The Essentials of College Instruction

ACUE’s Course in Effective Teaching Practices

A Comprehensive Bibliography
Dear colleagues,

When ACUE was formed and I was asked to chair its advisory board, there was one fundamental principle that my colleagues and I stressed: that our work be guided by the finest research and experience of the most respected scholars and practitioners in the learning and cognitive sciences. We stressed that this overriding maxim always be followed in our work.

As you look carefully through this comprehensive course bibliography, I believe you will agree that we accomplished our objectives. In addition to culling the literature comprehensively, we have collaborated one-on-one with many of the authors as we designed each module. We observed a number of the most successful teachers at colleges and universities throughout the United States and embedded their tools and practice into the course. We also tested our work through pilot projects at a number of participating institutions.

Our work has been methodical, comprehensive, and serious. The ACUE Advisory Board is proud of what the ACUE team has accomplished. I believe you will be as well.

Have a great class.

Matthew Goldstein
Chairman Emeritus, ACUE Board of Advisors
Chancellor Emeritus, City University of New York

ACUE and the American Council on Education

The American Council on Education (ACE) and the Association of College and University Educators (ACUE) have formed an important collaboration to provide professional development and support services to college instructors, with a focus on current and future college faculty whose primary responsibility is to teach or support instruction. ACE is working with ACUE as part of ACE’s nearly century-old mission to prepare campus leaders, support the work of colleges and universities, and assist institutions in strengthening student learning, persistence, and completion.

This collaboration advances ACE’s historic mission to improve access to postsecondary education and help our institutions of higher education enhance student outcomes through effective college instruction. ACUE and ACE’s shared goal is to dramatically expand the use of effective teaching practices to benefit students, faculty, and institutions. Students and institutions will benefit from these professional development services, as measured by stronger student outcomes.
Introduction

What are the essential instructional skills and knowledge that every college educator should possess?
This was the question ACUE set out to answer as it embarked on a mission to develop and credential higher education faculty through a world-class program of faculty development and support.

The answer is embodied in ACUE’s Course in Effective Teaching Practices—a scalable, online, and facilitated course that helps faculty develop approaches to teaching proven to help students succeed.
Over 14 months of research and development, ACUE consulted with the nation’s leading subject matter experts, surveyed over 1,000 faculty members, worked with over a dozen pilot partner colleges and universities, and conducted a comprehensive literature review. ACUE held faculty focus groups, partnered with teaching and learning centers, and engaged in conversations with college and university leaders nationwide to identify the essential evidence-based teaching approaches that promote student success.

ACUE’s Course in Effective Teaching Practices is a first-of-its-kind online program for faculty development that prepares faculty to learn—and apply—these evidence-based practices. The Course’s innovative online approach is designed for scale and impact—so that many faculty can learn about and enhance their teaching practice.

Nationwide, ACUE’s Course is the only program that leads to a Certificate in Effective College Instruction endorsed by the American Council on Education (ACE).
Through an innovative use of instructional videos, ACUE’s Course showcases exemplary classroom demonstrations and features interviews with over 70 award-winning college educators and subject matter experts. Its design has been informed by the latest research in cognition and adult learning that ensures Course-takers learn, and put into practice, the effective techniques shown to help students succeed.

What follows is a bibliography of the research that informs ACUE’s Course. It includes over 350 citations from the scholarship of teaching and the cognitive sciences. The bibliography is organized according to the Course’s five units of study:

- Designing an Effective Course and Class
- Establishing a Productive Learning Environment
- Using Active Learning Techniques
- Promoting Higher Order Thinking
- Assessing to Inform Instruction and Promote Learning

This bibliography is a compendium to Why Today’s College Students Need Effective Instruction More Than Ever: Faculty Development, Evidence-Based Teaching Practices, and Student Success, which presents the value of effective instruction and its impact on student success.

