came from a student who commented, “I would just ask that she might talk to students that tend to monopolize the class discussion.” I take constructive criticism seriously. My philosophy is that if students are willing to go out on the metaphorical limb and offer feedback and critique my teaching, much as I do with their own work, then I need to respectfully consider it and think about how I might address and improve the problem or issue they are articulating or attempting to express. Clearly, my students as a whole appreciated discussion-based classes, with lectures infused throughout when necessary. The 300-level students, even in 2009 when I first taught Women and Literature (and a split-level class at that), stated that they preferred the discussion-based format as evidenced in their comments on the student course evaluations.5

My job, then, as I saw it was how best to utilize what was emerging as a strength in my teaching—or, perhaps most aptly, the teaching technique that I was harnessing that the students found to be most successful. To that end, I enlisted the most decorated teacher on the IUPUC campus to evaluate and critique my teaching, and so in Fall 2009, Dr. Jay Howard visited two of my classes and watched me teach for almost 5 hours. In his peer evaluation of my teaching, he articulated suggestions for improvement. Being that his SoTL research is in

5 Some of the comments included:

• The instructor’s primary strength is that she is able to explain every theme in the class from different directions so that everyone understands the material.
• Julie is very passionate about what she is teaching and it is contagious! She is also very organized and hard working, and always very helpful with any questions we asked. Our class discussions never lagged, and I felt the hour and fifteen minute class flew by every week.
• Her primary strength is her willingness to allow an open discussion format in the class which is appropriate for the subject matter. She is also very comfortable when someone has a different viewpoint which is again, appropriate for the subject matter.
• This instructor is excellent at class discussion. It is clear that she knows her material extremely well and makes good use of her knowledge on the subject. She is so encouraging when it comes to motivating students and having them produce the best work possible.
the area of discussion, he offered feedback on what I was doing well with discussion, but he focused on ways I could improve. And what I did well, upon reflecting on my own ongoing journey toward improving my teaching, is that I took his advice seriously and figured out how to implement it in different ways over the years. Three years later, I can report that I have addressed his (and others') suggestions and incorporated them by changing how I lead discussion and by utilizing reading check quizzes and the discussant activity, which I designed, with great success. I also make it a point to invite students to relate their own experiences and observations to our reading material and our discussions.

Because I attend to what my students tell me, what my colleagues tell me, and what specialists in teaching know, I can show continued improvement in my teaching. While I read books in my discipline on effective teaching and attend lectures about innovative pedagogies in various forums, I have made it a point to receive feedback, specifically evaluations, from colleagues in diverse disciplines who make effective and successful teaching a priority. As a result, in my time at IUPUC as an assistant and then associate professor, I have been evaluated by more than a dozen unique faculty members, and I have had every course I have taught every semester visited by someone new, specifically someone who can offer a different way of looking at my teaching and who can prompt me to reflect upon it in new ways. I believe that using peer evaluations and evaluators as resources has been my best conscious strategy in improving my teaching, in tandem with careful study of my student course evaluations and in addition to staying informed as best I can concerning best teaching practices. The combination of peer and student evaluations have given me a fuller picture of what I do well, what I can improve upon, and what I might try to enhance students’ success or their learning experiences in my classes.

I incorporate what I learn into my classes and use feedback from reading check quizzes, student participation, discussant activities, and student and peer evaluations as part of my feedback loop. My last teaching evaluations for L207 and L378 in Fall 2012 garnered global scores of 4.90/5.0 and 5.0/5.0 respectively, and this improvement marks a .54 and a .11 increase from the 4.36/5.0 and 4.89/5.0 scores. My recent 200-level Women and Literature students reported no constructive feedback.

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6 As a touchstone, I will provide an excerpt from Dr. Howard’s formative evaluation of my teaching. He wrote in the evaluation in 2009, “I encourage you to think about how to draw in the other two [quiet students] as research shows students who actively participate learn more. If these students are particularly shy or introverted, consider providing the class a moment to write and reflect on a question. They then can share their thoughts with a classmate before being asked to share with the class as a whole (Think-Pair-Share). This allows the quieter students a chance to organize their thoughts and have them affirmed by another student before being required to speak up in the larger group. You could also consider directly calling on those students when you have ‘opinion’ or ‘no wrong answer’ type questions. A final suggestion for discussion comes from the sociologist in me. Often I wanted to relate insights from the assigned readings to students’ experiences in contemporary society.”
In order to more concretely map my trajectory through evaluations as part of the feedback loop that I seek from students and colleagues, I asked Dr. Howard, a FACET member, to return to my class, three years later, and conduct another review of my teaching. He performed the review last year. Likewise, Dr. Crystal Walcott, another FACET member, also evaluated my teaching and provided her feedback. True to my teaching philosophy, in which I am sincere about leaning myself and modeling that for my students, I had them each review different classes. Dr. Howard sat in on my L202: Literary Interpretation and Dr. Walcott visited my annual L207/L378. Both will provide their evaluations to you in their FACET peer review letters.
Example #7

Background/Description of the Learning Event

A specific learning event that I am particularly proud of happened in my HIM-M 107 course (Computer Applications in Health Information Technology). This is a three-credit course in the Associate’s degree program in Health Information Technology (HIT). Students at this level are undergraduates in the first year of this two year program. HIM-M 107 is a required program course and covers all aspects of information technology used in healthcare settings.

The course begins with basic computer software and hardware concepts as well as a description of the types of information systems used in healthcare. There are several curricular requirements mandated by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM), the accrediting body for Health Information Technology programs. One requirement is for students to complete simulations with health information systems.

When I first taught this course, I developed the teaching materials used by the previous instructor. Since the content of the course focused mainly on health information systems in healthcare, one of the systems that I chose as my focus for this class was the master patient index or MPI. The MPI is a database of all patients registered in a healthcare setting. Each patient is assigned a unique identification number upon entry into a facility. The MPI, which is a healthcare organization’s largest database, is the key to tracking all activity associated with a patient. A single patient can be seen in multiple locations within one facility or at different locations owned by one enterprise. The unique identifier is the link that keeps together the whole set of data associated with a single patient. It is common for registration staff to make mistakes when entering information into the MPI. Because these mistakes can have negative consequences for patients, I found it necessary to ensure that students came away from my HIM-M 107 class with a solid foundation on the master patient index.

Consequently, I designed a new set of learning objectives. The original learning objectives for this section of the course were to:

1. Define the master patient index (MPI)
2. Describe the methods used to enter and retrieve information from a computerized MPI system
3. Apply the procedures provided to enter and retrieve information
4. List advantages and disadvantages of a computerized MPI system.

Recognition of the need for change

After I taught the course with the original learning objectives, student comments made me realize that something crucial was missing. The students were not getting the hands-on practice that was essential for mastering the master patient index. I felt the course was well-designed, but my students were only learning about the MPI, not how to use the MPI. Some of the comments received after my first semester of HIM-M 107 were:

1. “Linda needs to explain the information in a way that she doesn’t sound like a textbook. She knows a lot but gets lost in the technical speak.”
2. “Not enough hands on for this to be a computer course.”

