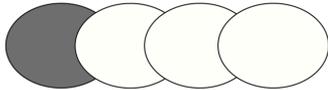


Essential Practices



ALIGNING GOALS, ASSIGNMENTS AND PRACTICES

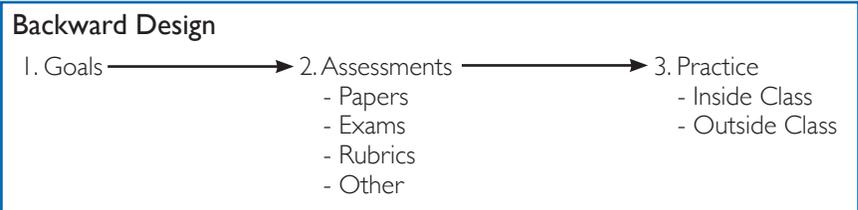
Course design involves identifying goals, planning what to teach and opportunities students will have for learning, and how you'll evaluate whether students are meeting course goals. Designing a course can be done adeptly with backward design: determine concepts you want students to master, then plan how you'll determine whether they have learned the concepts. This approach guides which resources and methods you use to facilitate learning.

As you plan, you may experience some tension about how much you should cover in your course. Identifying key course topics can help you achieve balance. Three questions from Wiggins and McTighe (1998) can help you identify these key topics:

1. To what extent does the idea, topic, or process represent a "big idea" having enduring value beyond the classroom?
2. To what extent does the idea, topic, or process reside at the heart of the discipline?
3. To what extent does the idea, topic, or process offer potential for engaging students?

Consider students' goals and characteristics. Students may take your course to understand principles, learn to communicate effectively, learn to organize ideas or interpret data, or understand how researchers gain knowledge. Use this information, along with course goals, to guide your course structure and teaching pace.

After you choose material, establish criteria for obtaining evidence of learning. A key feature of backward design is that understanding increases across time, as students process, reassess and connect information. Therefore, assessments to measure increasing levels of understanding should be conducted throughout the semester by various means such as discussions, tests and quizzes, and projects in which students analyze their own understanding. Once you decide upon course concepts and assessment criteria, focus on which teaching strategies will help students reach course goals; key concepts, rather than a methodology, drive teaching.



WHAT DOES ALIGNMENT MEAN?

When we speak of alignment, we're talking about connecting course goals and course practices. We may have clear course goals, but they may not relate to the way we structure a course. Instructors may insist that their goal is to encourage application and analysis, but then test students only on fact memorization.

If your goal is to encourage critical thinking, then a course activity aligned with that goal may be having students practice reading and analyzing dissenting viewpoints. If your goal is to help students become effective consumers of research, then aligned assignments may be reading and integrating scientific research. In this way, relationships between our goals and our practices are transparent and reinforced.

A key part of Holly Storkel's success as a teacher has been how she carefully aligns course goals with students' assignments and her teaching practices. At the end of a course, she examines student work to identify specific skills students have difficulty with, then targets those skills during the next offering of the course. In this way, she is using student performance to guide her course goals, and evolution of her course's design stems from those performance markers. You can find out more about her work in her course portfolio in the CTE gallery: cte.ku.edu/portfolio.

SYLLABUS CHECKLIST

1. Basic information: Course title and number, semester and year of course, meeting time and place, faculty information
2. Course description
3. Prerequisites
4. Course goals and objectives
5. Textbooks and readings by authors and editions
6. Assignments, term papers and exams
7. Student evaluation and grades
8. Course policies
9. Options for students with special needs
10. Course calendar/schedule

WRITING A SYLLABUS

When you're writing a syllabus, start with basic information: the year and semester of the course, title, class number, number of credits, and meeting time and place. Provide your name, office address (and a map if it's hard to find) and contact information. Indicate whether students need to make appointments or may just stop in. If you list a phone number, specify restrictions for its use. Clarify prerequisites, knowledge, skills or experience you expect students to have or courses they should have completed. Suggest how they might refresh skills if needed.

Outline the course's purpose: What is the course about and why would students want to learn the material? Describe three to five general goals, and explain why you've arranged topics in a given order and the logic of concepts you've selected. Tell students whether the class involves fieldwork, projects, lectures or discussion, and indicate if any activities are optional.

Explain why textbooks and readings were chosen. Show the relationship between readings and course objectives. Also provide details about additional materials that will be needed.

Specify the nature and format of assignments. Give exam dates and indicate the nature of the tests (e.g., essay, short-answer). Explain how assignments relate to course objectives. Describe your grading procedures, including components of the final grade and weights for each component. Explain whether you'll grade on a curve or use an absolute scale, and if any grades can be dropped. Also explain any other course requirements, such as study groups. Clearly state your policies about class attendance, late work, missing homework, tests or exams, makeups, extra credit, requesting extensions, reporting illnesses, cheating and plagiarism. You might also list acceptable and unacceptable classroom behavior (see Communication Guidelines, page 53). Let students know that if they need an accommodation for any type of disability, they should meet with you to discuss what modifications are necessary. You can find a sample statement for this at achievement.ku.edu/sample-syllabus-statement.

Include a calendar with a sequence of topics and readings. Exam dates should be firmly fixed; dates for topics or activities may be tentative. Also list the last day students can withdraw without penalty. Give them a sense of how much work the course requires.

A syllabus is a contract between you and your students. Consider adding a statement to protect yourself if changes must be made: "Course schedule and procedures are subject to change in the event of extenuating circumstances." For more information, see cte.ku.edu/preparing-course#syllabus.

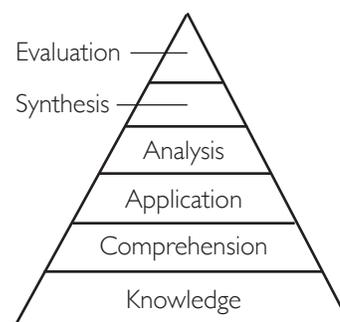
DEVELOPING ASSIGNMENTS

One of the most important features of course design is developing opportunities for students to demonstrate what they know, how well they understand course material, or how well they can use skills they are developing in the course. Some of these occasions will be low-stakes, for practice to help students grow in their understanding of course material, and some will be high-stakes, for a significant portion of a final grade. Whether for practice or for evaluation, the performance asked for on assignments should closely represent your course goals (see box on page 5), and students should always receive informative feedback on their performances. Learning is maximized when students use their understanding in challenging ways and find out from you which features of their work match your expectations and which don't.

The performance appropriate for any individual course is likely to cover various domains, and most courses should include a range of performance. Within a single course, students will identify basic terms, facts or information about a field and also apply concepts in new, untaught situations. It's possible that they may combine ideas or generate their own evaluation of observations or findings. It's not possible to engage in complex analysis or critical thinking without some basic knowledge of a field, but merely reciting basic knowledge without being able to use it or evaluate it is equally limiting. As an instructor, you'll decide how to distribute the assignments you give across that continuum, from remembering to using to evaluating. Research on memory consistently finds that rote learning is forgotten most quickly, but ideas and information that are used in new contexts or connected to existing understanding will be remembered best.

Consider work done by Benjamin Bloom (1956) and his colleagues many decades ago. They framed a set of categories of learning performance, ranging from rote remembering to complex evaluation, hoping that teachers would include a variety of opportunities for students. Subsequent scholars have added new language to the basic ideas (often called Bloom's Taxonomy), and many people list verbs that go with the different categories of skills. When you give assignments using those verbs, the notion goes, you are likely tapping into that category of learning. In the box at right, we reproduce one contemporary treatment of these categories and accompanying assignment verbs for your use. Consideration of these categories will help you distribute student work across the range of this useful intellectual continuum.

BLOOM'S TAXONOMY



Descriptions of each level and appropriate terms for asking questions at each level follow:

Evaluation—Make judgments about the value of materials or methods for given purposes; make appraisals that satisfy specific criteria: *appraise, compare, conclude, contrast, criticize, describe, discriminate, explain, justify, interpret, support.*

Synthesis—Combine elements to form a whole; arrange elements to form a new structure: *categorize, combine, compile, tell, devise, design, explain, generate, organize, plan, reconstruct, revise.*

Analysis—Break material down into elements; make relationships between ideas explicit: *differentiate, distinguish, illustrate, infer, point out, relate, select, separate.*

Application—Use abstractions in concrete situations: *demonstrate, modify, operate, prepare, produce, relate, show, solve, use.*

Comprehension—Use information without necessarily relating it to other material or seeing fullest implication: *convert, defend, distinguish, estimate, explain, extend, generalize, give examples, infer, predict, summarize.*

Knowledge—Recall specific facts, general concepts: *define, describe, identify, list, match, name, outline, select, state.*

Ben Eggleston redesigned his introductory ethics tests to avoid simply testing memorization while still making his exams easy to grade. His tests retained their multiple-choice format but required students to apply knowledge and definitions instead of simply restating them.

Unlike questions that test only memorization of definitions, the new questions, which were set up as conversations in which students were asked to choose certain statements that reflected particular ethical positions, require students to apply deeper understandings of concepts to novel situations. The advantages of the conversational format are that the student has to grasp the content rather than merely recall a phrase or expression that he or she could remember from the book or class notes and that they better test the kind of understanding that will serve students well outside the classroom.

Old question: What is the main idea of cultural relativism?

- (I) Moral beliefs vary from one culture to another.
- (J) Morality itself (not just moral beliefs) varies from one culture to another.

New question: In the following dialogue, which of the following statements is incompatible with cultural relativism?

- (A) Some countries rely heavily on child labor, and would suffer devastating economic consequences if they were forced to give it up.
- (B) Despite these consequences, the harms to children are too great to ignore. It is wrong of those cultures to force children to work.

ASSIGNMENTS AND ASSESSMENT

For testing to be effective and worthwhile for you and your students, consider the exams you'll implement when you're designing a course. If evaluation is considered only in hindsight, it's likely your time will be used ineffectively and students will be discontent with how their learning was assessed.

Design tests that will measure the goals you set out to achieve in the course and be clear in your instructions. Walvoord and Anderson recommend teachers ask themselves the following question: "By the end of the course, I want my students to be able to (fill in the blank)." Use your responses to guide assessment design.

It's often advantageous to mix types of items (multiple choice, essay, short answer) on a written exam or to mix assessments throughout the course (e.g., a performance component with a written component). Weaknesses connected with one type of item or aspect of students' test taking skills will be minimized. It's also useful to ask how students in the future would be likely to use what they are learning in your course. If they'll be expected to recognize an example of a phenomenon or category, then give them opportunities to attempt such recognition in your course. If they'll be asked to evaluate the evidence for a claim relevant to your field, then your assignments should give them practice in such evaluation and graded feedback on their skill at it. Be sure that your assignments (both for practice and for grading) engage students in the kind of knowing or understanding that will be useful to them in future courses and in application to real life.

Grading student work is rarely easy. In some cases, you can simply count the number of factual or simple items done correctly, but understanding measured by a more complex performance will need to be judged. Walvoord and Anderson (2010) outline strategies for grading in various fields. They claim that establishing a set of clear criteria ahead of time will make grading easier for a teacher, more consistent across students, and even faster to get done. The key is to think through the range of feedback you want to give (e.g., points from 1 to 10 or letters from A to F) and identify how you would recognize or characterize a performance in each category. What are the strengths of an answer at each level, and what might be missing that would keep it from being in a higher category? What are the habits of mind or the kinds of knowledge demonstrated that characterize levels of understanding?