ACUE is committed to providing faculty with a course of study that is informed by the latest research in the cognitive and learning sciences. ACUE’s research is ongoing, with improvements and revisions made to the Course in Effective Teaching Practices as new findings are made available. The citations that follow represent research to date.
ACUE’s Course in Effective Teaching Practices

Unit 1. Designing an Effective Course and Class
   Module 1a. Establishing Powerful Learning Outcomes
   Module 1b. Aligning Assessments With Course Outcomes
   Module 1c. Aligning Activities and Assignments With Course Outcomes
   Module 1d. Preparing an Effective Syllabus
   Module 1e. Planning an Effective Class Session

Unit 2. Establishing a Productive Learning Environment
   Module 2a. Leading the First Day of Class
   Module 2b. Promoting a Civil Learning Environment
   Module 2c. Connecting With Your Students
   Module 2d. Motivating Your Students
   Module 2e. Engaging Underprepared Students
   Module 2f. Helping Students Persist in Their Studies
   Module 2g. Embracing Diversity in Your Classroom

Unit 3. Using Active Learning Techniques
   Module 3a. Using Active Learning Techniques in Small Groups
   Module 3b. Using Active Learning Techniques in Large Classes
   Module 3c. Delivering an Effective Lecture
   Module 3d. Planning Effective Class Discussions
   Module 3e. Facilitating Engaging Class Discussions
   Module 3f. Integrating Civic Learning Into Your Course

Unit 4. Promoting Higher Order Thinking
   Module 4a. Providing Clear Directions and Explanations
   Module 4b. Using Concept Maps and Other Visualization Tools
   Module 4c. Teaching Powerful Note-Taking Skills
   Module 4d. Using Advanced Questioning Techniques
   Module 4e. Developing Self-Directed Learners

Unit 5. Assessing to Inform Instruction and Promote Learning
   Module 5a. Developing Fair, Consistent, and Transparent Grading Practices
   Module 5b. Developing and Using Rubrics and Checklists
   Module 5c. Providing Useful Feedback
   Module 5d. Checking for Student Understanding
   Module 5e. Using Student Achievement and Feedback to Improve Your Teaching
Advising Subject Matter Experts

Barbara A. Frey, DEd
Instructional Design Manager
University of Pittsburgh

Dannelle D. Stevens, PhD
Professor Emerita
Graduate School of Education
Portland State University

Derek Bruff, PhD
Director, Center for Learning
Senior Lecturer,
Department of Mathematics
Vanderbilt University

Edward Prather, PhD
Associate Professor
Founding Executive Director, Center for Astronomy Education
University of Arizona

Elizabeth Barkley, PhD
Author
Professor, Music History
Foothill College

Jane Muhich, MEd
Professor
Department of Mathematics
Seattle Central College

Jay R. Howard, PhD
Dean
College of Liberal Arts & Sciences
Butler University

Jerome D. Williams, PhD
Executive Vice Chancellor & Provost
Distinguished Professor & Prudential Chair of Business
Rutgers University–Newark

John Pollard, PhD
Associate Professor of Practice
Department of Chemistry & Biochemistry
University of Arizona

José Bowen, PhD
President & Professor of Music
Goucher College

Kristen Knapp, PhD
Postdoctoral Psychology Resident
Cranberry Psychological Center

Kristin Webster, PhD
Assistant Professor
Department of Mathematics
California State University, Los Angeles

Linda Nilson, PhD
Higher Ed. Education Expert & Author
Clemson University (Retired)

Mary-Ann Winkelman
Coordinator of Instructional Development and Research
Associate Graduate Faculty, History Department
Principal Investigator, Transparency in Learning and Teaching Project
University of Nevada, Las Vegas

Michael Willard, PhD
Faculty Director of Service Learning
Center for Engagement, Service, and the Public Good
California State University, Los Angeles

Phyllis Blumberg, PhD
Director of the Teaching and Learning Center
Office of the Provost
University of the Sciences