The problem that I encountered was not just practical, but pedagogical as well. Not having any hands-on practice prevented my students from building the problem solving and adaptability skills that are central to their professional future and my teaching philosophy. The course stopped short of teaching my students the critical and independent thinking skills they needed to develop to be successful. So, I developed new course objectives that provided the student with a deeper level of knowledge of this database. I incorporated hands-on practice not just to fill a void, but to accomplish an overarching pedagogical objective that is in line with my teaching philosophy and serves the true professional needs of my students.

**Approaches taken to Improve Student Learning**

I responded to the problem by finding the right kind of technology and by designing a series of activities my students could complete by themselves and in collaboration with their classmates. The American Health Information Management Association (AHIMA) had a Virtual Lab available for educational purposes. This Virtual Lab “is an Internet-based, practical, participative, HIM and health information technology work environment.” (AHIMA, 2012). I registered immediately to be trained in these programs at the AHIMA corporate office in Chicago, obtained funding through the Occupational Development Office at IU Northwest to purchase an annual enrollment for students, and worked to incorporate three master patient index activities into the course. The new sets of learning objectives are now:

1. Define the master patient index (MPI)
2. Describe the methods used to enter and retrieve information from a computerized MPI system
3. Apply the procedures provided to enter and retrieve information
4. Create a duplicate medical record number
5. Demonstrate an understanding of how errors in registration processes occur and their impact on the integrity of the MPI
6. Identify duplicate medical record numbers
7. Merge a duplicate pair
8. Run a productivity report on merge completion, and
9. Obtain a general knowledge of reports through a relational database.

Now my students practice extensively on the kind of software they will use when they start their careers in Health Information Management.

To help my students meet these objectives, I designed three hands-on activities:

1. Patient registration – this activity requires students to register several patients, learning not only how registration systems work, but also how to distinguish between new and returning patients. As part of the activity, students are also required to make registration errors on purpose. This exercise allows them to see for themselves the impact each error has on the whole master patient index.

2. Processing MPI Duplicate Pairs – this helps students understand how to identify patient duplicate medical record numbers through the creation of a relational database report. This type of report allows the student to perform a search and
identify patients with the same or similar names, or with other similar identifying information.

3. Merging Duplicates – this requires the student to analyze and correct duplicate medical record numbers. Analysis is completed through a relational database report. Understanding the layout of a report and identifying the patients who are potentially duplicated within the MPI are important concepts that students were not learning under the old set of objectives.

These activities reinforce each other and help foster the critical thinking skills I strive to teach my students. The activities help students understand that health information systems are interconnected. This point is achieved by having students experiment safely with the far-reaching consequences of registration errors. When students identify duplicate medical numbers, the activity helps them to learn, from a management standpoint, that one of the advantages of properly training staff is to minimize errors made at the point of registration. The process of merging duplicates allows my students to bring their new knowledge full circle. New graduates often take on positions in the professional setting that require them to already know how to work with errors in the MPI, how to correct those errors, how to work with the staff members that created the errors, and how to implement training programs for the organization’s registration staff. The activities helped my students gain an understanding of the MPI from the inside, not through the eyes of a textbook or of an observer, which is necessary to be able to think critically and creatively about the systems used in healthcare.

**Improving Student Learning**

I adopt a learner-centered approach to teaching because my goal is to foster critical thinking skills in my students. I used these series of activities in order to meet the revised learning objectives listed in the previous section. I also allowed my students the option of “driving” the use of the technology or partnering with a student and working in pairs. I know that not all students learn at the same pace. Technology can hinder some students more than it can help. By allowing students to work on the MPI activities on their own or with a partner, I have given them the flexibility to learn at a comfortable pace, and to understand a very important concept where their knowledge will be called upon in the professional practice setting and in future professional courses. Learning collaborative problem-solving techniques is likely to come in handy in my students’ future careers. Healthcare is an interdisciplinary environment and it is critical that students learn to work collaboratively.

To assess whether my solution had been effective, I monitored exam scores that included specific questions designed to measure the students’ understanding of the master patient index.

Specifically, one of my exams presents the students with a small version of a master patient index screen. The display consists of patient name, date of birth, medical record number, and gender. It also includes details of encounter dates, discharge dates, and places of service. The first question in the exam asks students to identify the date of an emergency room visit. Before and after implementation of the series of MPI activities, this question was answered correctly 100% of the time. The second question asks the students to identify the primary terminal digit section of the unique identifier. This question is important because this identifier is used to find paper medical record documentation. Any paper that still exists in organizations is filed in a very
unique fashion in order to maintain patient privacy. One could not walk into a file area of a medical record department and locate a patient record without specific training. Before implementation, students answered correctly 63% of the time. After implementation, 79% of the students answered correctly. The third question asked students to identify the month of discharge from a second inpatient hospitalization. Before implementation, 84% of the students answered correctly. After implementation, the percentage became 88%. The data compiled before implementation consisted of 24 students tested. After implementation, data was compiled for a total of 52 students.

Reflection on Assessment Data

Reviewing and reflecting on the data presented above, the first question will be modified this next year to increase the level of difficulty. The second question did show the greatest improvement. However, I believe that when we complete the MPI activities, I need to ensure that we focus on the breakdown of the medical record number and incorporate concepts of the filing of paper records that are still in existence. The third question showed some improvement between the before and after. However, the third question demonstrates that I need to focus on the structured data that is entered in the Patient Registration activity. I can stop students toward the end of the completion of this activity for a discussion about defining structured data and identifying various demographic elements, such as encounter dates, service types, and sections of the medical record number.

The improvement shown on three exam questions supports my decision to implement the Virtual Lab and also indicates that students have become more comfortable with the use of professional-grade software. This new version of the course provides my students with a more hands-on approach, enabling them to apply what they are learning in the instructional environment. The activities have given me the confidence that my students are able to understand and apply their knowledge of the MPI and are moving into a critical thinking process.

As I have already emphasized, a key feature of my approach to teaching is the goal to transform my students into critical and independent thinkers. The MPI activities I have designed can play a pivotal role in the attainment of this goal. The software that is used identifies potential duplicate patient identifiers using an algorithm. There is no guarantee that the software will identify a duplicate. The student needs to make the final decision. Through the review of the relational database report, the student learns not only how to read a report, but also to analyze the report to discover duplicate records.

The incorporation of hands-on activities related to the master patient index has been an important addition to my HIM-M 107. Students have commented to me informally that they enjoy the hands-on activities, they feel more comfortable working with a sophisticated computer application, and enjoy learning from other students. Reflecting on the incorporation of the activities that I implemented in this course has helped me become a better teacher. Now, in all my courses, I create assignments and activities that require my students to think independently about a solution to a scenario.