When you engage in this kind of thinking, your work giving feedback will be less challenging and more efficient. If you then share those criteria with your students, they can learn more clearly what you mean by understanding, and there will be fewer occasions for disagreement about feedback. Ambiguous or unstated criteria are

a common cause of conflict and frustration for students. Investing time up front to think through your grading criteria will pay dividends in saved time and hassle later.

DESIGNING WRITING ASSIGNMENTS

John C. Bean (2011) states that writing assignments, particularly essay exams, can help students exhibit their mastery of material, synthesize course material, and better understand the goals and direction of the overall course, thus increasing overall retention and understanding of material. He states, “Essay exams send the important pedagogical message that mastering a field means joining its discourse, that is, demonstrating one’s ability to mount effective arguments in response to disciplinary problems.”

In order for students’ writing in assignments and exams to improve, students need to be taught how to write essays. One strategy is to provide students with copies of essays from previous years’ classes, without any instructor comments. Have students rank the essays from best to worst, and ask the class to list which factors they think distinguish an A paper from a B, C, and so on. After that, explain your grading criteria and discuss them with the class. In that way, students are more likely to internalize these criteria and apply them to their own work.

Allowing students to assess previous writing assignments could also be used with a Primary Trait Analysis-designed rubric. The teacher determines criteria for each score within the rubric and describes this in a handout given with the assignment or included in the syllabus. Having students work with the rubric to assess another student’s work will help them understand the assignment and hopefully aid them in their own work.

Other ideas for teaching students how to write essay exams include allowing students to practice writing cogent thesis statements in small groups, thus gaining insight and guidance from others, and allowing students to revise an essay, so they receive guidance and learn strategies for future writing assignments.

Another method for increasing processing of information through the design of in-class essays is including time for pre-writing and synthesis before the essay is given. Some ways to achieve this include providing students with a list of all potential essay questions before the day of the exam, requiring students to create and bring to the exam a crib sheet for each essay question, which they can use to answer the essay questions, or assigning take-home essay exams. All these methods allow students time for deeper critical thinking and organization of their arguments.

For course-specific guidance on developing writing assignments, contact the KU Writing Center at 785-864-2399 or writing@ku.edu.

In my Cognitive Development course, students write a paper that takes the form of an advice column, providing recommendations to parents based on psychological research. To complete this assignment, students identify and locate appropriate sources, read and evaluate psychological research, apply findings to a real-world question, and write a response to that question. The project is the culmination of the course and is designed to integrate skills I want students to take away from this class.

When I first taught the course, students were required to locate, analyze, integrate and apply at least five research articles in their papers. I found that students had difficulty with each step of this process. As a result, I’ve made a number of changes to better scaffold, or support the attainment of, these skills. Across multiple offerings, I’ve decreased the number of articles required for the paper and increased the number of supporting assignments. Students turn in articles early in the semester for feedback, analyze a scientific research report, write brief essays that require application of research, summarize each article they’ll use in their paper, and meet in groups to discuss and review summaries. I encourage students to submit rough drafts for further feedback. Each semester I’ve used a rubric to evaluate students’ mastery of skills and changed the assignment based on areas that need more support.

For more about this process, see my portfolio in the CTE Gallery (cte.ku.edu/portfolio).

—Andrea Greenhoot

GRADING STRATEGIES

Walvoord and Anderson (2010) have established nine grading strategies to make the task more efficient and effective:

1. Separate commenting from grading, and use them singly or in combination according to your purpose.
2. Do not give to all students what only some need; e.g., give unofficial grades to those students who need them, and only comments to those who don't.
3. Use only as many grade levels as you need; grading work A, B, C, etc. is more time-efficient than grading work A+, A, A-, B+, B, etc.
4. Frame comments to your students' uses; if students do not need or want your comments at a particular time, don't waste time writing them.
5. Do not waste time on careless student work.
6. Use what the student knows. If a student can evaluate parts of her own work, there is little need for the instructor to do so as well.
7. Ask students to organize their work for your efficiency. For example, having students fill out a checklist of completed tasks can save time on worrying about assignment logistics.
8. Delegate the work, such as instituting peer reviews to check for certain issues on papers.
9. Use technology to save time and enhance results.

GIVING STUDENTS FEEDBACK ON LEARNING

Once you've created assignments for students to carry out, you'll need to give students feedback on how well they've performed. To be efficient you'll need to accomplish all your feedback goals with a single consideration of the work. You'll do this for several reasons. One version of the multiple purposes of feedback in the form of grades comes from Walvoord and Anderson (2010), who identify four roles of the grading process:

1. The overall distribution of grade categories evaluates student learning in relation to course material and goals; the performance lets the instructor (and an academic program) know how well the course has succeeded in generating learning.
2. The grade category of an individual student communicates the level of learning to the students, as well as to employers and to other teachers; it serves as an indicator of individual achievement and likely subsequent performance in the field.
3. Since our academic and employment communities value successful learning, grades also function as a motivation device for students; to the degree that students desire recognition for their work, they will focus on their achievement.
4. Graded assignments also organize course components by marking significant transitions between topics and by bringing closure to particular segments of the class; both students and the instructor know how well prepared everyone is for the topics that follow.

Conventional grading can accomplish these goals when criteria for grading are made very explicit. This would include general descriptions of the kind of performance that would be recognized in different categories of grade, as well as individual feedback on how and why performance did or did not match the features of the grading categories. Research evidence consistently shows that students who receive more detailed feedback on the reasons for their grades improve their performance more than students who simply receive a grade.

In order for grading to be an effective and meaningful part of the learning-centered classroom, it must be part of the teaching and learning process as a whole. Walvoord and Anderson (2010) write that grading must be integrated into all planning, teaching and interacting in the classroom, but that learning must always remain the central function of the classroom.

ASSESS THROUGHOUT THE SEMESTER

To assess student progress, try to collect information continuously on student learning and growth. According to Angelo and Cross (1993), the most effective times to provide low-stakes feedback to students are before chapter tests and before the midterm and final exam, so that both instructors and students gain information about areas that are clearly understood and areas that are not. It's also helpful for instructors to test students early in the term and consider discounting the first test if results are poor; students often need a practice test to understand the format and anticipate the best way to prepare for and take particular tests.

Empirical evidence for the recommendation to assess often was supported by memory researchers at Washington University (Glenn 2007). Their studies showed that giving short quizzes to students early and often helps implant facts in long-term memory. Tests written in a short-answer format proved to be superior to multiple-choice tests in regard to helping students retain information. Other studies cited in the report demonstrated why cramming doesn't work: When students studied an unfamiliar fact again and again in immediate succession, it felt better embedded in their memory than it actually was. Creating an interval between the times students studied an item led to higher retention rates.

ADMINISTERING TESTS

Time-limited assessments such as tests or presentations can be very stressful for everyone. Especially in large classes that play a role in sorting out students' future careers, there can be challenges to academic honesty. Whenever possible, it's best to create testing occasions that avoid some of the tension and potential for abuse. If your tests are mostly at the rote end of Bloom's framework (page 7), students will perceive that their primary job is to memorize and regurgitate bits of knowledge; these are the kinds of tests that are most amenable to forms of unacceptable collaboration or information transfer. If possible, include items that ask students to do more than merely memorize. You can even provide basic information in the question, but ask students to demonstrate their ability to use intellectual skills to analyze the information given. Items that involve written answers present fewer issues than items with multiple choice formats. Exam items that are more complex in the Bloom framework are not as amenable to academic misconduct. That will relieve your testing situation of some tension due to mistrust and avoid the necessity for maximum security procedures.

If you decide to use test performances that lend themselves to various forms of misconduct, then you'll need to adopt a more skeptical attitude. There are many sources of practical advice, such as alternating forms and mixing bluebooks. See Davis' (2009) guidelines in *Tools for Teaching* for more suggestions.

TEST DRIVES

Robert Magnan (1990) suggests taking your students on a "test drive" to help them prepare for your exams. When you design a test, save items you decide not to use. Make a practice test with these items along with instructions for the exam, including the percentage or points for each section or exercise, and have students complete this practice test in class.

This technique has two advantages: You can test your exams and expose students to instructions. If an exam structure is weak, you can improve it before the exam. If instructions are unclear, you can clarify them.

The test drive should include only a sample of test items. Correct and discuss them as a group. If there are several possible answers, indicate which are better and why. If you've included essays, ask students to list the essential points they think should be included when they answer the essay question, and then evaluate their responses.

The key is to use the minimum amount of time to get the maximum benefit for you and your students.

TWO-STAGE EXAMS

I use two-stage exams with the following goals:

1. First stage (individual) to hold individuals accountable to be able to apply concepts to solve problems;

2. Second stage (group) to hold the individual accountable to be able to explain his/her solution and identify mistakes in the individual's or in a team member's solution.

Scratch cards are used for the second stage to give each group the opportunity to discover the correct solution before leaving the exam. It's quite entertaining to watch groups celebrating their success.

—Carl Luchies

TWO-STAGE EXAMS

An additional strategy for relieving some of the tension around testing is to use two-stage exams. Carl Wieman, a Nobel prize winning physics professor at Stanford, describes them as follows:

The two-stage exam is a relatively simple way to introduce collaborative learning and formative assessment into an exam. In a two-stage exam students first complete and turn in the exam individually, and then, working in small groups, answer the exam questions again. During the second stage, the room is filled with spirited and effective debate with nearly every student participating. This provides students with immediate targeted feedback supplied by discussions with their peers.

In the classic exam, students are intensely engaged with the material, but they lose the opportunity for formative assessment, because the feedback is mainly right/wrong and comes a long time after the exam. By contrast, in a two-stage exam, students receive immediate, specific feedback and increase their mastery.

In our two-stage exams, students participated strongly in the discussions, and their reactions were overwhelmingly positive. Even those who found the discussions uncomfortable, because they saw where they had made mistakes, acknowledged that they learned what they needed to learn.

For detailed information about implementing two-stage exams (which can be used in any discipline), see teachingcommons.stanford.edu/teaching-talk/turn-exam-learning-experience-two-stage-exams

This strategy has advantages and disadvantages. If more students learn, then grades will be higher and some people will complain that the course doesn't differentiate the best students. On the other hand, a tactic that generates more learning is more valuable. It's worth remembering that most academic work we care about (theses, dissertations, journal articles, grant proposals) are always done over and over until they reach a high level of quality. It seems odd to presume that students should get one try and one try only for their work.

If you want students to see that testing can be part of learning and that cheating isn't a sensible option, rethink how you approach evaluating students. Using complex forms of assessment like two-stage exams will go a long way toward establishing a climate that promotes learning.