R. Eric Landrum, PhD
Professor
Department of Psychology
Boise State University

Saundra McGuire, PhD
Director Emerita, Center for Academic Success
Professor of Chemistry (Retired)
Louisiana State University

Stephen Brookfield, PhD
John Ireland Endowed Chair
University of St. Thomas, Minnesota

Thomas A. Angelo, EdD
Clinical Professor of Educational Innovation & Research
Director, Educator Development for The Academy
UNC Eshelman School of Pharmacy
University of North Carolina at Chapel Hill

Todd Zakrajesk, PhD
Associate Professor
Department of Family Medicine
University of North Carolina at Chapel Hill

Trudy W. Banta, EdD
Professor, Higher Education
Senior Advisor to the Chancellor for Academic Planning and Evaluation
Indiana University–Purdue University Indianapolis

Virginia Anderson, EdD
Professor Emerita
Department of Biological Sciences
Towson University
Unit 1. Designing an Effective Course and Class

Module 1a. Establishing Powerful Learning Outcomes

In this module, faculty learn how to write course learning outcomes that effectively define what students will know and be able to do at the end of a course. The module introduces a set of steps for writing outcomes that are student-centered, actionable, specific, sequenced from foundational to more complex, and aligned—when appropriate—to program, department, and institutional outcomes.

To satisfy the module requirements, practicing faculty must apply the recommended techniques to write new learning outcomes or revise their existing learning outcomes.

Advising Subject Matter Expert: Thomas A. Angelo, University of North Carolina at Chapel Hill


Module 1b. Aligning Assessments With Course Outcomes

In this module, faculty learn how to design assessments that most effectively and efficiently allow students to demonstrate mastery of course outcomes. In addition, the module includes techniques to help students prepare to meet assessment expectations.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as revising a course assessment based on the cognitive levels of applicable learning outcomes, developing an assessment blueprint, or creating a course assessment plan.

Advising Subject Matter Expert: Thomas A. Angelo, University of North Carolina at Chapel Hill


Module 1c. Aligning Activities and Assignments With Course Outcomes

In this module, faculty learn how to select activities and assignments that are aligned to the cognitive levels of their learning outcomes, prepare for in- and out-of-class time, and design transparent assignments.

To satisfy the module requirements, practicing faculty must develop or revise a course activity or assignment aligned to course outcomes and designed to help students better attain those outcomes.

Advising Subject Matter Experts: Mary-Ann Winkelmes, University of Nevada, Las Vegas, and Thomas A. Angelo, University of North Carolina at Chapel Hill

Module 1d. Preparing an Effective Syllabus

In this module, faculty learn how to design a syllabus that both communicates essential information and facilitates student success. The module includes a checklist and guiding questions instructors can use to identify essential items and important resources. Instructors learn how to design calendars to assist students in meeting key deliverables and build a graphic or big ideas syllabus to support students in visualizing the organization of the course.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as using a checklist and guiding questions to revise their syllabus or creating their own graphic or big ideas syllabus.

Advising Subject Matter Expert: Linda Nilson, Clemson University (retired)

Module 1e. Planning an Effective Class Session

In this module, faculty learn how to effectively leverage each portion of a class session to positively impact student learning. The module includes techniques designed to begin class—the most critical learning time—with a powerful opening. Faculty also learn strategies to segment class sessions with student-active breaks and end by engaging students in summary activities.

To satisfy the module requirements, practicing faculty must apply the techniques to plan a class session with an effective start, middle, and end.

Advising Subject Matter Experts: Stephen Brookfield, University of St. Thomas, Minnesota, and Elizabeth Barkley, Foothill College


Unit 2. Establishing a Productive Learning Environment

Module 2a. Leading the First Day of Class

In this module, faculty learn how to plan for a successful first day, start building a community of learners, and implement active learning strategies that help students understand course expectations.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as creating an outline for the first class session, using an icebreaker, or assigning a syllabus activity.