Critical thinking “is an iterative process, meaning that as you learn more, you return to earlier steps to invest what you have discovered back into previous levels of the process” (Marquis, 2013). The activities that I created for HIM-M 107 are a starting point in the professional program courses. As my students progress further into the program, they are
exposed to electronic health records. When documentation errors are noted in a patient’s record, the student is able to make the connection back to the master patient index and the potential for a duplicate identifier. The same scenario can also be seen in their professional life. Even if a student does not work in a position that relates directly to the master patient index, but notes documentation errors, the student will be able to identify the source of the problem and take all the steps necessary for analyzing and correcting the error.

References:


Example #8

Description of teaching situation

I would like to discuss a teaching situation from CMCL-C427 Cross-Cultural Communication, a required course for IUE Communication Studies majors. Other majors take the course as an elective, recommended, or required. This course creates and develops intercultural competence and examines the notions of culture, identity, difference, and power in human interactions. Like many upper-level courses in the program, the course suggests high level of intellectual engagement for it touches on deep-seated beliefs and common practices, and strives to develop not only theoretical knowledge but also practical know-how about ways to interpret, critique, and communicate (about) culture, self, and others. I chose to focus on this course because I have taught it most often since I joined IUE. Almost always, I teach it online. The teaching situation discussed here focuses on teaching students to become active learners.

Recognition of a need for change

The recognition of a need for change emerges from student feedback and the assessment of their course performance. First, student feedback at the end of the semester suggests an overall high level of satisfaction among students. However, positive comments neighbor with negative. For example, a comment “one of the best courses I have ever taken” follows “poor [classroom learning environment]” in spring 2010. A similar situation is repeated in spring 2012: “The learning environment was good and students really communicated with one another in the forums” stands next to “very hard to learn and communicate.” Such wide range of perceptions suggests a need for change.

Second, I observed that some students have difficulty with specific assignments and activities, such as course discussions. The discussions emphasize application and collaborative engagement, and students are asked to respond to the discussion prompts by complementing and developing ideas of others. This process emphasizes turn taking and listening, and requires that students respond in a complementary manner. Such discussions discourage duplication of ideas. My observations suggest that student may not always understand these ideas of conversation flow. One of the reasons is that they are used to a more structured form of talk in online courses. I often hear that in other classes students are required to do one post and two responses.

Drawing from these examples, I conclude that even though my teaching philosophy may be theoretically sound, the approach to organizing the learning process may not be as effective as I expect because students may be unfamiliar with active learning. Weimer (2013) acknowledges the issue of student resistance to learner-centered approach, and explains that students may not be ready for active learning approaches because such method of learning may require more work, students may feel threatened, and learner-centered approach may involve losses. Talbert (for example, 2012a and 2012b), who regularly blogs about flipping his Math class for the Chronicles of Higher Education, echoes the same themes of uncertainty and resistance among students because of limited experience with the active approach to learning.
Thus, I came to a realization that in addition to the discipline related knowledge, skills, and attitudes, students need guidance in active learning skills.

Approaches to improve student learning and their relation to the teaching philosophy

I made multiple changes in the course, and I examine two of these modifications.

1. Promote a strategic approach to discussion activities

Discussion activities are assigned in almost every week of the semester, and they have various objectives: to apply the new material, to share project proposals, to report on a project, to provide peer feedback. In spring 2012, in addition to the usual ways introducing a course assignment via description in the syllabus, I provided a rationale for discussions and asked students to focus on specific criteria of the discussion activities separately in 3 initial weeks of the course. Thus, in week 1 of the course, the discussion focused on self-introductions of students and examination of course documents. For this low-stake conversation, the challenge was to respond to the criterion of “time and form” (with focus on when and how much a student contributes to the conversations). In the following week, the topic of the conversation focused on the reasons to study intercultural communication, and the challenge was to make posts that would meet the criterion of “quality of information” (with focus on application of ideas, theories, etc. studied in the course). In the next week, the conversation focused on approaches to study communication and culture, and the final challenge was to make posts to meet the criterion “interaction with peers” (with focus on complementarity of ideas). In the discussions that followed in other weeks, all criteria were used together.

I also modified the feedback provided for discussions. If previously, the feedback was given individually only in the gradebook, since fall 2012 I have been making brief announcements to the class or comments to specific groups suggesting which discussion group or which specific threads had a successful stream of conversation and why. These announcements and comments also recommend strategies to use in discussion activities. For example, since I emphasize listening and turn taking in the discussions, I consistently call that students provide opportunities for listening to each other by descriptive titles for their posts.

2. Prepare study guides for the topics in the course.

When I started teaching online, I replicated the model of in-class teaching by assigning texts to study (chapters, articles, or videos) and asking students to read, watch, or listen. This mode of assignment has been typical for situations when a class meets on campus. Knowing that the texts are relatively complicated, I questioned myself about whether students know how to make sense of these texts. With time and with multiple courses that I had to teach online, I came to a different model of guiding students to examine new information. I started experimenting with so-called study guides since fall 2012. Talbert (2013) argues that assigning reading is a sure path to failure. Instead, he provides “guided practice,” in which he teaches students how to study assigned texts. The study guides in my classes include:

- A preview of the upcoming week. In spring 2013, I also recorded audio memos
to review the previous week and preview the topic and activities in the upcoming week;

- A list of assigned texts;
- A list of specific ideas to pay attention to, usually formulated as questions. I expect that students will examine the texts using these questions;
- A description of activities or discussion prompts based on the texts.

These changes in the course directly reflect my teaching philosophy by guiding students to become independent learners and to take responsibility for learning (Bloomberg, 2009). Introducing discussions step-by-step (by so-called “challenges”) allows gradual building of skills necessary for a task through a series of repeated assignments. With multiple challenges, we had an opportunity to talk about strategic approaches to discussions as conversations progressed as well as to make feedback after the discussions were complete. Weimer (2013) describes progressive design of assignments as a developmental approach in teaching students to become motivated and self-regulated learners. Therefore, introducing the discussions via challenges orients student to have the expectations about the discussions in mind multiple times, and students can practice the skills which may be outside their learning habits.

Similarly, the study guides provide guidance for students to take responsibility for their learning (Bloomberg). This method allows doing studying in small chunks; thus, students are able to take control of their learning. Attaining the skills to learn is essential in student-centered learning. Finally, learners get an opportunity to practice and use learning skills on multiple occasions. The specific points included in the study guides are then incorporated into quizzes, discussion prompts, short activities, and course projects.

Assessment of approaches taken to improve student learning

To assess the implemented changes, I draw from a few sources: Course Portfolios, student comments during and after the semester, student grades, and peer feedback for teaching.

