

How Will My Students Respond to Active Learning?

If students have not previously used active-learning strategies then they may be concerned and frustrated by your progressive teaching approaches. It is important that students know why you teach the way that you do. They should know what your goals are for the course and understand how you plan to help them achieve mastery of those goals. They should understand why the content of your course is important in their college education. Fundamentally – *your students need to learn how to learn.*

Below are descriptions of activities that you might consider using in your class. These activities are defined more broadly than the content of your course. These activities engage students with the objectives of their education and how effective instruction, while causing the mind to actively work, will help them learn in significant ways and to attain *their* goals.

A. What Do You Expect and Need from Your College Education?

During the first day of class include a discussion that opens with: “Thinking of what you want to get out of your college education and this course, which of the following is *most* important to you?”

1. Acquiring factual knowledge
2. Learning how to use knowledge in new situations
3. Developing lifelong learning skills”

The voting usually emphasizes items 2 and 3.

Then ask: “All three of these goals are clearly important; for instance you can’t use knowledge without first obtaining it. But, let’s think for a moment of how best to accomplish these goals. Learning is not a spectator sport – it takes work; that includes work in the classroom and work that you do outside of the classroom. So, of these three goals, which do you think you can make headway on outside of class by your own reading and studying, and which do you think would be best achieved in class working with your classmates and me?”

Typically, students feel that they can make headway with factual knowledge on their own and want assistance with the other two goals. This, then, leads to a discussion of how to pursue goals 2 and 3. Goals 2 and 3 are not achieved by reading or listening to a lecturer – students must actively do things in order to learn. Students learn best

- When they take an active role:
- When they discuss what they are reading
- When they practice what they are learning
- When they apply practices and ideas.

The realization of active learning causes students to accept that in order to reach their goals they have to read and otherwise prepare before coming to class by making first contact with content on their own. Students and instructors together then use that content during class in active-learning activities (e.g., collaborative or cooperative learning exercises, discussion, etc.). This discussion can also lead to the importance of feedback for learning and the need to do frequent formative assessment.

Students may not have much experience with active learning or expectations placed upon them for their learning. This activity is important for getting student buy-in to why active-learning strategies are used in a course and the partnership responsibilities of instructor and student. Without this introductory dialogue, the expectation of coming to class prepared, the expectation to work with peers in class, and the expectation of completing frequent assessments of learning can seem foreign to students and seem

like too much work compared to listening to lectures and regurgitating facts on exams. However, once students confront the linkage between their goals and the implemented learning methods they have a new appreciation of why you and they do the things that happen in the course and they come to value these methods so long as they are used effectively and they can measure their own learning.

B. How Does Your College Education Link to your Future Goals?

This activity is similar to "A" but focuses more on student career aspirations than on educational expectations but it ultimately links the two topics. In this activity, students are asked to share what is important to them and then link these goals to the expectations of a broad-based college education.

Faculty often feel (rightly or wrongly) that students just want a job after college and see the college curriculum as a minefield of hurdles to be navigated using a path of least resistance; students don't want to learn, they want a degree. A biology professor at the University of Michigan shares this comment written by one of his students: "Education is the only business where the consumer is satisfied with less product."

In this activity, the discussion starts with listing and sharing personal goals. In introductory courses, keep in mind that many freshman not have identified a major and should not be made to feel inferior to those who have. In this case, the emphasis is probably best placed on general aspirations that do not focus on a career linked to a particular major. "What things interest you to pursue in life? What motivates you to undertake these activities or career paths?"

To build from this discussion toward an understanding of learning outcomes and teaching objectives, consider using the attached two-page handout from a publication of the American Association of Colleges and Universities. Have students initially only look at the first page and respond with their impressions of the list. A potential outcome of this initial discussion is that many students will dismiss the list as sounding abstract and "academic"... what professors think are good for them but not goals that they see as essential to making lots of money in a career.

Then – follow up with discussion of what the employers' survey shows on the backside of the sheet – the critical features of an "academic" liberal education *are what employers want!* Building from this point, the instructor can pursue discussion (± reading and writing) about how to attain these lofty goals – how to learn for future personal and professional growth.

The Essential Learning Outcomes



Beginning in school, and continuing at successively higher levels across their college studies, students should prepare for twenty-first-century challenges by gaining:

★ Knowledge of Human Cultures and the Physical and Natural World

- Through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts

Focused by engagement with big questions, both contemporary and enduring

★ Intellectual and Practical Skills, including

- Inquiry and analysis
- Critical and creative thinking
- Written and oral communication
- Quantitative literacy
- Information literacy
- Teamwork and problem solving

Practiced extensively, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance

★ Personal and Social Responsibility, including

- Civic knowledge and engagement—local and global
- Intercultural knowledge and competence
- Ethical reasoning and action
- Foundations and skills for lifelong learning

Anchored through active involvement with diverse communities and real-world challenges

★ Integrative Learning, including

- Synthesis and advanced accomplishment across general and specialized studies

Demonstrated through the application of knowledge, skills, and responsibilities to new settings and complex problems

Note: This listing was developed through a multiyear dialogue with hundreds of colleges and universities about needed goals for student learning; analysis of a long series of recommendations and reports from the business community; and analysis of the accreditation requirements for engineering, business, nursing, and teacher education. The findings are documented in previous publications of the Association of American Colleges and Universities: *Greater Expectations: A New Vision for Learning as a Nation Goes to College* (2002), *Taking Responsibility for the Quality of the Baccalaureate Degree* (2004), and *Liberal Education Outcomes: A Preliminary Report on Achievement in College* (2005). *Liberal Education Outcomes* is available online at www.aacu.org/leap.