Advising Subject Matter Expert: Linda Nilson, Clemson University (retired)


Module 2b. Promoting a Civil Learning Environment

In this module, faculty learn how to work with students to set expectations for a civil learning environment. In addition, the module helps faculty address low-, mid-, and high-level disruptions to the learning environment.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as writing policies regarding classroom civility, writing classroom norms with students, or using appropriate methods to respond to student behaviors.

Advising Subject Matter Experts: Barbara Frey, University of Pittsburgh; Kristen Knepp, Cranberry Psychological Center; and Linda Nilson, Clemson University (retired)


Module 2c. Connecting With Your Students

In this module, faculty learn how to create a classroom environment that supports learning, make their course content relevant, and communicate their belief in students’ ability to meet course expectations.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as using seating charts, talking with students before class, or using data from student surveys to adjust instruction.

Advising Subject Matter Expert: Linda Nilson, Clemson University (retired)


Module 2d. Motivating Your Students

In this module, faculty learn how to motivate students by developing students' appreciation for their discipline. In addition, faculty learn to support student success through setting goals, incentivizing assignment completion, and using a variety of assessment and instructional strategies to meet the needs and showcase the strengths of different types of learners.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as discussing their interest in the discipline, establishing incentives for assignment completion, or teaching students the DAPPS formula for setting goals.

Advising Subject Matter Expert: Linda Nilson, Clemson University (retired)


Wieman, C. (2010). Basic instructor habits to keep students engaged. Retrieved from the Carl Wieman Science Education Initiative at the University of British Columbia website: http://www.cwsei.ubc.ca/Files/InstructorHabitsToKeepStudentsEngaged_CWSEI.pdf
Module 2e. Engaging Underprepared Students

In this module, faculty learn how to assess students’ levels of readiness in order to inform instruction and encourage the use of campus resources for academic support. The module also teaches faculty how to clearly communicate their expectations and use grading practices that fully support student success.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as using ungraded assignments early in the semester, inviting a panel of past students to share advice with their current students, using a performance prognosis inventory, or sharing academic support resources.

Advising Subject Matter Experts: José Bowen, Goucher College; and Saundra McGuire, Louisiana State University


Module 2f. Helping Students Persist in Their Studies

In this module, faculty learn how to build intrinsic motivation by offering choice, providing targeted feedback and revision opportunities, and connecting course learning to career goals. It also introduces the concept and motivational impact of a growth mindset.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as providing students with a choice in the type of project they will complete, offering students an opportunity to use feedback to revise an assignment, or showing students how course content is connected to their career goals.

Advising Subject Matter Expert: Jane Muhich, Seattle Central College


Module 2g. Embracing Diversity in Your Classroom

In this module, faculty examine how their own experiences have shaped their perspectives and the importance of valuing different viewpoints. In addition, faculty learn about the power of explicit and implicit messages (microaggressions, stereotype threat) and how to create an inclusive classroom environment and curriculum that are representative of diverse student perspectives.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as assessing and revising their curriculum to represent a diverse society or writing ground rules for productive discourse in the classroom.

Advising Subject Matter Experts: Jerome D. Williams, Rutgers University—Newark, and Stephen Brookfield, University of St. Thomas, Minnesota


Unit 3. Using Active Learning Techniques

Module 3a. Using Active Learning Techniques in Small Groups

In this module, faculty learn to implement the essential components of effective active learning, including providing a rationale for the activity, promoting group interdependence, holding group members accountable, and collecting student feedback to identify strengths and areas for improving the activity. The module helps instructors implement three active learning techniques (Think-Pair-Share, Jigsaw, and Analytic Teams) depending on the learning objectives they have set for their class session.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as holding students accountable for their participation in group activities or implementing an appropriate active learning activity.