The course portfolio asks students to assemble a collection of work samples produced during the semester and annotate this collection to showcase and make sense of their learning. By assembling the portfolio, students examine the ways they achieved course learning outcomes, which make central topics for the portfolio. The portfolio provides a measure of not only cognitive learning (of what students know) but also of affective learning (of how they value what they learn). Angelo and Cross (1993) argue that by using portfolio as an assessment tool “the teacher gains insights into what [students] value and appreciate” (p. 211). The samples included in portfolios allow connecting the course products that the students consider as the most satisfying in terms of personal learning and the course content, expectations, and, ultimately, the suggested manner of learning. I rate the students’ submissions (such as, the samples of discussion activities and sections of course project) using this scale.
<table>
<thead>
<tr>
<th>Rating</th>
<th>Assessment of a discussion post</th>
<th>Assessment of a course project section or part</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 points</td>
<td>The post describes a situation and analyzes it using the theories and concepts studied in the course.</td>
<td>The submission makes claims, supports them with data, and applies the theories and concepts studied in the course.</td>
</tr>
<tr>
<td>4 points</td>
<td>The post examines specific situation and connects to the readings or weekly lessons at the level of identification of terms or theories</td>
<td>The submission draws connections to the course at the level of concept identification.</td>
</tr>
<tr>
<td>3 points</td>
<td>The post shares stories agreeing with the week’s theme</td>
<td>The submission makes conclusions unconnected to the course.</td>
</tr>
<tr>
<td>2 points</td>
<td>A descriptive post summarizes the reading without making connections to the situations or examples</td>
<td>The submission provides or describes data.</td>
</tr>
</tbody>
</table>

After the portfolio review submitted in fall 2010, about 60% of discussion post samples are rated with 2 and 3 points: These posts focused on summarizing the assigned texts or sharing stories agreeing with the week’s discussions, and did not offer analysis or connection with the studied topics in the course. Similar results emerged for the project samples: About 67% of the samples were rated at 2 and 3 points. In spring 2012, the discussions were introduced through challenges, and the review of the portfolios submitted in spring 2012 shows an improvement in the ratings: About 56% of discussion posts were rated with 4 and 5 points. In fall 2012 with initial use of study guides, the rating of project samples changed as well: 42% of project samples are rated with 4 and 5 points. In general, this assessment method suggests a moderate impact of the discussed teaching approaches.

Further, I observe the discussions. The average grade for discussions changed from fall 2010 to spring 2012 (the semester when the changes took place) – from 5.99 to 6.95. Tracking grades from the beginning of the semester to the end shows growth as well: in spring 2012, grades ranged from 6.69 to 7.59; while in fall 2010, 6.06 changed to 6.97. In fall 2012, when I also included comments with strategic suggestions, the grades moved up slightly as well, ranging from 6.51 to 7.78. After my comments for the discussions, the situation often changes to students’ using more meaningful descriptive titles.

The meaningful discussion threads allow readers to predict the content of the posts in the specific threads so that to follow one topic in a conversation. Such conversations then allow creating the collaborative spirit in the course.

The assessment of the impact of study guides suggests a positive change, especially in the consecutive rounds of using the guides in spring 2013. Students’ responses to the question “What percentage of the required readings did you complete?” in the end of semester survey suggest upward dynamics:
Students report higher motivation and readiness to work with assign texts, thus they have clarity about course activities. In the narrative comments, students express their appreciation for voice memos and weekly guides included in the study guides (in spring 2013): “Good outline each week of what we needed to do” and “The voice memos for each week was a great idea.” Peer reviews of teaching also mention that the audio comments are effective in discussing upcoming work.

Finally, an examination of student projects provides another way to assess learning in the course, specifically assigning discussion activities and presenting study guides because the course project builds on the skills and knowledge promoted in the assigned texts and practiced in course discussions. The course project culminated with a presentation, which makes an argument about communication and culture in a specific location and should be based on the course theories and concepts. In spring 2012, fall 2012, and spring 2013, the grades for the project content range between 80 and 89%. This measure reflects the positive impact of the learning approaches during the semester.

**Lessons from LEARN**

The student success depends on big changes in the course (such as, using study guides, or introducing discussion activities step-by-step) and then continuous minor adjustments in these approaches (such as, clarifying and re-organizing the guides or making strategic comments about discussion activities). These changes are built into the course so that the students understand and “buy into” the philosophy of active learning as an engagement produced by students and guided by an educator.

Assessing the impact of active learning strategies is not an easy task because the indirect measures (such as student grades, course portfolio, and peer and student comments) do not provide the desired strength of evidence of learning and do not always isolate a specific approach that leads to success in learning. By building opportunities for students to develop learning skills, I hope to be able to address the potential resistance and lack of readiness for student-centered learning in CMCL-C427 Cross-Cultural Communication and other courses.

**References**


Example #9
Background of the learning episode

The Department of Mathematics at Indiana University Bloomington has a long history of providing quality introductory mathematics courses to the campus. Those courses typically fall into two natural categories: Calculus courses that serve the needs of the sciences, business, and economics and Finite Mathematics courses that serve the needs of the social sciences, business, economics, and information sciences. When the Bloomington campus adopted its new campus-wide General Education requirements including a Foundational Mathematical Modeling requirement, I wrote, on behalf of the Department of Mathematics, to all other departments and programs asking whether our courses in Calculus and Finite Mathematics met the needs of their students. I received overwhelming positive responses that our courses were fine and that no additional courses were needed. However, the Theatre and Drama Department suggested that a course including Consumer Mathematics topics, such as taxes, mortgages, and budgets, would be useful to their students.

Consumer Mathematics topics are included in some Finite Mathematics courses on some college campuses. When considering their inclusion at Indiana University Bloomington, I had to consider how to include the level of mathematical rigor the department wishes to maintain in its introductory mathematics classes, a level that is not reached in most modern Finite Mathematics textbooks. I spent the next year writing material for the consumer mathematics portion of the course to supplement the probability portion of our current Finite Mathematics text. I had numerous colleagues review the material I created. This review was essential in order to improve the material for use in a lower-level course and to develop faculty support for the new course. My course materials - my draft notes, problem sets, sample exams, etc... - were also reviewed by the Campus General Education Committee when they were submitted for campus approval. The course won General Education Foundations Mathematical Modeling approval and was offered in the Spring of 2012.

Recognition of the need for change

Even before the course began, there were hints of trouble. I designed a course that was different from regular Finite Mathematics but with the same high mathematical expectations. Planned assessments of student learning included my students taking a common midterm with all regular Finite Mathematics students that term. Indeed, the description that I wrote said: “This course covers the mathematics of chance and the mathematics of personal financial decisions. The first half of the course overlaps completely with the probability portion of M118. The second half of the course covers the geometric series and recurrence relations useful in personal finance calculations.” However, colleagues whose spouses serve as academic advisors had warned that students with weak math backgrounds were being told to take Finite and Consumer Mathematics. Just the title, “Consumer Mathematics,” reminds some advisors of high-school mathematics classes designed for weaker students.

On the first day of class, I announced the intended level of the course. Within the first four class periods, I received feedback from the students indicating that they were not prepared to take the course at that level and pace. Some students talked to me about their lack of skills with mathematics and indicated that they thought my course was designed for such students. A student wrote and said that she and the classmates she was working with could not complete
the first homework assignment. Many students indicated that they were seniors planning on graduating at the end of the semester but needed to complete the mathematics requirement in order to do so. Such students typically have not taken any mathematics for at least four years and that is usually a sign that they will struggle since familiarity with the necessary preparatory skills tends to wane with lack of practice.