GRADING WRITING ASSIGNMENTS AND ESSAY EXAMS

When it comes to grading student work, a number of instructors fall into one of two traps: undergrading or overgrading. Some instructors simply mark mistakes or note negative points and give a grade. However, telling students to “clarify this” may be like telling them to “be tall”; they might not know how to do what you ask. Other instructors give too much feedback, spending too much time marking students’ careless mistakes. This overwhelms students and unnecessarily overtaxes faculty members. When you grade, consider how you can help students see why they might have made particular errors, to help them focus their thinking on areas where they need the most work.

In his book *Engaging Ideas: The Professors’s Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom*, John Bean (2011) offers four recommendations for grading essay exams. First, don’t look at students’ names when you read the exams, or have students write an ID number [*editor’s note*: not a Social Security Number] on the test instead. This way, you’ll be able to eliminate grader bias. Second, grade the exam one question at a time, rather than reading the whole exam of each student. This will help with grading reliability.

The third recommendation Bean provides is to shuffle the exams after you complete each question so that you read them in a different order. Record scores in such a way that you don’t know what a student received on Question 1 when you grade Question 2. Finally, if time permits, you should skim a random sample of exams before you make initial decisions about grades. Your goal is to establish anchor papers that represent prototype A, B, and C grades. Then, when you come to a difficult essay, ask yourself, “Is this better or worse than my prototype B or C?”

Another method that works well for grading papers and essays is using a scoring rubric. Developing a rubric requires four steps (see right). The advantage of using rubrics is that, rather than writing out extensive comments, you score the essay or assignment using the rubric, making this an efficient way of grading. Students can refer to the rubric when writing the assignment, as well as use their scored rubric to examine their work’s strengths and weaknesses. This method also increases inter-grader reliability when multiple individuals grade assignments. Examples of rubrics used in KU courses are provided in Appendix E. See Walvoord and Anderson’s *Effective Grading* (2010) for more about rubrics.

John Bean also provides useful advice about developing rubrics, as well as dealing with issues of grammar and correctness (chapter 5) and coaching the writing process and handling the paper load (chapter 15). Copies are available in the CTE library.

FOUR STEPS TO CREATING A RUBRIC

1. Choose a test, assignment or group of assignments that you’ll evaluate. Clarify your objectives.
2. Identify the criteria or traits that will count in this evaluation. These are usually words or phrases such as “thesis,” “use of color,” or “use of relevant examples.”
3. For each trait, construct a two- to five-point scale. Each point relates to a descriptive statement; e.g. “A 5 thesis is clear and appropriate for the scope of the essay; it neither repeats sources nor states the obvious.”
4. Try out the scale with a sample of student work and revise as needed. CTE also has samples of rubrics available.

Jorge Pérez’s course portfolio contains an excellent example of both a means for developing a rubric and ways to use it effectively.

Kim Warren’s course portfolios also provide excellent examples of rubrics.

You can find all of these in the CTE gallery: cte.ku.edu/portfolio.

UNIVERSAL DESIGN STRATEGIES

Class climate. Reflect high values with respect to diversity and inclusiveness. Invite students to discuss accommodations or other learning needs.

Access, usability and safety. Ensure that activities, materials and equipment are usable by all students. Develop safety procedures for all students; label equipment simply, in large print; repeat printed directions orally.

Delivery. Vary methods of instruction. Use multiple modes to deliver content and engage students—lectures, collaborative learning, hands-on activities, etc.

Information resources. Ensure that course materials are accessible. Choose printed materials and prepare a syllabus early to allow students to start readings and assignments before class begins and to allow time to arrange alternate formats.

Interaction. Encourage interactions between students and instructor and among students; ensure that communication methods are accessible. Assign group work for which learners support each other and that values different skills and roles.

Feedback. Provide feedback regularly. Allow students to get feedback on parts of big projects before the final is due.

Assessment. Regularly assess progress with multiple methods; adjust instruction accordingly.

Accommodation. Know how to get materials in alternate formats, reschedule classrooms and arrange other accommodations for students with disabilities (Burgstahler 2007).

INCLUSIVE TEACHING

An inclusive classroom climate is one that embraces diversity and creates an atmosphere of respect for all members of the KU community. Feeling unsupported and isolated in the university environment puts students at a high risk for dropping out of college, particularly in the first two years of the curriculum. The Center for the Integration of Research, Teaching, and Learning argues that we can capitalize on the rich array of experiences, backgrounds and skills that diverse faculty and students bring to the classroom to the benefit of all. Here are some strategies that faculty can adopt to promote a sense of belonging, validation, and mutual respect in our classrooms.

Look for ways to increase student exposure to the diversity of human experience. Choose content and examples that address and model diversity, regardless of the subject. Although issues of diversity may at first glance seem more relevant to some disciplines than others, scholars in any discipline can discuss the way that different frames of reference and cultural assumptions affect the accumulation of knowledge.

Include issues of diversity as part of the course learning outcomes. Use images of people that represent various ethnicities, races, and genders, and use a broad range of analogies and examples. Make your classroom inspiring for underrepresented students. Discussions of the contributions of diverse scholars and providing role models representing a range of cultures, races, genders, or sexual identities conveys that everyone can be successful.

Create diverse groups or learning teams. When using instructor-formed groups or learning teams, avoid (when possible) creating groups that either isolate underrepresented students or create homogenous groups of students. Students who feel isolated within their team may lose the benefits of collaborative learning, and may have an amplified feeling of marginalization at the university. Provide guidelines for group interactions, check on group functioning through peer feedback, and intervene to shift or structure groups as needed.

Reduce stereotype threat. This term was coined by Steele and Aronson (1995) to refer to situations in which the performance of negatively stereotyped groups suffers when that stereotype is activated or emphasized. Strategies such as reframing a task with different language, deemphasizing the salience of the stereotyped group membership, and providing role models can help to counteract stereotype threat.

Include diversity and disabilities statements in your syllabus. Such statements communicate a commitment to diversity and

inclusion from the beginning of the semester. They also provide an opportunity to set ground rules or a code of conduct for respectful and appropriate behavior. See Appendix A for a tool that can help you evaluate your syllabus as well as your course design.

Reflect on your own background and experiences. Consider how your own background and cultural influences might affect how you have designed your course. Does the material provide an accurate representation of various perspectives?

TEACHING INCLUSIVELY

Some teaching strategies are particularly effective in engaging and supporting learning in students from a wide range of backgrounds. Methods that encourage active and collaborative learning improve student engagement and learning for all students, and close the achievement gap between underrepresented and majority students. The overall effectiveness of these methods has been borne out in research nationally, most recently by a major meta-analysis of hundreds of studies in the Proceedings of the National Academy of Sciences.

Strategies such as cooperative small group learning, problem-based learning and increased course structure (e.g., guided-reading questions, preparatory homework, and in-class activities) have proved especially helpful to minority students and first-generation students. These methods are at the core of current course redesign efforts to include more student-centered teaching. Similarly, peer-led supplemental discussions or workshops enhance learning for all, with especially significant benefits for minority or underrepresented student groups.

These approaches shrink large classes to smaller groups in the same space, reduce academic isolation and encourage a sense of community. They also enhance critical thinking, improve student preparation and accountability, and transform students into active learners. They also employ universal design (see box on page 14), a strategy that increases access and support for particular groups of students but that benefits all learners.

See the box at right for other approaches in and out of the classroom that improve engagement and success in diverse learners. CTE's website provides more information about meeting the needs of diverse learners (cte.ku.edu/resources-inclusive-teaching), including creating an inclusive climate, leading difficult discussions, and examples of syllabus language for inclusivity. See Appendix A for a DEI self-assessment tool.

IMPROVING ENGAGEMENT AND SUCCESS FOR DIVERSE LEARNERS

Emphasize real-world applications of course material.

Ask open-ended problems and assignments that have many "correct" answers; questions that require consensus of group or contributions of everyone in a group to address.

Increase transparency in courses, such as the use of rubrics for grading. Rubrics improve grading efficiency and consistency, and they also demystify what it takes to succeed on an assignment. Students from underrepresented groups who do not have access to insider academic knowledge can particularly benefit from additional clarity and transparency.

Continually assess student outcomes. Use formal (e.g., student performance, student feedback) and informal (e.g., in-class engagement, participation) evidence to guide your teaching. Are the strategies that you are using promoting broad student achievement of the skills and concepts you hope they will take away from your course? Are your methods engaging students from a wide range of backgrounds? When student outcomes fall short of your expectations or wishes, look for new interventions to address those challenges.

REARRANGE THE CHAIRS TO IMPROVE LEARNING

Classroom seating sends clear signals to students.

Most rooms have neat, even rows of individual desks or seats that face toward the front of the room. The message: The instructor will lecture and students should sit, wait and listen.

I want students involved in their learning, though. To encourage that, I rearrange the seating. Creating small clusters or a wide circle of chairs allows students to see one another and encourages interaction. Arranging tables in a rectangle or U shape does, too. These formats also remove the emphasis from the instructor and create a structure that encourages shared learning.

You can't rearrange every room, of course—lecture halls are inflexible by design—but when you can, you should. Moving furniture reorients a room, and it might also reorient students' thinking about your class.

—Doug Ward

ENGAGING STUDENTS

USING CLASS TIME WELL

Your teaching will be most effective if the assignments you give are related and similar to the exams and assessments you give throughout the semester. In a similar way, activities that students engage in (both during class time and between class meetings) should be closely related to how students will be evaluated. In general, there will be more learning if students' in-class activities are most similar to the activities you want them to show you as examples of deep understanding and rich knowledge. There is a place for sharing information in class, but optimal teaching practice is not simply repeating orally what's written in a textbook.

One of the nation's leading researchers on higher education practice and theory is John Bransford (1998). He and a colleague wrote a powerful article describing the best uses of lecturing in higher education, noting there is a "time for telling" students what we know and how we know it. Their research suggests that lectures are effective tools for learning when the audience is very familiar with the topic being discussed. Such listeners are able to process arguments and examples, and they can evaluate them and re-work them in real time. In contrast, they found that novices getting their first exposure to material spend most of their energy during a lecture trying to recognize what's being said as they attempt to record the content. They're unlikely to be able to evaluate or challenge what they hear, or engage in critical analysis or synthesis that's so often the goal of higher education.

As a practical matter then, how can college teachers take best advantage of the efficiency and insight characteristic of a good lecture, when most often the audience is made up of novices in our fields? This is an important challenge for all college teachers, and developing the optimal use of class time is not an easy matter. Any course should include some time that allows and requires students to discuss, analyze, argue or even write about the day's topics. These activities will be aligned with the performances that are required of students on assignments and tests, and they will constitute the backbone of the learning activities in a course. The insights and examples provided in lectures by the teacher are woven around those activities to provide context, to give additional examples of professional thinking and analysis, and to stretch students' horizons on the topic. In the end, the period of an optimal class meeting will likely be broken into several segments, each with its specific contribution to students' learning. The variety itself is even an asset, as all human beings have limits to their attention span, and mixing up the activities will sustain better engagement.

CONTEXTUALIZING MATERIAL

Using existing knowledge to learn something new helps make material accessible. As McKeachie & Svinicki (2010) state, relevant knowledge strengthens new learning by generating meaningful connections to new information. Learners typically use prior knowledge by creating either direct relations, in which they relate what's known to what they're trying to learn, such as comparing and contrasting causes of two wars; or analogical relations, in which they use analogies to relate familiar and new concepts that share some key characteristics but are different in other ways, such as using a post office to explain aspects of computer storage.