Advising Subject Matter Expert: Elizabeth Barkley, Foothill College


Wieman, C. (2010). Basic instructor habits to keep students engaged. Retrieved from the Carl Wieman Science Education Initiative at the University of British Columbia website: http://www.cwsei.ubc.ca/Files/InstructorHabitsToKeepStudentsEngaged_CWSEI.pdf

Module 3b. Using Active Learning Techniques in Large Classes

In this module, faculty learn how to effectively plan and facilitate active learning in a large class. The module teaches faculty to use an active learning cycle to pique student interest, build foundational knowledge, and then require students to apply new concepts. In addition, the module includes techniques for using formative assessment and leveraging technology to inform and improve learning.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as using cues to keep students on task, designing lessons according to an active learning cycle, or closing with an activity to hold students accountable.

Advising Subject Matter Experts: John Pollard, University of Arizona, and Edward Prather, University of Arizona


PolyUFB. (2013, February 20). Dr. Allison Lloyd – Active learning in large class [Video file]. Retrieved from https://www.youtube.com/watch?v=c_zlpj89AFg


Module 3c. Delivering an Effective Lecture

In this module, faculty learn how to determine if the lecture approach is aligned to their learning objectives, develop well-organized and effectively paced lectures, keep students engaged, and seek student feedback.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as opening with an interesting quote or question to pique students’ interest, providing skeletal notes, or chunking information into manageable segments.

Advising Subject Matter Expert: Stephen Brookfield, University of St. Thomas, Minnesota


Module 3d. Planning Effective Class Discussions

In this module, faculty learn how to write well-sequenced, thought-provoking questions to increase student engagement in class discussions. The module helps instructors effectively set expectations for participation, explain the role of discussion for positively impacting learning, and develop an effective grading policy. Faculty will also learn how to leverage class discussions so students come to class prepared and having done the assigned reading or homework.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as sequencing questions to progress toward higher order thinking, developing a grading policy for participation, or assigning students a self-grading activity.

Advising Subject Matter Expert: Jay R. Howard, Butler University


Module 3e. Facilitating Engaging Class Discussions

In this module, faculty learn activities they can use to launch productive discussions, including Hatful of Quotes, Sentence Completions, and Fishbowl techniques. The module also helps instructors balance student participation using wait time, prompts to manage dominant talkers, and techniques to encourage quieter students while also limiting their own talking.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as using a Fishbowl activity, wait time, or prompting.

Advising Subject Matter Expert: Jay R. Howard, Butler University


Module 3f. Integrating Civic Learning Into Your Course

In this module, faculty learn how to design assignments that incorporate civic knowledge, skills, and values; as well as teach students to strategically use research to solve local problems, share their findings with the community, and develop their civic values.

To satisfy the module requirements, practicing faculty must create a civic learning assignment for one of their courses.

Advising Subject Matter Experts: Kristin Webster, California State University, Los Angeles; and Michael Willard, California State University, Los Angeles


Unit 4. Promoting Higher Order Thinking

Module 4a. Providing Clear Directions and Explanations

In this module, faculty learn how to provide a set of high-quality directions for complex tasks and the essential techniques for giving clear explanations of challenging content. In addition, the module includes techniques for obtaining student feedback on the clarity of directions and explanations designed to inform instructional adjustments when needed.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as providing written directions, sharing multiple examples, or assigning a class-reaction survey.

Advising Subject Matter Expert: Linda Nilson, Clemson University (retired)


Module 4b. Using Concept Maps and Other Visualization Tools

In this module, faculty learn how to use concept maps and a variety of visualization tools to assist students in understanding complex concepts, principles, and ideas and the important relationships between them.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as using a flowchart during a class session, asking students to use visual tools to answer questions, or teaching students to use concept maps to prepare for exams.

Advising Subject Matter Experts: Derek Bruff, Vanderbilt University, and Todd Zakrajsek, University of North Carolina at Chapel Hill


Module 4c. Teaching Powerful Note-Taking Skills

In this module, faculty learn how to motivate students to take notes and effectively support note-taking by sharing pointers, providing skeletal outlines, allowing processing time, and using cues to signal important points.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as sharing research that supports the benefits of note-taking, teaching students how to take notes, or providing a skeletal outline.