The course had a lengthy wait list and many students in my course had intended to enroll in a different one that covered biological and social science applications, so it took a week for the flux in the students actually taking the course to settle down. At the beginning of the second week I gave an assessment quiz to see how well students were following the material I covered the first week. I also obtained background information such as the Math Skills Assessment scores for all of my students. Those scores were often extremely low, much lower than is typically found in a M118 Finite Mathematics course. Low scores indicate that the students did not have the basic mathematics skills needed to succeed in a college-level mathematics course.

Following mathematics department guidelines, their advisors would have told them that they needed to take non-credit preparatory courses such as M014 and M018 before attempting Finite Mathematics or would have recommended the slower-paced two semester sequence D116-D117 to them. Most students who needed the preparatory courses had not taken them and many students with low MSA scores were seniors who wanted to complete their mathematics requirement in one semester, not two. The results of the assessment quiz I gave in class were also discouraging and indicated that the students were not learning the material at the standard pace for regular Finite Mathematics courses.

**Approaches taken to improve student learning**

Responding to the feedback I was receiving, I immediately modified the course to meet the needs of the students in it. I retained the topics that the Department of Theatre and Drama indicated were of key interest to their students while increasing the amount of active learning the students were engaged in inside and outside of class. I re-wrote the syllabus and created a course that covered probability in three-quarters of the semester and consumer mathematics in the last quarter. This modification required that I abandon one major and relevant mathematical topic, solving simple recurrence relations, added to improve the mathematical level and rigor of the course. However, I managed to cover the planned consumer mathematics topics of savings, investing, taxes, and mortgages without using that mathematical concept.

I encouraged woefully under-prepared students, students with extremely low MSA scores, to drop the course and take our non-credit preparatory courses instead. Most of the remaining students had MSA scores well below a typical M118 Finite Mathematics student, but they also had a strong desire to succeed in the course and individual perseverance with the material. I abandoned the planned assessment of having my students take the common departmental midterm exam and, instead, created my own exams bearing departmental standards in mind, but in tune with the new pace of the course. I obtained materials from our slower-paced D116-D117 sequence to help me design appropriate assessments of student learning.

For the rest of the semester, I made sure to cover, slowly and well, key concepts and examples during the class lecture while ensuring that I had time to give a group quiz nearly
Assessment of the approaches taken to improve student learning

The assessments I was able to use for the course were limited to internal comparisons. The best assessment of student learning would have been to compare the performance of my students to students in regular M118 on the Midterm Exam or, after the course modifications, to students in the slower-paced D116 on the Final Exam. Those assessments were impractical since, after the modifications, my course progressed at a slower pace than M118 but my course at 3-credit covered more material than is covered in the 2-credit D116 course. I modeled my questions after previous exam questions, but the department has not historically kept records of student performance on individual exam questions, so no comparison to previous M118 or D116 students was possible either.

Internally, students rapidly adapted to the daily group quizzes and were willing to ask me if they were on the right track or ask for help getting on the right track with the problems. Also, during the course of the semester homework grades improved, going from consistently under 6 out of 10 points on average early in the course to often over 8 out of 10 points towards the end of the course. I modeled my first exam after the exams given in D116, the first part of our 2-semester Finite Mathematics sequence designed for students with lower MSA scores. The individual questions on D116 exams test students' knowledge of small components of the material. By the final exam, I was designing probability problems similar to the ones given in regular Finite Mathematics which require the students to synthesize several Finite Mathematics concepts. The students performed as well on the Final Exam as they did on their first exam, demonstrating that the strategies I was employing helped improve student learning.

Reflections

My teaching of Finite and Consumer Mathematics was grounded in my teaching philosophy: that students need active practice with mathematics, that students learn best with material of direct interest to them, and that one should accept, and respond to, feedback. The course failed in many ways. The students were under-prepared to take a mathematics course at the level of regular Finite Mathematics and I had to abandon discussing one major mathematical concept in the course. The consumer mathematics portion of the material, designed to engage the students, received positive feedback in the classroom, but written SET evaluations were less positive about that material. Student learning could not be assessed with the standard departmental tool of giving common exams and evaluating student responses to specific questions on those exams. Despite my efforts to engage my colleagues in the creation of the new course, no one else has volunteered to teach Finite and Consumer Mathematics. On the other hand, over the course of the semester, the students persevered and rose to the challenge of the material. I was using harder problems typical of regular M118 Finite
Mathematics exams on the Final Exam in my course and students were doing as well as they were on earlier exams which used somewhat easier problems typical of D116 early exams. While a desired mathematical concept was dropped from the material, the consumer mathematics topics described by the Department of Theatre and Drama as being useful to their students were retained. In class, I received positive feedback from some students about the importance of learning the consumer mathematics material.

On reflection, I wish I had allowed calculators to be used when I recognized that the students could not be assessed together with regular Finite Mathematics students. My department frowned upon the use of calculators in regular Finite Mathematics. However, calculators are used, allowed, and even required in many mathematics classes and on many mathematics exams that students take before coming to college. I did not allow calculators for the first 3/4 of my Finite and Consumer Mathematics course because my plan was to assess my students against regular Finite Mathematics students who had been forbidden to use calculators on their exams. Of course, I used calculators for Consumer Mathematics because it is a very reasonable way of calculating $(1.06)^{30}$ to two decimal places! The students in my class were accustomed to using calculators in their mathematics classes, and my allowing their use might have reduced any mathematics anxiety my students felt. I regret that I did not make this adjustment while teaching the course.

Another issue that I am still reflecting on is the correct level for the course. We have students at Indiana University Bloomington who do not have the mathematical preparation to pass Finite Mathematics material in one semester. For those students, we break the material in M118 up into a two semester D116-D117 sequence. My ideas for Finite and Consumer Mathematics extend naturally to this sequence where D116 covers the probability portion of M118 and D117 covers the linear algebra portion. I envision a variable titles V117 course to supplement the probability D116 course. Since V118: Finite and Consumer Mathematics attracted under-prepared students, it seems best to offer D116-V117 Probability and Consumer Mathematics at a slower pace.

There has been at least one notable success. I inspired a new lecturer, Shabnam Kavousian, to think about developing a version of Finite Mathematics for the Education School. The Education School did not respond to my request for information on behalf of the department despite three attempts to reach them. However, we believed, even at the time, that the School was not entirely happy with our course offerings. Shabnam was hired as a liaison between our department and the Education School. She is developing a Finite Mathematics and Assessment course with the approval of our department chair and I have been advising her about the procedures and best practices for developing such courses. Thus, at least my fundamental idea - variable titles Finite Mathematics with the business-oriented linear algebra portion replaced by topics of interest to specific groups of students - seems to be gaining some ground within the department.
Example # 10

The Need for Change

During the start of the 2013 Spring Semester, I found myself in a situation I don’t recall having been in before: a nearly voiceless class. It seems as if every group of students I’ve encountered had a sufficient number who would be active participants at the beginning of the semester to prime the pump as the semester ensues. But this time, in my L303-Commercial Law II class, I found myself awash in a sea of silence, save for two students, and realized that an intervention was needed.