Davis (2009) shares additional strategies for contextualizing new information:

Allow for the fact that different students learn, think and process information in different ways. Students vary in how they learn and how long they take to learn, and they don't make uniform progress.

Let students know what they are expected to learn. Emphasize key course concepts and important points in class sessions.

Give students a framework within which to fit new facts. Use outlines, study questions or study guides to provide a conceptual framework or structure for concepts.

Present material in ways meaningful to students. Students are more likely to understand and remember new material if it's already relevant, meaningful or important to them.

Limit the amount of information you present. Students can absorb only three or four new points in a single presentation.

Stress concepts, not facts. Too many details overwhelm students; broad concepts are more meaningful and more easily understood and remembered.

DEVELOPING POSITIVE CLASSROOM INTERACTIONS

McKeachie & Svinicki (2011) suggest several ways to encourage students to be active in the classroom. Create an expectation of participation early in the semester by defining various facets of the course and explaining why participation is valuable. Understand that boredom, lack of knowledge, passivity, cultural norms, and above all fear of being embarrassed may keep a student from talking in class. To reduce that fear, use small groups and help students get to know each other. Ask questions that have no wrong answers to help students get used to participating. Learn students'

MAKING MATERIAL CLEAR

One of the biggest challenges I face as a teacher is how to make material clear and accessible to students. An approach I've found particularly successful is to start with fundamentals at the beginning of the class and at the beginning of new sections of material. I very briefly review key vocabulary and basic concepts, and often add a little history or a story about one of the ideas. Organizational communication lends itself quite well to this, but all our disciplines have famous accounts or famous applications.

I present reviews as a way to be sure that everyone starts from the same point. The history, which is frequently new information, adds a bit of spice. This scaffolding approach reduces any perceived threat to both those who know the material and those who don't.

—Tracy Russo

LEARNING STUDENTS' NAMES

Learning students' names is a good way to develop positive classroom interactions. If you have trouble remembering names, try these ideas:

Have students give their name before they speak in class.

Memorize a row of students each class period.

Have students make name plates with 5" x 8" index cards. Ask students to fold the cards in half and write their names on them in large print. Collect the name plates and hand them out at the start of class (also a way to take attendance without using extra class time).

Use students' names as often as possible.

If you're teaching a large class, divide the entire group into smaller groups. Give each group a short project, and learn the names of everyone in one group, then in another group for the next project.

Ask students to provide index cards with their name, a photo and an interesting fact about themselves. Use these to study names between class meetings.

Be honest with students and patient with yourself. Students have to remember the names of only a few teachers; you have names of many students to learn. Even if you call a student by the wrong name, the class will appreciate your effort to acknowledge them on a personal level.

names, and call on them by name. Ask students to write short answers to questions. A shy person will likely respond to being asked, "What did you write?" Get to know students who don't participate, so you'll find any special knowledge they may have; ask them to contribute it at appropriate times.

In some scenarios, students may assume negative roles. If we deal successfully with these situations, we can preserve a positive classroom environment. If a student feels trapped and assumes a *Prisoner* role, be clear about the course's benefits. Ask the class to brainstorm 12 reasons why they shouldn't be there. Review this list with them, and tell them you can see why they may not want to be there. Then, promise you'll do your best to make the course worthwhile and ask students to meet you halfway. Sometimes asking a student to help (e.g., passing out handouts), or talking one-on-one, will bring the student around.

If a student is terribly quiet and assumes the role of *Introvert*, use small group projects or group-generated questioning. This will give shy students a chance to succeed and may make them more willing to participate in a large group. Most importantly, allow students to participate at their comfort level; forcing introverted students into an uncomfortable situation will probably cause them to retreat further.

Finally, if a student is aggressive and assumes a *Domineering* role, establish ground rules that discourage this behavior. Use small groups, and rotate group membership and leadership in the groups. Be proactive; if you can tell early on that someone will be a monopolizer, speak privately with the student. Say you've noticed that others aren't participating much and ask for help drawing them out. This gives the student a positive role to play, rather than a negative one.

If a few students still refuse to participate, after you've tried to engage them, keep in mind that many of your students are engaged. "If some students opt out, don't let it bother you—it's their loss, not yours" (Felder & Brent 2003). Focus on the fact that most students are engaged, and move forward.

TEACHING INDUCTIVELY

Inductive teaching, also known as inquiry or discovery teaching, centers around the idea that knowledge is dependent on an individual's experience and interaction with material. In inductive teaching, the instructor provides students with problems to solve or data to interpret, and students eventually recognize the need for facts and skills, which the instructor is then able to provide (Prince & Felder 2007). As a result of this method, students find patterns and applications, explore and extend material, and make

connections from the instructor's examples, thus inductively learning a concept that these examples indicate. This is opposite of deductive teaching, in which a teacher defines a concept and then exposes the class to examples of it.

Structuring your class so that students learn inductively is outlined in *Teaching for Understanding* (Wiske 1998). In this framework, the role of the teacher is to direct students' attention and analysis through focused, often ongoing assignments. These assignments should attempt to increase the "uncoverage" of a subject, which requires that students receive "lessons that enable them to experience directly the inquiries, arguments, applications and points of view underneath the facts and opinions they learn if they are to understand them. Students have to *do* the subject, not just learn its results" (Wiggins & McTighe 1998).

This manner of teaching is beneficial for instructors whose course goals include the statement, "I want my students to be able to think like a _____ (scientist, mathematician, writer, etc.)." Wiske recommends shaping assignments such that they increase in complexity across the semester, as well as move from group projects to independent learning tasks. Learning occurs through observation and guided performances, and assessment of students' increasingly honed reasoning skills occurs through on-going assignments. A culminating performance is often used at the end of a course or unit, which requires independent application of inductive thinking, synthesis, and a demonstration of understanding that extends beyond the learning that was attained from group work.

Four steps should be followed when teaching inductively:

1. Provide examples—From these, encourage students to discover applications and patterns.
2. Explore and extend—Ask students to consider deeper and broader facets of the class material.
3. Make connections—Have students describe how the material is interrelated, then ask them to describe a concept based on it.
4. Offer a conceptual scheme—After students have tried to construct their analyses, offer your own conception that organizes and connects material.

Prince and Felder suggest that instructors considering inductive teaching ask themselves a few questions to make sure this method of teaching is right for the class they are teaching. They should ask if their course objectives ask students to think at a high cognitive level, if they have any experience using inductive teaching methods, if they are already tenured or on a tenure track, and if the resources needed for inductive teaching are available to them.

TYPES OF INDUCTIVE TEACHING

Prince and Felder (2007) outline six main types of inductive teaching:

Inquiry-based learning—Students are presented with a challenge and accomplish the desired learning in the process of responding to that challenge.

Discovery learning—Students are presented with a challenge and are left to work out the solution on their own, with little or no direction from the instructor, who simply provides feedback on students' efforts.

Problem-based learning—Students are provided with an ill-structured, open-ended real world problem that they must define more precisely, determine what they need to know to solve the problem and how to proceed. Students usually work in teams.

Project-based learning and hybrid methods—Students are assigned to produce something, such as a product design, computer code or experiment.

Case-based teaching—Students study cases they are likely to encounter in professional practice and are asked to reexamine preconceptions based on those cases.

Just-in-time teaching—Students respond electronically to questions about material before the class and the instructor modifies classroom lectures and activities to address misconceptions students may have about the material.

JIGSAW LEARNING

With jigsaw learning, each student learns a subset of a larger concept, then teaches it to peers. When all students share what they've learned, they develop a coherent body of knowledge.

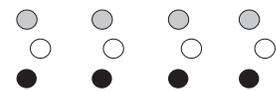
1. Choose material that can be broken into parts. It shouldn't matter if one segment is presented before others. Examples include parts of an experiment, a list of definitions, or short readings.
2. Count the number of learning segments and number of students. Group students based on the number of segments and ask each group to read, discuss and learn one segment.

Study Groups



3. After the study period, form jigsaw groups. These groups should have a representative of each study group.

Learning Groups



4. Ask jigsaw group members to teach each other what they learned.
5. Reconvene the full class for review and remaining questions to ensure accurate understanding.

ACTIVE LEARNING

Active learning involves implementing “learning experiences in which the students are thinking about the subject matter” (McKeachie & Svinicki 2011). It's based on the premise that students must do more than just listen to fully comprehend new information: They must read, write, discuss and solve problems. By using active learning, you'll increase your students' learning.

Reading

One active learning method is The Treasure Hunt (Magnan 1990). It's based on the premise that if you've assigned a reading, there must be something valuable in it. Choose several pages or sections, then ask students to find the most important point, idea or argument and write it down, along with a sentence or two justifying their selection. If you choose assigned passages well, you can increase understanding and participation immediately.

Writing

John Bean (2011) describes three ways to use writing for active learning during a class:

1. At the beginning of class to probe a subject: Ask students to write short answers to a question that reviews previous material or stimulates interest in what's coming.
2. During class to refocus a lagging discussion or cool off a heated one: When students run out of things to say, or if a discussion gets too hot, ask students to write for a few minutes.
3. At the end of class to sum up a lecture or discussion: Give students a few minutes to sum up the day's lecture or discussion and prepare questions to ask at the start of the next class.

Problem-solving

Some college teachers punctuate classes with opportunities for students to solve a problem related to class material. The instructor will pose a question that should be amenable to a solution, given what has been covered to that point; students are invited to work for a minute or two with peers to come up with an answer.

This technique is often called Think-Pair-Share. Many instructors now use classroom response systems (aka “clickers”) to allow everyone in the room to vote for an answer. Eric Mazur (1997) is well known for demonstrating that his students often were not getting a conceptual understanding of physics from his lectures; only when he initiated paired discussions and had students report

answers did their work improve. Many practitioners believe that discussion between students produces the richest learning, and a lecture surrounding discussions serves more as a summary than a driver of learning. With or without clickers, this method shows improved learning over uninterrupted lecturing.

DISCUSSIONS

Like other forms of active learning, class discussions provide variety within the flow of a class. They can be used as a starting point if you're teaching inductively; e.g., students lay out dimensions of a social setting or problem and try to identify solutions. Once the discussion has set the stage, the presentation brings academic knowledge or understanding to bear on the setting students identified. An alternative would be to discuss after a presentation, inviting students to discover ways the material aids in resolution.

Leading discussions requires us to maintain a balance between using our voices and encouraging students to use theirs. Consider these ideas for sparking discussions:

Invite students to ask questions related to a reading assignment, then frame the discussion around those questions.

Have students write their answers to a sentence completion exercise, then share their ideas: What most struck me about the reading was ... A question I'd like to ask the author is ... The idea I disagree with most strongly is ... The part of the lecture or reading that made the most sense to me was ...

Ask students to respond to a contentious statement or an illustrative quote.

Have students recall an experience in their lives that somehow connects with the topic.

To increase the number of responses you get, try this from John Woodcock (in Stocking 1998): Break up your presentation, giving students two or three minutes to discuss a question with the person sitting next to him or her. Rather than reporting on their own ideas, ask students to report on their discussion partner's good ideas. When he tried this, Woodcock found "Three times as many hands went up, and the reports had a consistently better energy." This can work with any size group in almost any situation.