Advising Subject Matter Expert: Linda Nilson, Clemson University (retired)


Module 4d. Using Advanced Questioning Techniques

In this module, faculty learn how to plan a questioning strategy that prompts critical thinking. The module also helps instructors use advanced questioning techniques, like the Socratic Method, and activities for helping students develop their own questioning skills.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as using a taxonomy to appropriately scaffold questions, using the CLOSE-UP method, or assigning students a task that requires them to write their own questions.

Advising Subject Matter Expert: Stephen Brookfield, University of St. Thomas, Minnesota


Module 4e. Developing Self-Directed Learners

In this module, faculty learn how to assist students in understanding and taking ownership of their own learning process. Techniques include using cues to guide student learning, presenting and having students develop work plans for completing complex assignments, prompting self-reflection with rubrics or other grading guidelines, and making worked examples available.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as sharing examples of prior students’ work, using an exam wrapper, or having students complete the Critical Incident Questionnaire.
Advising Subject Matter Expert: Stephen Brookfield, University of St. Thomas, Minnesota


Unit 5. Assessing to Inform Instruction and Promote Learning

Module 5a. Delivering Fair, Consistent, and Transparent Grading Practices

In this module, faculty learn to implement research-based grading practices aligned to their grading philosophy and course content. In addition, the module includes information on setting grading policies for late assignments and extra credit and effectively communicating grading practices to students.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as sharing their grading policy with students, assigning different values to assignments based on learning opportunities, or offering extra credit for improved learning.

Advising Subject Matter Experts: Trudy W. Banta, Indiana University–Purdue University Indianapolis; Virginia Anderson, Towson University; and Linda Nilson, Clemson University (retired)


Module 5b. Developing and Using Rubrics and Checklists

In this module, faculty learn how to select a grading tool that best aligns to the assigned task and offers the type of feedback most helpful to students. In addition, the module includes techniques for helping students understand how to use different grading tools to their benefit as well as techniques for helping instructors understand how they might use the data generated from grading tools to inform instruction.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as creating an assignment checklist, having students use a rubric to analyze sample papers, or analyzing rubric data.

Advising Subject Matter Experts: Dannelle D. Stevens, Portland State University; Phyllis Blumberg, University of the Sciences; R. Eric Landrum, Boise State University; and Linda Nilson, Clemson University (retired)


Module 5c. Providing Useful Feedback

In this module, faculty learn how to offer students effective feedback. In addition, the module includes techniques to help students more effectively use feedback for improvement and to help instructors leverage technology to increase feedback efficiency.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as providing timely feedback, conducting structured peer review sessions, or distributing handouts that address common errors.

Advising Subject Matter Expert: Thomas A. Angelo, University of North Carolina at Chapel Hill


Module 5d. Checking for Student Understanding

In this module, faculty learn how to effectively check for student understanding by using quality questioning techniques and whole-class formative assessment strategies including the One-Minute Paper, Muddiest Point, and In Your Own Words.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as calling on both volunteers and nonvolunteers, using wait time, asking students to clarify or expand on their responses, or implementing a classroom assessment technique.

Advising Subject Matter Experts: Elizabeth Barkley, Foothill College, and Thomas A. Angelo, University of North Carolina at Chapel Hill


Module 5e. Using Student Achievement and Feedback to Improve Your Teaching

In this module, faculty learn how to use patterns of student achievement on key assignments and assessments to inform instruction. In addition, the module provides techniques to secure mid- and end-of-semester feedback from students and techniques to use colleague observations and consultations with faculty development specialists to inform improvements in instruction.

To satisfy the module requirements, practicing faculty must apply at least one technique, such as creating a data analysis insights chart, securing midsemester feedback, or documenting teaching practices in a journal.

Advising Subject Matter Experts: José Bowen, Goucher College, and Trudy W. Banta, Indiana University–Purdue University Indianapolis


Have a Great Class.™