I employ a semi-Socratic method in my classes, a toned-down version of the law school teaching technique. The Socratic method involves the almost exclusive use of questions and follow-up questions to students, as a means to teach the law. Rarely, does a professor answer a question or explain something, because the Socratic method requires students to learn through sharpening their reasoning skills in a think-on-your-feet pedagogy. What I do is use scaffold questions as a starting point for my teaching. This approach depends upon establishing rapport, so that students feel comfortable enough with me that they will volunteer for our friendly cross-examination.

Class participation is a subject that not only has been studied in its own right (Axelson & Flick, 2011), but also from the perspective of what can be done to increase in-class engagement (O’Connor, 2013; Beekes, 2006). At least one author and law professor has considered how silence in women reflects a broader gender-issue in legal education, and has responded in her own classes with techniques to improve participation, including using small groups and role playing (Wildman, 1988).

Many business course syllabi contain a grading component related to student-participation (Alexander, O’Neill, Snyder, & Townsend, 1986), but there is little research on the role incentive plays in increasing class participation, as opposed to the punitive effects of non-participation. One study gave away iTunes songs as an incentive for college students participating in an online survey, and found that the response rate improved once the incentive increased from two to four songs (McCree-Hale, De La Cruz, & Montgomery, 2010). One professor even used “meaningless bonus points” to increase class participation, in that he gave up to 1000 points for interesting class contributions, but the class knew that the points had no bearing on any grade (Guinee, 2012). As an introvert, myself, compelling participation is something I try to avoid.

Consequently, I attempted to increase engagement through incentivizing it.

The Change in Instruction Methods

10 students were in Commercial Law II, and although two were actively involved from the semester’s beginning, the rest were primarily observers. My goal was to achieve an average of 100% improvement in student “participations” (questions/comments/explanations) per class, via incentives, in a seven-class time frame. The target date for my plan’s completion was Spring break. I recorded student participations during the initial classes, and the baseline was an average of 15 responses per each 75-minute class, or 1.5 per student.

In order to reach the participation goal of a 100% increase to an average of 3 per student per class, I restructured my teaching methods. During the class where I announced the project and
why I thought it would be a valuable learning enhancement, the following occurred:

• We conducted an icebreaker, and as each student shared something about her or his life, everyone grew more comfortable.

• I mentioned that I would do less rescuing when questions initially went unanswered and would wait longer for responses.

• I split the class into two groups, with each group having alternate primary responsibility for discussing the assigned case law.

• I said I would put more film clips and web links on Blackboard and use them to stimulate class discussion in pair-share groups, so that we could spend more time applying the legal rules at hand.

• I asked students to come to class with at least one written question about the prior class’s material, which they would ask and another student would answer. For example “What is the difference between a voidable contract and an unenforceable contract?” This was called the “three-question-open,” because class would begin with at least three student-questions.

Finally, I promised everyone a 5% bonus on their next exam and a pizza party if they could collectively reach an average of three participations per class until spring break. To students in a business school, for whom the virtues of performance based on tangible motivations are extolled, an incentivized plan hopefully made perfect sense.

Initial Survey of Student Inclination to Participate

Before the instruction methods changed, I distributed a small survey, focused on students’ natural inclination to get involved in class discussion or engagement activities. Surprisingly, students expressed a natural willingness to engage, even though their lack of engagement precipitated the intervention. I posed three statements on the Likert-type survey, with 1 the lowest response, 3 being neutral, and 5 the highest. Exhibit 1 shows the average responses.

Exhibit 1: Initial Survey of L303 Class

<table>
<thead>
<tr>
<th>Natural Comfort Level of Students to Participate in</th>
<th>3.</th>
<th>2.</th>
<th>3.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary Participation in Small</td>
<td>5</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Being Called on in Class</td>
<td>3</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Being Put</td>
<td>2</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>
Implementation and Assessment of the Plan

Beyond doing what I stated earlier, I put students into small groups for some case law discussions and various “flip it” activities. These learner-centered events involved students engaging in group homework-like activities during class, whose results were shared and compared.

Initially, I asked students to email me after every class with their number of participations, but not everyone regularly responded. So I gave students 3x5 cards and asked them to keep track of their participation activities and turn the cards back to me at the next test, several weeks away. Throughout those intervening classes, I reminded students to keep track of their participations and sometimes would say to everyone after someone participated, “See how s/he marked that down on her/his card! Keep it up, everybody!” I also thanked students for getting involved in class. And I tried to get to class as early as practicable so I could engage in small talk and rapport building with the students.

After seven classes, the students had exceeded the goal of 30 total participations in a class. In fact, the range was from 36 to 48 participations for every class. The student average was 4.3 per class and the highest individual average participation rate was 8.3 per class. However, three students failed to reach an average of 3 participations, with the lowest individual rate being 0.9 per class.

Second Round of Participation Research

After announcing to the students that they reached their goal and reward, I distributed more 3x5 cards, and asked students to continue recording their class participations for a few more weeks. I told them that, although there would be no incentive for their participation, I would appreciate if they would continue staying actively involved in class. My interest in this second round of participation research was to see if participation was reduced when there was no external reward and, if so, how much. The students’ 3x5 cards were turned in the 12th week of the semester, after seven additional classes were held.

I used the students’ incentivized participation average of 4.3 to create a second baseline for the class as a whole, while also using each student’s per class incentivized participation average as his or her personal baseline. This time, nine of the ten students’ participation diminished during this second round of research. There was only one class of the next round of seven where the class reached the collective participation count of at least 30. During this second round, the class average of participation was 2.3, less than the original goal of 3 per class. Only three students maintained an average participation rate of at least three per class during this non-incentivized period.

Likely, the most direct cause for the participation reduction during the second time frame was the lack of external incentive. The reduction also could be due to students having less urgency to keep track of their participation, as there was no longer an external incentive. As well during the non-incentivized period, I rarely reminded students to keep track of their participation activities, whereas during the incentivized time frame, I reminded students throughout and at the end of classes to keep track.
How Participation Impacted Student Learning

The purpose of my project was to increase student engagement, and it began prior to any exam being given. When participation or other forms of in-class engagement are studied, the correlation between increased participation and learning outcomes are rarely, if ever, investigated. Increased participation isn’t a means to an end; it is the end (Nunn, 1996; Guinee, 2012; O’Connor, 2013). And where incentives are used to increase student involvement in learning, exam scores have been the measure of assessing effectiveness (Clayton & Woodard 2007; Kibble, 2007).

From a triangulation perspective of assessing student learning (Parker Boudett, City, & Murnane, 2005), multiple data sources indicate that student learning was positively impacted by incentivized participation. Not only did engagement considerably increase as a result of the incentives, but after the goal was met and the incentives given, participation dropped and so did the exam grades. As indicated on Exhibit 2, nine out of ten students had lower grades on the third-and-last exam (covering the non-incentivized time frame) than for the first exam (covering the incentivized time frame), even taking into account the bonus added to the students’ first test.