One strategy that several KU faculty members have found useful is called the fishbowl, a discussion format in which part of the class forms a discussion circle and remaining students form a listening circle around the discussion group. During the class, students rotate through the groups (see right).

FISHBOWLS

Devise three questions for discussion and order them. In a class on ecology, e.g., questions may be: How is the environment being endangered? What steps can the government and private industry take to deal with the problem? What can we do personally? Ideally, questions would be interrelated, but that's not required.

Set up chairs in two concentric circles. Have students count off by 1, 2, and 3. Ask group 1 members to sit in the discussion-circle seats and groups 2 and 3 to sit in outer-circle seats.

Pose your first question. Allow up to ten minutes for discussion. Invite one student to facilitate or act as the facilitator yourself.

Invite group 2 to sit in the inner circle, replacing group 1, who now sits in the outer circle. Ask group 2 if they'd like to comment briefly about the first discussion, then ask the second question.

Follow the same procedure with group 3.

After the questions have been discussed, reconvene the class as a whole group. Ask for their reflections about the entire discussion.

If you can't use circles, have a rotating panel discussion instead. One-third of the class becomes a panel for each question. Panelists can sit in front of the classroom facing the rest of the class.

IF NO ONE IS TALKING ...

If discussions aren't going well because no one is talking, consider the following:

Did students complete preparatory assignments?

Have I modeled public critique of my ideas?

Is the discussion focused on an open-ended question of sufficient complexity and ambiguity?

Have I avoided answering the question I posed, either implicitly or explicitly?

Have I linked the topic to a critical event in students' previous experiences?

Is my talking preventing students from contributing, or is discussion faltering because I don't speak enough?

What am I doing to build continuity and a sense of collaborative engagement?

As a variant on this, invite a trusted friend or colleague to sit in during a planned discussion time in class. Your colleague may be able to give you additional answers to the same set of questions after watching you interact with the class. If the class is very small, the addition of a stranger may change the dynamics, but given sufficient time, things usually revert to normal, and you can learn from your friend's answers.

In a large group discussion, once it's moving, keep it going by asking for more evidence or clarification. Ask "How?" or "Why?" Pose questions that link or extend the discussion, address cause and effect, and ask for synthesis or summary of the material. Other ways to encourage discussion are by affirming student comments and being silent when appropriate. McKeachie & Svinicki (2011) note many lecturers check student understanding by asking if there are any questions, waiting three to five seconds, and after receiving no response conclude everyone understands. But this is often not the case; students just haven't had enough time to process material. Give students some "hang time" to think.

When it's time to end a discussion, conclude with a summary so that students know what important points were covered. A summative statement also gives you the opportunity to fill in points that weren't covered and to praise the class for their responses.

Some instructors feel their classes have become too big for discussion as a single group. In that case, many activities can be done in small groups organized within a class (large or small), in which discussions are held among a handful of students, often directed toward a particular aim or focused group product. Another approach grows from research on memory that suggests that the best understanding is one that's connected to already existing knowledge. If course ideas are used in the analysis of topics, situations or questions that are already part of students' interest, there will be more engagement and more long-lasting effects of the thinking and talking that are done. This last strategy is a form of student-centered teaching. The instructor starts by asking what questions or social contexts are most important to students, so that teaching is embedded in those contexts, not just applied as an afterthought.

QUESTIONS

Question types

Different questions have different purposes. Understanding the types and their uses can help you structure and lead discussions.

Discussion starters get students talking: "Why did the company file for bankruptcy?" "What issues does this case pose?"

Probing and challenging questions ask students to examine areas of a problem or situation: "What did the data suggest?" "Did the president respond appropriately to the situation?"

Connecting questions ask students to make links between old and new information: "What similarities does this case share with a previous one?" "How does this outcome support the theory found in the textbook?"

Predictive and hypothetical questions help students apply what they learn to other situations: “What will happen if we boil the solution?” “Imagine that a primary value for this society was competition—how would that change life in the village?”

Analytical and evaluative questions help students make informed judgments about the subject matter: “Can you rank the designs based on how aesthetically appealing they are?” “Which decision by the president was most effective?”

Summary questions help students articulate key points of a discussion or lesson: “What are the main points of this case so far?” “Can you summarize decisions the committee made their first year?” (adapted from Meyers and Jones 1993).

Questioning techniques

Bob Powers (1992) identifies ways instructors can ask and respond to questions effectively:

Use open questions to solicit responses; use closed questions to end them (see right).

Provide correct, clear answers to students’ questions.

If you are unable to answer a question, find the answer and report it back to students.

Answer questions nondefensively.

Occasionally refer questions back to students.

Sometimes guide students to reach answers themselves.

Remember: Don’t ask a question, then answer it yourself.

CREATING TEAMS AND GROUPS

Having students work in groups provides several benefits for both students and instructors, especially in large classes.

Group work allows instructors to pose challenging questions that groups solve collectively. It promotes interaction among students and essentially turns large classes into smaller sections in the same room. This approach has proved especially beneficial to women, first-generation students and underrepresented minority students. Using group work effectively requires more than just putting students together randomly. Matthew Ohland, a Purdue professor who led development of a team creation tool called CATME

CLOSED QUESTIONS

1. Do you understand?
2. Do you agree?
3. Is there anything else you want to know?
4. Any questions?
5. Will you remember this?
6. Did it help you?

OPEN QUESTIONS

1. What’s your understanding?
2. What do you agree to?
3. What else would you like to know?
4. What questions do you have?
5. What will you remember about this?
6. What was helpful about it?

KEYS TO EFFECTIVE GROUP WORK

Create groups (five to seven people each) that are diverse in terms of gender, learning style, interpersonal abilities, class grades, nationality, work experience and type of degree they are pursuing. Also, combine people in groups who don't have previous knowledge of each other, and who have complementary schedules for meeting outside of class.

Select group work that requires team members to collaborate and that allows as much time for group interaction as possible in order to encourage valuable interactions.

Allow the groups to determine individuals' roles and the goals of their teamwork. Have the roles of the individuals in the group rotate throughout the project.

Establish classroom behaviors that encourage group interactions, such as the sharing of information between teams and student cooperation during the learning process.

Include evaluations that measure teamwork, such as tardiness, preparation for classes and grades on group work.

Before assigning complex projects, engage the class in ice-breaker and bonding exercises, as well as assigning projects that increase in complexity.

—Dan Spencer

(see info.catme.org) and has studied team dynamics for more than two decades, uses an illustration of an iceberg to represent visible and invisible characteristics of identity. Gender, race, age, physical attributes and language are among those most noticeable to others. Below the surface are things like thought processes, sexual orientation, life experience, and perspectives. Awareness of those characteristics helps team members recognize the facets of diversity and the complexity of individual and team interaction. A few components of effective teams stand out, though, Ohland says.

Schedule. If you want students to work together outside class, their schedules must be similar enough that they can meet. “Of all the things you can choose about team formation, schedule is by far the most important,” Ohland says. If students do all the work in class, the schedule component loses its importance, though.

“Otherness.” This is often race and gender, but it can be any characteristic that makes someone in a group feel isolated. For instance, putting one woman on a team of men generally makes it difficult for the woman to have her voice heard, Ohland said. Putting a black student on a team in which everyone else is white can have the same effect, as can putting an international student on a team of American students.

Team management. Thoughtful creation of teams is important, Ohland says, but team management is even more important. Instructors must monitor a team's interpersonal dynamics as well as the quality of its work. Is someone feeling excluded or undervalued? Is one person dominating? Are a few people doing most of the work? Is a team member creating barriers to getting work done? Whatever the problem, Ohland said, an instructor must act quickly. Sometimes that means pulling a team member aside and providing a blunt assessment. Sometimes it means having a conversation with the full team about the best ways to work together.

The ins and outs of teams

Ohland says it is important to prepare students to work in teams. His students go through several steps to do that, including videos, in-class discussions about how good teams work, guidelines students need to follow, and ways to overcome problems. They also agree to follow a Code of Cooperation, which stresses communication, cooperation, responsibility, efficiency and creativity.

He also explains to students how a student-centered class works, how that approach helps them learn, and what they need to do to make it successful. In a student-centered class, an instructor guides rather than leads the learning process, and students help guide learning, apply concepts rather than just hear about them, reflect on their work and provide feedback to peers (Understanding the U.S. Classroom Learning Environment, 2009). Students

must also understand the system they will use to rate peers, Ohland says, and he goes over that system in class. It includes measures on how students are contributing to a team, how they are interacting with teammates, how each member works to keep the team on track, how to evaluate the work quality of teammates, and how to evaluate teammates' knowledge, skills and abilities.

Among Ohland's other advice about teams:

Don't force differentiation in evaluation scores. Forcing students to give each team member a different score creates false differentiations that frustrate students and lead to less-useful evaluations.

Learn what ratings mean. If team members give one another perfect scores, it could mean they are working well and want to be left alone. It could mean that students didn't take time to evaluate properly, or it could mean that students felt uncomfortable ranking peers. In that last scenario, Ohland talks with teams and explains why it is important to provide meaningful feedback. If they don't, individuals lack opportunities to improve and the team lacks the opportunity to grow. "It gets that discussion about why are we doing this and why it's important not to just say everybody's perfect," Ohland said.

Keep the same teams (usually). Changing teams during a semester can create problems, because high-functioning teams don't want to disband and teams that are not making progress need more time to work through kinks. Only dysfunctional teams want to change. The best approach is to find those dysfunctional teams and help them get on track. One exception to that guideline is when learning to form teams effectively is part of a class's goals. In that case, an instructor should form teams more than once so that students get practice.

Evaluate teams frequently. Ohland recommends having peer evaluations every two weeks. Research shows that evaluations should coincide with a "major deliverable." That makes students accountable and increases the stakes of evaluations so that students take them seriously.

Create the right team size. In some cases, that may mean three or four. In others, six, eight or more. It also depends on the rooms' layout. For instance, a team of three in a lecture hall is ideal because students can have easy conversations. A group of four in the same setting will exclude one member of the team. "Team size depends on what you are asking students to do," Ohland says. The critical thing about team size is that you need enough people on a team to get the work done that you are asking them to do—the quantity of work. You also need enough people on a team to have all the skills necessary to do the work represented."

LISTENING TEAMS

Divide the class into four teams, then give the team members different role assignments:

Questioners—This group will ask at least two questions about the material.

Agreers—This group will tell which points they agreed with, or found helpful, and explain why.

Nay-sayers—This group will comment on what points they disagreed with, or did not find helpful, and explain why.

Example givers—This group will give specific examples or applications of the material.

Present your material. After you're done, give the teams a few minutes to complete their assignments.

One reason listening teams are successful is that each student feels as though his or her contribution is important and sees that contributions are rewarded. Structuring group work with this in mind can increase the quality of student participation and the effectiveness of the group exercise.