Percentage of Employers Who Want Colleges to “Place More Emphasis” on Essential Learning Outcomes



★ **Knowledge of Human Cultures and the Physical and Natural World**

• Science and technology	82%
• Global issues	72%*
• The role of the United States in the world	60%
• Cultural values and traditions (U.S./global)	53%*

★ **Intellectual and Practical Skills**

• Teamwork skills in diverse groups	76%*
• Critical thinking and analytic reasoning	73%
• Written and oral communication	73%
• Information literacy	70%
• Creativity and innovation	70%
• Complex problem solving	64%
• Quantitative reasoning	60%

★ **Personal and Social Responsibility**

• Intercultural competence (teamwork in diverse groups)	76%*
• Intercultural knowledge (global issues)	72%*
• Ethics and values	56%
• Cultural values/traditions—U.S./global	53%*

★ **Integrative Learning**

• Applied knowledge in real-world settings	73%
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Note: These findings are taken from a survey of employers commissioned by the Association of American Colleges and Universities and conducted by Peter D. Hart Associates in November and December 2006. For a full report on the survey and its complete findings, see www.aacu.org/leap.

*Three starred items are shown in two learning outcome categories because they apply to both.

C. How Do I Learn?

Ask your students to reflect upon and discuss one or two learning experiences that are most memorable to them from other college courses (and high school, in a freshmen class) or from life experiences outside of formal schooling. Do common themes develop? How many of your students refer to active experiences rather than passive learning from reading and listening? Ask your students, or reflect yourself: "What are the implications for how this class might be most effectively taught in order to achieve the most possible learning?"

Ask your students this question: "Does everybody learn best by doing the same things?" Do some people learn best by listening rather than talking? Do some people learn best when working with others or by themselves? This leads to the question: "How do each of you learn best?" To find out, have your students complete a learning-style inventory as homework and then bring the results to class.

There are two easily accessible online learning-style inventories. Each requires only a few minutes to complete and the student can produce a printable report that summarizes their learning preferences and includes guidance on learning strategies that match these learning preferences.

http://www.ulc.arizona.edu/learning_profile.php

<http://www.engr.ncsu.edu/learningstyles/ilsweb.html>

One use of these student reports is to compile a graphical summary in class and use it as a basis for discussion. Most students will not have thought about different learning styles or how they learn, or that they learn differently from someone else. What does it mean to learn in different ways? Given a diversity of learning styles, what are the implications for how a course is taught? What will likely be apparent is that very few students really excel at learning by listening to a lecture, so this result will support the value of active-learning strategies mentioned in Activity A. In addition, it is likely that, even in a modest-sized class of 25 students, the results will be highly diverse, which will lead to consideration of the need to use multiple instructional strategies, perhaps in a systematic way. The instructor using this approach in class would likely want to become more familiar with learning styles and an excellent short review is:

"Student learning styles and their implications for teaching," S. M. Montgomery and L.N. Groat, University of Michigan, Center for Research on Learning and Teaching, Occasional Papers 10, 8 p.

http://www.crlt.umich.edu/publinks/CRLT_no10.pdf.

Further steps with activity C include the possibility of:

- Building a course design and learning contract with your students.
- Expand the discussion with other reading on learning or on Bloom's taxonomy (<http://faculty.washington.edu/krumme/guides/bloom1.html>) as a guide to learning at different levels.
- Students could compose reflective essays that examine the learning experiences that were most memorable to them, and/or what new insights they now have about their own learning, by linking their inventory results with the reading and classroom discussion.

Reading resources:

"Learning Styles," Chapter 3 in Teaching First-Year College Students, B.L. Erickson, C.B. Peters, D.W. Strommer, 2006, Jossey Bass. A good intro to learning styles with suggestions of how to discuss learning styles with students; a resource for teachers more than an assignment for students.

"Student Learning Styles and Their Implications for Teaching," by S.M. Montgomery and L.N. Groat, CRLT Occasional Paper no. 10, Center for Research on Learning and Teaching, University of Michigan; <http://www.crlt.umich.edu/publinks/occasional.html>. A very brief intro learning styles; a resource for teachers more than an assignment for students.

"Navigating the Bumpy Road to Student-Centered Instruction," by R.M. Felder and R. Brent, 1996, College Teaching, v. 44, #2, p. 43-47. <http://www4.ncsu.edu/unity/lockers/users/f/felder/public/Papers/Resist.html>.

A commonly cited frank summary of the difficulties faced by both students and faculty when first encountering learner-centered rather than teacher-centered instruction, and possible remedies.

"Aligning Faculty Activities and Student Behavior," by G.D. Kuhs, T.F.N. Laird, and P.D. Umbach, 2004, Liberal Education, Fall 2004, p. 24-31. (Downloadable on Gold Rush). Uses data from faculty and student engagement surveys to show that faculty can and do shape student performance and learning achievement by what they themselves value and do.

"Teaching and Learning with the Net Generation," by K. Banres, R.C. Marateo, and S.P. Ferris, 2007, Innovate, v. 3, no. 4, article 382 (Downloadable at www.innovateonline.info). Reviews and summarizes literature regarding the learning styles of "netgen" students including successful teaching approaches; the overall message is that these students learn differently than their predecessors but they do value learning.