Exhibit 2: Participation Rate and Exam Grade Comparisons

<table>
<thead>
<tr>
<th>Student</th>
<th>Baseline Participation</th>
<th>Incentive Average</th>
<th>Test 1</th>
<th>Non-incentive Average</th>
<th>Test 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>4.0</td>
<td>88</td>
<td>2.0</td>
<td>84</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>4.0</td>
<td>88</td>
<td>1.4</td>
<td>78</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>5.3</td>
<td>91</td>
<td>2.4</td>
<td>70</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>4.5</td>
<td>83</td>
<td>2.0</td>
<td>86</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>8.3</td>
<td>85</td>
<td>4.5</td>
<td>83</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>5.8</td>
<td>86</td>
<td>3.2</td>
<td>78</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>0.9</td>
<td>89</td>
<td>0.7</td>
<td>83</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>2.6</td>
<td>93</td>
<td>3.7</td>
<td>89</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>6.2</td>
<td>88</td>
<td>2.2</td>
<td>73</td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>1.6</td>
<td>88</td>
<td>1.3</td>
<td>76</td>
</tr>
<tr>
<td>Grade Avg.</td>
<td></td>
<td></td>
<td>87</td>
<td></td>
<td>80</td>
</tr>
</tbody>
</table>

The participation project also had a positive impact on the course project. The project is a role-play that integrates many of the course’s learning objectives. Summarily, it involves the random pairing of students, who are given a lengthy sales-of-goods fact pattern, which includes each side also having a document of secret information related to his or her fictional company’s needs and objectives. Students use the information to help them as they see fit when negotiating a sales of goods contract with their partners, which they reduce to writing by drafting a contract that conforms to the Uniform Commercial Code. Finally, students write a paper on the project, including a reflective analysis of their own and their partner’s efforts. I used a five-category rubric to assess performance. The participation project’s effect on learning was evident in the project in that the average rubric score for the project was 17.4/20, higher than the average score for the prior three semesters, where I didn’t use incentivized participation. Also, the reflective portion of the papers demonstrated that the participation
experiment bore fruit in the projects. Students repeatedly expressed how comfortable they felt working with their assigned partner, in both the negotiation and drafting phases – something that was made possible by their consistent connection with their classmates throughout the altered semester.

After the second round of participation research, I asked students to take a second survey on the participation project. Nine students took the survey. When asked to rate how effective the participation project was at increasing their comfort level at voluntarily participating in class, six rated the project as “effective” and three rated the project as “very effective.” When asked how effectively the participation project increased their comfort level at being called on in class, seven students rated it as “effective,” and two students responded that it was “neither effective nor ineffective.” When asked how much the incentive to participate affected their voluntary participation, five students rated it as having “had some effect,” three rated it as having “had considerable effect” and one rated the incentive as having “had no effect” on their comfort level. And when asked how much they believed the increased participation affected their learning, all respondents stated that it “had a positive effect.” All responded “yes” to the question whether they would recommend this type of participation project to be used again.

Students also were invited on that survey to make any comments about the project and, while all comments were positive, two stand out for their connection to the project’s effect on learning:

“Listening to other people’s questions sometimes verified/clarified things discussed, this was very nice.”

“I feel the incentive was more motivating and caused me to want to dig deeper into the cases and the chapter as a whole prior to coming to class.”

Near the end of this semester, I surveyed students for a third time, using a Likert-type survey, with 1 being strongly disagree, 3 being neutral, and 5 being strongly agree. Here, my goal was to see if, after the dust from the prior semester had settled, students believed the participation project had a beneficial effect on their learning, both then and currently. Of the ten students I queried, five responded (at least two of the nonrespondents graduated and were likely not using their IPFW email accounts). When asked whether they thought the participation project had a positive effect on their learning in Commercial Law II, four students responded “Agree” and one student responded “Strongly Agree.” And when asked if the participation project contributed to an increased level of participation in other classes they were then taking or later took, three responded “Agree” and two responded “neutral.”

Continued and Transferred Use

I continued this participation project in my current L303-Commercial Law II course, where there are 18 students. One change I made this semester was to individuate, rather than collectivize, the incentive. After the first round of participation monitoring, the average rate of participation did not reach the goal, which for this class was 2.5 per student. As a result, I tried a second round of the project and told students that those who could reach the 2.5 average over both time frames could earn the extra points, even if the class collectively failed to meet the goal. I also held the pizza party after the first round of participation, in an attempt to encourage everyone to keep striving for a second round.

One aspect of the project that I am transferring to other classes is the “three-question-
open,” where before I begin teaching, students ask and answer their own three questions about the prior class. This helps me realize what I may have missed in the prior class as being important, as well as identify what students are focusing on in their study. And it provides another pathway for learning and retention.

To seek validation of this engagement activity, I submitted it as a proposal to the 2014 SoTL Commons Conference, an international academic conference hosted by the Georgia Southern University Center for Teaching, Learning, and Scholarship. My proposal was accepted and I look forward to sharing my project and its results in March 2014.

References


Example #11

One of my goals is to increase each student’s “toolkit” of knowledge and experiences to better prepare them for real-world challenges. This narrative will focus on one of the projects I have designed and refined over time using direct and indirect measures of student learning. The project is in the BUS-Z445 Human Resource Selection (HRS), a semester-long service-learning project (SLP), although it did not start out that way. The HRS course has a core of foundational knowledge on how to effectively recruit, select, retain and deploy the human talent in a company. The purpose of the SLP is for students to apply what they have learned in the course and create a selection plan for a job in an actual organization.

Iteration 1:
I taught this course for the first time in spring 2009. In designing the class, I wanted to provide students with the opportunity to experience the HR process of analyzing a job, creating a job description and then using that information to create a selection plan on how to best hire someone for that job. This process would require students to put into practice Bloom’s higher-order thinking skills (apply, analyze, synthesize, and evaluate). To achieve this, I created a series of small assignments, each building on the work of the previous one:
1. Create a set of job analysis interview questions;
2. Interview a classmate about their job;
3. Use data collected in the interview to write a job description; and
4. From the job description, create a selection plan for that job.

I did not collect direct evidence of student learning the first semester I taught the course, because I did not have measurable learning objectives. However, that did not preclude me from making changes to the project based on personal reflection and student feedback. In my reflection, I was disappointed in the quality of work students produced. The students did not see much value in interviewing a classmate. Also, they did not have to make decisions and debate other options among peers. In the real world, many of the decisions being made would be within a team setting. I conducted a debrief assessment session with the students at the end of the semester and asked them what information would have been helpful from the beginning to make the project more understandable. Students highlighted the following things:
- The instructions were not very clear.
- More detailed information about each assignment would be helpful.
- Some students said the assignments seemed like busy work.
- The students were dissatisfied with the level of feedback they received on each assignment.

SETs from students also provided evidence of their lack of understanding of the objectives of the course. When asked if the objectives of the course were clearly stated, 25% of the students disagreed with this statement.

Iteration 2:
Based on the feedback from the first semester, I made several revisions to the project.
First, I created a set of measurable learning outcomes (LOs) (see below) for the course. This development was the initial step in addressing the quality of work students produced, as well
as their concerns over a lack of detailed instructions and feedback. The LOs allowed me to better explain my expectations to the students and assess student learning, therefore providing higher quality feedback.