FIVE WAYS TO IMPROVE LECTURES

1. Fit your lecture to your audience by gathering information about your students beforehand.
2. Prepare an organized outline with your major points, and decide which minor points you will include. Present this outline at the beginning of class.
3. Present multiple sides to an issue, to make your students aware of the various viewpoints or to help strengthen an argument you are making.
4. Repeat the points you are making in two or three different ways, and stress the points you deem most important.
5. Look at your students, include discussions, and solicit questions.

LECTURING

The appropriateness of using a lecture format depends on your course goals, and as an instructor you should evaluate course aims before determining whether lectures will most effectively achieve your goals.

The strengths of the lecture are that it “can communicate the intrinsic interest of the subject matter, and it can present the newest developments” (Cashin 1985). Another strength of lectures is their ability to restructure information into a unique manner, relevant to course directions. Lectures also provide a large amount of material to many students at the same time. Finally, they can be used as examples for how professionals approach an intellectual question.

Negative aspects of lecturing include lack of feedback to students, a presumption that all students learn material at the same pace, and the problem that poorly-designed lectures are not well suited for higher levels of thinking, such as synthesis and application. To overcome these hurdles, Cashin offers several recommendations for improving lectures (see left).

Another way to enhance your lectures is by effectively using a whiteboard or visual presenter. Students’ notes are often an exact copy of what appeared on the board or presenter, with very few additional points or connections. Effective board work highlights and emphasizes the organization required in problem-solving or the evolution of an argument. Remember that even the best students will occasionally lose the thread of a lesson or forget the original objective of a discussion. The whiteboard is their major, and often their only, resource for reentering the lesson. Therefore, be organized, use headings, write clearly, and when solving problems on the board, show each step in a logical sequence. If at the end of a lecture, you can stand back, look at the board, and reconstruct the lecture using what is written, then you are developing good board skills.

Carefully designed lectures can serve as a mechanism for encouraging higher levels of thinking in your students. In *What’s the Use of Lectures?*, Bligh (2000) addresses how to promote thought using lectures. He recommends the following: Make sure your lectures encourage application and discovery (see *Teaching Inductively*, p. 18), as opposed to only serving as a platform for the presentation of material. In this way, students learn how to use the information provided to analyze novel situations. Next, ask questions throughout the lecture, focusing on questions that promote critical thinking, not rote memorization (see *Discussions*, p. 21). To assist student thought, provide a visual display of the presented material, include handouts so students can focus on thought rather than

note taking, require students to pre-read material so that lecture isn't their first exposure to it (see *Facilitating Learning Outside of Class*, p. 34), and watch your lecture speed. Bligh found that students performed best with thought-provoking questions when lecture material was presented slowly, as compared to when the lecture was presented at a faster pace; a slower pace allows students time to think about material. For more information related to promoting critical thinking, see *Active Learning* (p. 20).

FINDING A GOOD COMBINATION

One example of a well-balanced course comes from the work of history professor Lendol Calder at Augustana College. He was teaching a survey course in American history to beginning college students—exactly the kind of course typically taught in pure lecture format. His goal was to have students begin to think like an historian, to understand how history is constructed by historians, and to analyze historical artifacts using an historian's tools. Calder's solution is not for everyone, but it offers one example of how to combine the insights of people like Bransford (1998) and Mazur (1997) within the practicalities of teaching a course.

There were three class meetings each week. For the first class, students did some background reading, then watched a film or other visual material that set the context for the week's topic. In class Monday, he gave each person a document, photograph or other historical artifact, and the assignment was to write an historical analysis of it for class on Wednesday. That writing was required; without it a student wasn't admitted to class. Students spent Wednesday sharing their writing, arguing their analyses, and trying to reach conclusions about the meaning of the document. On Friday, Calder gave a lecture in which he offered his analysis of the artifact and reasons for his conclusions and observations. During the lecture, his students listened as he described his version of the very analysis the students had undertaken. It wasn't first exposure, they knew a lot about what he was discussing, and they already had an opinion on the subject. For those students, lecture was highly interactive, as they privately questioned, challenged and appreciated what Calder was saying.

Calder found that his students did very well on exams and other assessments, much better than his students did when he lectured only. Lectures were of enormous value to his students, and they were eager to hear them since they were engaged in the same inquiry he was. Still, this is only one way of organizing a class. There are other forms of engaging students and mixing lecture with components of active learning and students' engagement.

PROMOTING CRITICAL THINKING WITH LECTURES

Bligh (2000) recommends the following to promote students' critical thinking during lectures:

Be sure your lectures encourage application and discovery of information and material.

Ask questions throughout the lecture. Focus on questions that promote thinking, not rote memorization.

To facilitate critical thinking, provide a visual display of lecture material, provide handouts so students can focus on thought rather than note taking, require students to pre-read material so that lecture isn't their first exposure to it, and watch your lecture speed.

HELPING STUDENTS TAKE BETTER NOTES IN CLASS

Successful teaching requires helping students understand the best methods to use to get the most out of being in class. One way to help students is to direct their note taking so it's more effective. Here are possible answers to students' questions about note taking, based on Dembo's work:

Should I recopy notes after class?
No; recopying requires little thinking. A better use of time is writing questions and answers about material in your notes.

What should I do if my teacher talks so fast I can't write everything down? Don't try to write down everything word for word. Instead, paraphrase, listen for the most important things the instructor says, and leave blank spaces to show you've missed material you thought was important. Check with classmates to see if they got the material down.

Should I listen and not write when the instructor is discussing something I don't understand?
No, the best thing to do is to keep taking notes, but mark in your notes that you don't really understand the material. If you don't ask about it in class, after you review your notes see if another student, a TA or the instructor can explain it again.

How do I deal with an instructor who often wanders off topic? See if your textbook provides a logical structure for the material. Working with other students can help in situations like this, too. Form a small study group and together organize notes from class (Weimer 2003).

MOTIVATING STUDENTS TO LEARN

Generating learning among students is neither magical nor mysterious; students learn best when they spend time reading, thinking, solving problems, writing, discussing, and using ideas in concrete settings or to generate products. Despite lots of research in cognitive science, there are no shortcuts to learning, so somehow teachers and students need to find a way to make those learning activities happen. All of us, students and teachers alike, have many different ways that we can spend our time; we have a shared interest in arranging the academic world so that we put enough energy and time into the courses we co-inhabit.

There's a rich and interesting debate among academic psychologists about motivation, with ongoing dialogue about the relation between extrinsic motivators, like rewards, and activities that seem intrinsically motivated, i.e., they occur without external support or constraint. There's one general idea about motivation that receives a lot of support, regardless of a researcher's conceptual perspective. **People are most likely to engage in activities when they believe there's a reasonable chance of having a good experience.** Some argue that the probability of choosing an activity increases when there's a higher perceived likelihood of good things happening, so raising or lowering expectations of success would raise or lower their willingness to spend time on an activity—thus increasing or decreasing motivation.

In education, success is defined differently by different participants. For us as teachers, students' success includes a deep understanding of ideas, rich knowledge of the content of a field, and possibly an enhanced appreciation for and interest in the topic of our course. These are primarily intrinsically valuable results of a course, though there's certainly practical value in being well prepared for further study. For many or most of our students, success will likely be defined primarily in terms of your feedback to them on the quality of their work, typically grades. This is an extrinsic reason for learning, especially from our perspective, though some students come to appreciate and enjoy our fields as a result of their course work. Whichever version of success we refer to, students will give more time to a course in which they believe success is likely than to a course with a lower probability of a good result, either intrinsic or extrinsic.

While it would be nice to imagine that everyone who studies at KU is intrinsically motivated to know the intellectual world deeply and richly, we need to think strategically about motivation. Courses should be planned, both in-class and out-of-class, to maximize students' beliefs that good things result from their investment of time. If we want to capture their time from among many options, that's the model to adopt.

SUCCESSFULLY COMPLETING ASSIGNMENTS

Students will look for indications from you about their success in understanding course work, and perhaps in achieving good grades. To maintain their consistent participation in learning activities, you'll want to give frequent feedback, especially early in a course. The best way to make that feedback positive is to begin with assignments that you believe most students can do well. A sure way to produce discouraged learners is to create an assignment that only the best students can do. Researchers in teaching talk about "optimal challenge" in assignments, and that refers to work that is not trivial or mere rote application of procedural rules, but not so difficult that students have no idea how to begin. This is a difficult matter of judgment for you, made more difficult when courses have students with a wide range of background skill, but it's a very important part of your plan to motivate students, to capture their time and energy for your course.

Linked to optimal challenge is the notion of repeatable assignments. If each intellectual challenge you offer is only available once, then students will either pass or fail but not have a reason to revisit the work to learn it better. When assignments can be repeated (with alternate versions of context and particulars), students have reason to work again to refine their understanding. You do want students whose work wasn't acceptable to study again, and they'll be more likely to do that if you provide another alternative to get what they want, namely positive feedback from you on their performance. Making assignments repeatable also allows you to keep your grading standards higher, as you aren't forced to lower your criteria to allow students to pass.

Repeating work until it reaches a high criterion is how we function as researchers, and it's a good model for producing intellectual success. If you wish to get students to spend more time on your course, then you need to convince them that extra work will result in a successful experience for them.

ATTENDING CLASS

Many faculty members think it's very important for students to attend class, and they worry about low attendance, especially in larger classes. Typically faculty members attribute poor attendance to low student motivation, without asking about the reasons for that apparent disinterest among students. The Center for Teaching Excellence conducted a survey of KU students in Fall 1999, asking them about their decision to attend or to skip class meetings. The study examined the relationship between course characteristics, student characteristics, and the rationale of students for either attending class or not attending class on a daily basis. The study sought to answer these questions:

TEACHING THE WHOLE STUDENT

Students aren't just students. They are individuals with strengths and weaknesses, hopes and fears, worries and challenges. What happens in their lives outside class has an enormous impact on how they approach their academic work.

For instance, large percentages of students suffer from anxiety and depression, struggle with identity, or feel alienated from their peers. Many work 20 or more hours a week, and some are homeless or without adequate food.

Most instructors aren't counselors and shouldn't try to play that role in students' lives. By keeping their circumstances in mind, though, instructors can help students learn better and succeed academically. This approach is sometimes called teaching the whole student. Here are some tips on how to put that approach into practice.

Show your humanity. Get to know students individually. Who are they? Why are they in your class? What background experiences do they have? Help students understand who you are beyond your academic credentials.

Make yourself available. Indicate your availability for consultation outside of class to students by including contact information in syllabi; many students from marginalized groups assume they should not bother instructors.

Make use of campus resources. Refer students to campus offices that specialize in student services. Check the KU website for more information.

WHY STUDENTS DO OR DON'T ATTEND CLASS

In a study by the KU Center for Teaching Excellence, students reported the following reasons for attending class:

Personal values

Obtaining course content

Fulfilling grade requirements

Factors related to the teacher

Peer influence

Students' reasons for not attending class included:

Being sick

Participating in other school or non-school-related activities

Participating in leisure activities

Avoiding teacher- or class-related experiences

Having no incentive to attend

1. How do characteristics of students relate to their attendance behavior?
2. How do characteristics of the courses in which students are enrolled relate to their attendance behavior?
3. What reasons do students give for their day-to-day attendance decisions?
4. How do these reasons relate to the number of their absences?