**Learning Outcomes:**

Upon completion of this course, students should be able to:

A) Evaluate the external environment and determine its effects on staffing decisions;
B) Develop an effective staffing and development plan for a real job;
C) Apply HR techniques to complete a thorough job analysis of a real job;
D) Assess the effectiveness and legal implications of tools used for personnel selection; and
E) Describe how employee staffing influences a business organization's competitiveness. Of these five LOs, the Service Learning Project assesses four of them (B, C, D, & E). Outcome A is the only one not included as part of the SLP, although it is completed in other areas of the course.

Second, to encourage students to discuss and debate the pros and cons of their decisions with their peers, I converted the project from an individual to a group assignment. I also recruited a friend in the business world, whom each group of students interviewed about his/her specific job. This added more realism to the project, because students were interviewing a professional as opposed to a classmate.

Third, I made some improvements to the project instruction. Here the feedback from students during the initial debriefing was extremely helpful. I created a specific list of deliverables that needed to be turned in for the job analysis and listed the specific questions the students needed to answer in their selection plan. This list eliminated many of the questions and feelings of ambiguity the students had. For example, the first time I taught the course with these improvements, when asked if course objectives were clearly stated, 100% of students either agreed or strongly agreed. This was a significant improvement over results on the same item for iteration 1. Below is the direct evidence of student learning related to the course LOs for the fall 2011 semester. (Outcome A is the only one not assessed with the SLP so I have not included it in the chart.) I assessed students based on the standards used by the IU Southeast School of Business to maintain our accreditation. That standard places student mastery at 80%. The table below shows the percentage of students scoring at 80% or higher on each LO.

<table>
<thead>
<tr>
<th>Z4</th>
<th>Human Resource Selection (30 students enrolled)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Learning Outcomes</td>
</tr>
<tr>
<td></td>
<td>LO.</td>
</tr>
<tr>
<td>1</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Iteration 3:**

Upon reflection, I continued to be frustrated with the lack of realism in the assignment.
In addition, students were not mastering learning outcome E; only 45% scored in the mastery range. In the debrief session for iteration 2, students noted a lack of understanding of the basis for the grade.

In an attempt to increase the level of realism in the project, I contacted a graduate of the HR program who was working in that capacity for Stock Yard Bank and Trust. She went through the class in fall 2011 (iteration 2) so she was familiar with the project. The company identified two jobs that needed updated job descriptions, so we built the project around these. This real life situation presented a great opportunity for students to work with an actual organization as “consultants.” This scenario also allowed us to incorporate the larger organizational context (e.g., vision, mission, and culture) and gave students the opportunity to better assess how staffing influences organizational competitiveness (LO: E).

The students completed the same assignments as in previous semesters, but this time a real organization was going to be using the data and information collected to improve their actual practices. This authenticity was a very powerful learning experience for the students. Several students commented that because the stakes were higher their level of dedication and focus on the project increased significantly. At the end of the semester, representatives from Stock Yard Bank and Trust attended the group presentations and provided feedback. This direct feedback allowed students to see how the organization viewed their work, and subjected them to the type of questions and interaction they can expect to see when they enter the HR field.

To address the students’ questions from the previous semester about how the grade was assigned, I created an assessment rubric that specifically detailed the areas in the selection plan and their value. This documentation also assisted the bank representatives in providing quality feedback to the students based on the expectations of the project.

Below is the direct evidence of student learning related to the course LOs for the fall 2012 semester.

<table>
<thead>
<tr>
<th>Z4</th>
<th>Human Resource Selection (30 students enrolled)</th>
<th>Final Grade Percent of Students at or above Mastery level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Outcomes</td>
<td>(B) Develop an effective staffing plan for a real job (project).</td>
<td>(C) Apply HR techniques to complete a thorough job analysis of a real job (project, assignments);</td>
</tr>
<tr>
<td>1</td>
<td>100%</td>
<td>95%</td>
</tr>
</tbody>
</table>

Overall, 86% of the students scored at the mastery level or above, which was up from only 79% the previous iteration. All of the outcomes showed a high level of mastery except outcome E (60%). However, this result was a significant improvement from the previous semester where only 45% achieved this level of mastery. I looked into the data for outcome E further to better ascertain student learning. This outcome is assessed via exams, assignments and the SLP. There are three assessments of outcome E: one early in the semester, an exam midway through, and finally the selection plan at the end of the term. When I broke out the data into these three groups, it revealed the students scored lower on the assignments (30%) and exams (50%), but on
the final selection plan 100% of the students scored at mastery level or above. The selection plan is the last time this outcome is measured. This data reveals that students improved in this area as the semester progressed. So while the overall score appears low at 60%, in actuality, all the students did learn how staffing influences an organizations’ competitiveness.

I view learning as a journey where I try to expose students to real-world experiences. Students begin the expedition in the HRS course as “babies” struggling to speak the language. By the end of the semester, they are “walking” confidently, having gone through this process. The project is a journey that requires students to apply, analyze, synthesize and evaluate different selection techniques and material. It also allows them the opportunity to network and interact with members of the community. This contact adds a sense of realism and pressure that is difficult to achieve in a classroom environment, but it is something I truly believe is important to the learning process.

Students have a love-hate relationship with this project. They hate doing it because it is a large undertaking in a 14-week semester, especially on top of their other course work. Further, each piece of the project is contingent on the quality of the previous one. This linkage creates stress for students because it pushes them outside their comfort zone. Once the project is complete and they reflect on it, however, students begin to see the value of and appreciate what they have achieved. After the course, they are more confident in their ability to use the information learned. Here are a couple of comments from the students:

- “Group projects helped me develop the skills needed to construct a selection plan. Group work also gives real-world experience in effective team building and managing conflict” (Fall 2012).
- “I think projects for job analysis and selection plan are excellent training material” (Fall 2012).

**Summary:** I am strongly dedicated to continuous improvement in teaching using direct and indirect measures of student assessment. Partnering with an organization to make this SLP as realistic as possible allows the students to get a preview of one aspect of HR. Using student feedback through SETs and debrief sessions, as well as measuring student success through the course LOs, has assisted me in creating a quality experience that students remember. The students talk about the course when it is over and even come back to assist with it once they graduate and receive full-time jobs. The fact that former students come back to partner with the course demonstrates the value they see in the project, even as alumni. This continuing influence is the ultimate validation of what I am trying to achieve and my methods.

This project is unique in the HR courses I have encountered. I have shared the curriculum with other HR educators at a conference and received excellent feedback. One colleague commented that he was stunned to see a SLP in a HR course. He had simply never considered the possibility. I am proud of this SLP and what it has become. Creating it was an iterative process that took several years to develop. Going forward, I will continue to make improvements by measuring student learning and gathering indirect feedback from students and the organizations involved. Continuing this cycle of improvement will further help me achieve my goals as an educator: to create a quality learning environment that emphasizes fundamental course concepts and fosters critical thinking.