The results of the study suggested that students were actually more *rational* than unmotivated. They were more likely to attend class if they believed that it mattered to the professor that they were there, or if being present at the class gave them an advantage over simply getting notes from the lecture or doing assigned readings. The professor's interest in attendance was inferred from two basic observations: whether class time involved any active participation by students, making the student's presence essential to the class plan and/or to learning; and if course policy required attendance and placed concrete value to it. Many students noted that there is complete overlap between course readings and lectures, so they believe either one or the other is adequate preparation for exams. While faculty members may believe they're helping students through content redundancy, in practice they're undermining students' motivation to either do readings or attend class.

If a teacher really wants students to attend class, then the class needs to provide a successful experience. That could be something concrete like points for attendance or an in-class assignment, or it could be a successful learning experience that prepares students for exams in ways that aren't available elsewhere. There certainly are classes in which lecture expands on readings and the teacher provides opportunities for discussion or questions, and students in those classes may not appreciate the importance of those opportunities. Pointing out the advantages of attendance to students will help, as will clear and frequent comments to students on the importance of attendance to you. In the end, the best way to motivate attendance is to make sure that active, engaging and unique experiences that aid course success are part of class time.

THE TENSION BETWEEN MOTIVATION AND GRADING

One of the best strategies for motivating students is to allow (and even encourage) them to repeat assignments until they achieve their own learning/grade goals. This increases their willingness to do extra work, and it also increases the skill level of students who complete the course. Everyone benefits when more students have greater skill upon course completion; they're better prepared for subsequent courses and they bring greater skill to their future work life.

The downside of repeatable assignments is that more students earn higher grades, resulting in less differentiation among students. Sometimes this is identified as grade inflation, but the general complaint is that it makes it harder to identify the very best students for many legitimate purposes.

It's very important for each instructor to think about this question by looking at the function of her/his course in a program or curriculum. Sometimes it's important to sort out the very best from the average students; in such a course it might not be advisable to compress achievement, even if it were at the high end. In other cases, however, especially in foundation courses in a field, the real goal is to have students learn basics so they can study advanced topics. It doesn't help anyone, for example, if people leave college unable to do algebra. We'd be willing to differentiate among graduates in some other way if we could be certain that every KU student is highly skilled in algebra. In deciding whether to use repeatable assignments as a motivational tool, each instructor should weigh the relative importance of differentiation and preparation for further study. These decisions may be made well through discussion within a program or department.

It's always useful to remember, however, that in our professional lives we never hear from a journal or from a granting agency that we have one try and one try only to get published or funded. The common experience we all have is one of a level of rejection, feedback, encouragement, and an invitation to work harder and do better. This seems to motivate us to do extraordinary amounts of hard work to achieve our goals. Perhaps we should remember that when we ask why our students sometimes seem unmotivated.

USING EDUCATIONAL TECHNOLOGY

Educational and classroom technology alone won't make you a better teacher. Educational technologies do offer an important means of creating and delivering course material, engaging students, checking learning, and providing feedback on assignments, though. Some tools can also save time and aggravation.

KU supports many types of educational and classroom technology, and before you bring in an outside tool, check the Information Technology website to see whether the University has a similar tool available. IT, the Center for Online and Distance Learning and CTE can also point you to tools that might help in particular situations. Just remember: Don't use digital tools in a class just because you think you should use technology. Rather, use them purposefully to solve problems, help students learn, make classes more engaging, and make class materials easier to access and understand.

To get you started, here are a few of the tools available at KU.

GETTING TECH HELP FOR YOUR CLASSES AT KU

The Center for Teaching Excellence, the Center for Online and Distance Learning, and Information Technology all provide ways to help you improve your teaching. Each office has different specialties, but all three frequently collaborate to help faculty members find the best solutions to teaching questions.

CTE

cte.ku.edu/
785-864-4199
cte@ku.edu

- Best practices and pedagogy
- Documentation of teaching
- Faculty community
- Innovative teaching
- New approaches
- Peer evaluation
- Assessment
- Intellectual exchange

CODL

codl.ku.edu/
785-864-1000
onlinelearning@ku.edu

- Online and hybrid courses
- Online course evaluations
- Exam proctoring
- Using Blackboard
- Creating videos

KU IT

technology.ku.edu/
785-864-2600
itedtech@ku.edu

- Support for Blackboard and other educational technology tools
- Media production support and equipment checkout
- Classroom technology support
- Technology instruction

COMMUNICATING WITH STUDENTS ELECTRONICALLY

Blackboard. Blackboard provides an easy way to email students in your classes. You can email the entire class or just individuals either through the email link on the left-hand column of Blackboard or through the Grade Center.

Email. Not all students use their KU email addresses. So make sure you tell students that you will be communicating with them by email and that they should check their email regularly. KU offers a way of forwarding KU email to other services like Gmail, so it's worth reminding students about that, too.

Skype for Business. This is KU's primary internal communications system, with options for calling (voice and video), instant messaging and engaging in online meetings.

Zoom. Zoom is a videoconferencing tool that allows up to 100 people to participate in an online meeting. Participants can join in an online chat during the session, share materials and even break into smaller groups for discussions.

Yammer. This is a social media tool offered through Office 365. You can use it to create groups for messaging and even message someone individually. It is an internal network, so messages won't reach beyond KU.

CREATING COURSE CONTENT

Blackboard. This is KU's learning management system for courses. Students rely on it for information about course information, course materials, scheduling, and especially grades. We recommend making your Blackboard course page available with at least basic information about the course, including expectations and an overview of assignments; a week-by-week schedule; a syllabus, rubrics and other important course documents; and your contact information. It is worth spending some time to set up assignments in a way that allows for easy grading with Blackboard's rubrics and feedback system. Blackboard has tools for creating online quizzes, discussions, blogs, wikis, and journals. It is also integrated with Kaltura, an internal video service much like YouTube.

Camtasia. This software allows you to create and edit videos, which you can share with students via Blackboard or Kaltura. You will have to buy it (the cost is around \$150), but video production services and staff are available from CODL and KU IT. Before buying Camtasia or similar software, you should visit with a media specialist about your course needs and how the free centrally provided services can be used.

Softchalk. This tool helps you create online modules that include quizzes, pop-up text, stylized pages and other interactive functions. Modules can be delivered to students in Blackboard or provide a format you can use in other online locations.

VoiceThread. VoiceThread allows many ways to engage students in video discussions outside of class. You can create a video presentation, have students create presentations, and have multiple contributors make comments in video, audio, and text formats. Many instructors have found it an effective way to provide online interaction among students and to check student understanding through oral presentation.

GETTING IN-CLASS FEEDBACK

iClickers. These are hand-held devices that allow students to respond to instructors' questions in class. They are most frequently used in large classes as a way to gauge students' understanding of concepts or ideas, and, because they tie in to Blackboard's grading system, to take attendance. They can be a good way to engage students, especially because students' aggregated responses are anonymous. That can help reluctant students participate.

To make the best use of clickers, though, you should create questions to which students are likely to disagree on an answer. Once a class poll is taken, you can display results on a screen and then ask students to talk in small groups about their answers. After the

discussions, ask the question again and see whether discussion changed any responses. If not, provide a mini-lecture or provide some additional prompts to generate discussion and help students think through their responses. The Carl Wieman Science Initiative offers a useful “Clicker Resource Guide,” which can be found here: cwsei.ubc.ca/resources/instructor_guidance.htm.

Color-coded cards. You don’t have to use technology to take a quick read of student understanding. Some faculty members prefer to use numbered, color-coded cards instead. Students hold up the cards when an instructor asks a question, getting much the same feedback as with iClickers. The downside is that the cards don’t provide automatic tallying of responses.

A NOTE ABOUT OUTSIDE TECHNOLOGY

There are thousands of digital tools you might use in your classes or to create online course materials. You may hear about new tools at conferences or from colleagues. You also may get solicitations from vendors. Many tools are good and may help your students. Keep a few things in mind before committing to one, though.

You must provide your own technical support. The company providing the tool may offer assistance online or by phone, but Information Technology at KU will not. If you are comfortable with that, use the tool. If you aren’t technologically savvy, though, or feel that you need campus support, you might rethink your plans.

Many companies don’t charge faculty members but do charge students. Companies will generally make a pitch that the tool costs less than a textbook, but not all students can afford the extra costs. If you think the extra expense will improve learning, go ahead. Always look for cheaper or no-cost alternatives, though, and then make sure you use the tools you ask students to buy.

Outside tools generally aren’t FERPA compliant. FERPA is the Family Educational Rights and Privacy Act, which sets guidelines about what student information universities may release and who can get access to it. All university-sanctioned tools are FERPA compliant, meaning they have met KU’s standards for privacy and security. Some outside tools may comply with the act, but most don’t. If you are in doubt, contact IT or CODL.

Let others know about the tools you use. Share your experiences with colleagues and with CTE, CODL and IT. The university frequently evaluates the digital tools KU supports, and knowing about faculty members’ experiences with new technology helps with planning and decision making.

FIND AND USE THE RIGHT TOOLS

Blackboard provides a consistent and familiar environment for online course material. It should generally be the starting point for your classes.

There are many other tools that allow you to create course content, communicate with students, and assess their learning, though. For instance, VoiceThread can provide an effective alternative to written discussion. Zoom provides a means of video conversations or online office hours. Yammer can provide a social media element for your course.

Softchalk, Respondus and Camtasia provide ways of creating online course material. OneNote, through a class notebook created on Blackboard, offers another way of sharing material and interacting with students.

Some instructors have found that tools like Slack (for discussion, instant messages and sharing of materials), Remind (for sending text reminders), and GroupMe (for group discussions) have greatly enhanced their classes. Keep in mind, though, that not all of these tools are supported by KU IT.

If you would like to explore different tools for your course, talk with one of the educational technologists at KU IT (itedtech@ku.edu or 785-864-2600).

QUESTIONS FOR CLOSE READING OF TEXTS

When you talk to your students about reading texts in your discipline, consider these questions:

What terms do I need to recognize?

What analytic tools am I using?

How do I recognize what parts of the text are statements of fact or observation, what parts are professional analysis, and what parts are statements of value or opinion?

How do I recognize what the main points of the reading are?

How do I decide what I need to remember closely and what is provided only as temporary context?

FACILITATING LEARNING OUTSIDE OF CLASS

There are two issues regarding reading in a course that faculty members frequently mention. One is helping students understand what they read for a course, and the other is the difficulty of getting students to even attempt the reading assigned for a given day. As noted earlier, class time is best spent when students are already familiar with material being presented or discussed, and active participation during class requires that students have undertaken the reading and gotten something from it. For various reasons, many educators see consistent course reading as one of the central issues in assuring quality higher education.

READING COLLEGE TEXTS

Many students believe that they already have a firm grasp on how to read when they get to college. Why then, are students often discouraged by their attempts to read college texts? Ann Cudd (2003) proposes that much of this frustration stems from the fact that they do not understand that the type of reading approach used should vary based on the type of text that's being read. "You don't read a novel the same way you read a philosophical essay or a mathematical proof or a poem. Students have to be helped to realize this and then to develop the new eyes they need to see the kinds of texts you assign them," she states.

Many instructors despair at students' reading skills, and they spend valuable energy complaining about prior education and standards for admission to college. Other faculty members recognize that achieving their instructional goals will require that they share with students what it means to read in their field, and these faculty members take some time to demonstrate close reading of work typically found in the course. To accomplish this, take a few minutes in class to read a passage aloud, one that students are looking at, as well. As you read, consider the questions at left when you talk about reading with your class.

There can also be homework assignments early in a course that have these meta-questions included in the task; students are not only answering important questions related to a topic, but they're also asked to identify how they read. That aspect of the assignment would also be given feedback, in a manner like the content portions. In general, when working with undergraduates, it's not safe to assume that they're all fully prepared to read professional text with the same eyes as you do; it's likely worth your time to make your way of reading an explicit part of what you teach.

Other ways to help students learn to read difficult texts come from Bean (2011); he suggests the strategies shown in the table on the following page.

Table I. Strategies to address reading problems

<u>Students' problem</u>	<u>Helping strategies</u>
Poor reading process	<ul style="list-style-type: none"> • Give tests or writing assignments on readings you don't cover in class. • Have students write in response to texts (reading logs, summary notebooks). • Require students to write and turn in for credit marginal notes on readings.
Failure to reconstruct arguments as they read	<ul style="list-style-type: none"> • Assign summaries of readings. • Have students make outlines, flowcharts or diagrams of articles. • Help students write "gist statements" on main points as reading progresses. • Go through a sample text with students, writing "what it says" and "what it does" statements for each paragraph.
Failure to assimilate the unfamiliar; resistance to uncomfortable or disorienting views	<ul style="list-style-type: none"> • Explain this phenomenon to students so that they can watch out for it; draw analogies to other times when students have had to assimilate unfamiliar views. • Contrast ordinary ways of looking at a subject and the author's surprising way. • Teach students to play the "believing and doubting game," so they can see a reader's double role of being simultaneously open to texts and skeptical of them.
Limited understanding of rhetorical context	<ul style="list-style-type: none"> • Create reading guides that include information about the author and context. • In lectures or reading guides, set the stage for readings, especially primary materials. • Train students to ask: Who is this author? To whom is he or she writing? What prompted this writing? What is the author's purpose?
Failure to interact with the text	<ul style="list-style-type: none"> • Use a response strategy—reading log, summary notebook, guided journal, marginal notes, reading guide.
Unfamiliarity with historical events, cultural codes	<ul style="list-style-type: none"> • Create reading guides explaining cultural codes, allusions, etc. • Show students the function of cultural codes by discussing background knowledge needed to understand cartoons or jokes.
Unfamiliar vocabulary	<ul style="list-style-type: none"> • Create reading guides defining technical terms or words used in unusual ways.
Difficulty with complex syntax	<ul style="list-style-type: none"> • Have students "translate" complex passages into their own words. • Have students rewrite very long sentences into several shorter ones.
Failure to adapt to different kinds of discourse	<ul style="list-style-type: none"> • Explain your own reading process: when you skim, when you read carefully. • Explain how your reading process varies with different genres of text: how to read a textbook versus a primary source, how to read a poem or scientific paper, etc.

DEVELOPING CRITICAL THINKING SKILLS THROUGH READING

Use a review as a preview: Review facts your students already know that relate to the reading. By connecting new information with already-learned concepts, students will be in a better position to understand and remember what they read.

Give them a bird's eye view: Discuss the topic covered in the reading in general terms, but avoid specifics. Students will think the reading is essential, not repetitive.

Work with the words: Explain essential vocabulary used in the readings.

Put questions in their heads: Ask a mix of general and specific questions that require students to find facts as well as analyze and interpret. Don't put questions in the order of the text, or students may just skim for words rather than read for meaning.

Put questions in their hands: Give them a guide to follow as they read. Make it explicit how you expect students to use what they're reading in ways that go beyond what's presented. Use open ended questions that ask for implications or applications of ideas found in the reading (Magnan 1990).

Robert Magnan (1990) is among many who believe that it's best to help students achieve critical reading skills to aid their analysis and evaluation of texts. It's better to help students benefit from the reading you assign than to grade them down when they don't succeed. In the box at left, he suggests ways to support students' critical thinking skills through reading.

READING ACCOUNTABILITY

Given that students are helped in knowing how to read difficult texts, there's still the question of ensuring that they actually carry out the assignment. To be fair, students often point out that in many classes they take, it makes little apparent difference to them whether they've done the reading or not. The instructor doesn't make them accountable for knowing what was in the reading, and class time is often spent listening to a lecture without interruption. Many professors, they also claim, simply repeat the content of the reading in their lectures, making it seem even less important to take time to read. Since there are few occasions that provide uses for reading, students presume that it can be done later at a time closer to an exam to obtain relevant information. The typical student is not sophisticated enough to recognize that even listening to a lecture would be a much improved experience if the general topic were already a familiar one, so they typically read before class only when the instructor makes it important.

The key to having prepared students in class is to make sure that doing the reading before class is directly relevant to the student's experience in class. One common way to make reading relevant is to ask students to use what they read in a low-stakes but accountable fashion. Many faculty members use brief quizzes on reading, sometimes for every class period, asking students mostly to report on facts or information found in a reading. This approach has a modest goal, to assure that students have located and looked at the reading. Such a quiz can be given online or in the first moments of class, and it can be graded as participation or for correct content. A slightly more productive version is related to one of the suggestions attributed earlier to Robert Magnan: Provide an open-ended prompt to students, asking them to discuss an idea, phenomenon or analysis from the reading, often in the context of something that students care about. If they can use something from the reading to relate to an issue or topic in their own lives, there's evidence that the reading was understood at some level, and was done in the first place. People often use Blackboard's threaded discussion feature for these assignments, leaving a record and allowing students to learn from each other.

Responding to open-ended writing in a low-stakes context can be important, as students will stop making entries in discussion boards when they discover that no one is reading them. To keep

up a meaningful dialogue requires time, so that option raises issues related to resources; for a brief discussion of time resources, consider the material in the box at right. In addition, if your class is large enough that you have GTA help, you should be explicit about their time. A typical GTA position is .50 FTE or 20 hours per week. That means your students' tuition has paid for 300 hours of that person's time over the semester. You can allocate those hours across many tasks, including giving feedback on low-stakes assignments, grading, discussion or lab time, meetings, and attending class (as appropriate). If you're finding it hard to give feedback on assignments in a large class, re-examine your priorities among the many tasks you give. Be certain that you're taking full advantage of the GTA's time, using it to enrich students' learning. When all the GTA time is used, then it's appropriate to limit additional assignments for students.

Another way to make pre-class reading important is to connect information from readings to class activities. During those portions of the class time that include active learning, make sure that the discussions required and/or the problems to be solved are connected with the reading material. It may be that students need to use something from their reading and something from the class time presentation to address a problem; only by being prepared will they be able to participate fully in the conversation that you've arranged. Unlike the quiz options, which can have points or other accountability attached to them, this approach presumes that students will prefer to be ready for in-class activities. Such a method will work well with students who claim they would read if it mattered to the professor, while it may be less effective with students who are indifferent to any outcome other than course points. For teachers who do not want to be constantly grading or giving out points, this is a good way to invite students to read regularly, and it does not take away time in class for giving quizzes. Evidence suggests that you want to make some portion of your class time interactive for students anyway, so making a connection with reading in those activities fits naturally with that plan.

In general, you should presume that most students are like the rest of the adult world; they have more things they want to do than there is time for. Students will make priority decisions about what activities get first attention, and you should think about how you move regular reading in your course toward the top of that list. Low-stakes requirements and/or direct use during class time are good ways to communicate that regular reading is essential in your class. Because effective use of lecture as a presentation method will remain a goal for many instructors, it would be a mistake to believe that simply listing reading assignments in your syllabus will be sufficient to generate a room of prepared learners.

ONLINE ASSIGNMENTS

Limit the number of online assignments to those you can read with the time you have available. Online discussions are best done in groups (called threaded discussions in Blackboard). Optimal group size is four to six, though larger can work. Visit each group's discussion once per assignment and make a single entry, commenting on the total discussion, perhaps with some reference to individual points. Typically this can be done in 15 minutes or less per group. Schedule only as many of these discussions as you can visit. If time allows, increase the frequency of discussion assignments or delve more deeply into individual postings.

Analyze your time resources. In a typical KU teaching assignment, you'll spend about 15 hours a week on the teaching portion of your job. The work isn't constant over the semester, so you may think of it as ~225 hours for the semester; roughly 110 hours per course. You'll spend ~45 of those hours in class, perhaps more for labs or studios. That leaves 65 hours to divide among grading, preparing new materials or class activities, and giving feedback on low-stakes assignments. These need not be distributed evenly every week, and you should literally build them into your calendar so you can be sure that time is available for each course. It may be better for students if you give them frequent feedback on their practice of intellectual work than if you use all your out of class time refining or reinventing class time; you need to balance these competing demands on your time.

MUDDIEST POINT

The muddiest point is a simple technique that's remarkably efficient; it provides a high return of information for a very low investment of time and energy.

Ask students to jot down a quick response to one question: What was the muddiest point in ____? In the blank, ask students to respond to a lecture, discussion, homework assignment or instructional method.

This technique helps you know what students find least clear or most confusing about a topic. You can use that feedback to discover which points are most difficult for students to learn and to guide them about which topics to focus on. At the same time, this technique requires students to quickly identify what they don't understand and articulate muddy points, which engages them in higher-order thinking.

OBTAINING STUDENT FEEDBACK

DURING THE SEMESTER

Teachers need continuous, accurate information about student learning. Asking students for their input and responding to it can reduce gaps between teaching and learning. Here are two techniques to help you assess and get feedback from your students during the semester.

The one-minute paper is a brief, anonymous feedback instrument you can use up to three or four times a semester at the end of a class. Ask these two questions: "What is the most important thing you learned today in this class?" and "What important question remains unanswered?" At the beginning of the following class, discuss the results with students. Let them know that you've read the papers, and respond to their feedback.

In each of your classes, establish a signal for students to use if they want to call a time-out. At that point, you stop talking. Why? Because they can't take notes fast enough. Because they have questions. Because they need a moment to consider a point. Maybe the best reason is to give them ownership in the class.

Think about it: When we read, we stop to read something a second time, to weigh a thought or to verify a detail. Time-outs encourage students and teachers to think about material, to interact, to integrate and to assimilate.

MIDTERM FEEDBACK

Many instructors find it useful to get feedback from students at mid-semester, rather than only at the end. This allows you to make mid-course corrections that can benefit both you and your students. For example, if your PowerPoint slides have too much text for students to read, finding this out by midterm gives you an opportunity to change your slide format.

If you decide to get midterm feedback, follow these principles:

1. Don't ask if you don't want to know. If you don't intend to make changes to a course or an assignment that students are having difficulty with, it's best to not ask for their input.
2. Let students know that you've read their comments and will respond to them as appropriate. Follow through and make changes that are feasible for that course. If students suggest changes that you can't make, explain why not.

CTE has several feedback forms that can be used as is or adapted to your specific situation. Contact us at cte@ku.edu.