ACTIVE LEARNING:
DEFINITION, JUSTIFICATION, AND FACILITATION

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DEFINITION OF ACTIVE LEARNING

This is the broadest and most inclusive learning principle and it undergirds all other key learning processes. Active learning can be defined as an investment of a significant amount of mental energy and a high level of psychological involvement in the learning process.

Student involvement in the learning process may be conceptualized as falling on a continuum of attention or engagement, ranging from active learning on one end to passive learning on the other. For instance, student engagement in class can range from being "passive" (e.g., total inattentiveness—looking out the window and thinking about other things) to "moderately active" (e.g., intermittent attention—tuning in only when the instructor writes something on the board) to "very active" (e.g., listening intently, taking notes, monitoring comprehension, asking questions, and participating in class discussions).

The degree or amount of mental energy invested in the learning process increases substantially when students physically act on, or engage in some action with respect to, the material they are learning—i.e., they actually do something with the subject matter at hand. Three major modes of action through which students can become actively involved with course material are (1) writing (2) speaking and (3) use of information technology (i.e., use of computer technology such as word processing, electronic mail, or the World Wide Web). These three skills represent major modes or vehicles for ensuring student involvement and promoting active learning.

RESEARCH & SCHOLARSHIP SUPPORTING THE VALUE OF ACTIVE LEARNING

National commissions and blue-ribbon reports on the status of American higher education have repeatedly criticized the college experience for its failure to actively involve students in the learning process (National Institute of Education, 1984; Association of American Colleges, 1985; Boyer, 1987; Task Group on General Education, 1988; Wingspread Group, 1993). In one report on American higher education, a former president of Harvard university reached the following conclusion:

The vast and rapidly growing accumulation of information and knowledge has implications at all levels of education. In the colleges, the most apparent need is to change the emphasis of instruction away from transmitting fixed bodies of information toward preparing students to engage in a continuing acquisition of knowledge and understanding. In terms of pedagogy, the preparation for continuous learning implies a shift toward more active forms of instruction (Bok, 1986, p. 165).

This oft-cited failure to more actively engage students in the learning process may be due, in large measure, to college instructors' over-reliance on the lecture method. Survey research indicates that the vast majority of
college faculty--ranging from 75-90%--report that lecturing ("chalk 'n' talk") is their primary method of instruction (Thielens, 1987). This has been found to hold true for a variety of courses, class sizes, and student levels (freshmen year through senior year), prompting one group of investigators to conclude: "Give a faculty almost any kind of class in any subject, large or small, upper or lower division, and they will lecture" (Blackburn, et al., 1980, p. 41).

Though there are advantages to the lecture method, if used neither excessively nor exclusively, its liabilities are that (a) it "assumes students most effectively learn by listening to knowledgeable people talk about their knowledge" (Chickering, 1974, p. 67), and (b) it runs the risk of resulting in long periods of uninterrupted, teacher-centered discourse that often relegates students to the role of passive "spectators" in the college classroom. The negative long-term implications of this passivity for freshmen who are often exposed to lecture-laden introductory courses is articulated by Kenneth Spear in Rejuvenating Introductory Courses:

In these formative experiences, (students) learn what it is to be a student, what is required to get by. If students are taught to be passive seekers and transcribers of information, that is what they become. Further, they set their sights accordingly in subsequent courses, often actively resisting our attempts in upper-division courses to get them to go beyond the information we give them (1984, pp. 6-7).

Research has consistently shown that student attention and concentration during straight lectures tend to drop off dramatically after 15-20 minutes (Penner, 1984; Verner and Dickinson, 1967), even among highly motivated postgraduate students (Stuart and Rutherford, 1978).

Moreover, even if students manage to maintain attention and concentration throughout a typical 50-minute lecture, research strongly suggests that such important educational outcomes as higher-level thinking and attitude change are less likely to occur when students listen to lectures than when they engage in more active forms of learning (McKeachie et al., 1986; Pascarella & Terenzini, 1991). Following their review of the research literature, Bonwell and Eison reached this conclusion:

The evidence suggests that if an instructor's goals are not only to impart information but also to develop cognitive skills and to change attitudes, then alternative teaching strategies should be interwoven with the lecture method during classroom presentations (1991, p. 10).

McKeachie et al. (1986) also conducted an extensive review of the research literature on college teaching methods and reached a similar conclusion: "If we want students to become more effective in meaningful learning and thinking, they need to spend more time in active, meaningful learning and thinking--not just sitting and passively receiving information" (p. 77)(underlining added).

Lastly, research indicates that active student involvement in the learning process is a factor that is strongly associated with student retention, i.e., persistence to course and degree completion (Astin, 1993).

Taken together, all these findings point to the conclusion that an inordinate amount of class time should not be devoted to lecturing, especially on material which could readily be presented in print form and which students could process more effectively by reading it at their own
pace. Indeed, the etymology of the word "lecture" derives from the Latin word "lectura" which means "to read". Lecturing emerged as a teaching technique when books were in short supply because printing machines were limited both in number and sophistication. With the advent of more advanced printing machinery, textbooks became abundant, yet reliance on the lecture as an information-dissemination method continued to persist. As one contemporary active-learning advocate argues: "Lecturing is as anachronistic as getting the daily news from a town crier" (Tom Brothen cited in Dinehart & Shepherd, 1988, p. 6). Even in 1916, John Dewey asked lamentably: "Why is it, in spite of the fact that teaching by pouring in, learning by passive absorption, are universally condemned, that they are still so entrenched in practice?" (p. 46).

Fortunately, there now appears to be growing national awareness of the need for more active student learning in American colleges and universities, as evidenced by a survey of 586 institutions by the Association of American Colleges' Network for Academic Renewal. The results of this survey revealed a strong interest in "encouraging faculty to develop engaging pedagogies," with 65% of the respondents reporting "a lot" of interest in this topic (Gaff, 1994).

Three major modes or vehicles for actively engaging students in the learning process are (a) writing, (b) speaking, and (c) use of information technology. Documentation for the importance or relevance of each of these active-learning modes for student success is provided below.

Writing

Amid general concern about declining literacy and academic preparedness of college students during the mid-1970s, the crisis in student writing emerged as an issue in higher education (Smit, 1991). Testimony for this concern is the proliferation of writing proficiency testing at colleges and universities (Connolly & Vilardi, 1986).

In 1981, a major research report on student writing in high school revealed that less than 3% of students' class time and homework was spent on writing anything longer than a paragraph. When students did write, it typically consisted of summaries, descriptive reports, stories, or poems; virtually no persuasive writing was done in high school (Applebee, 1981). Comprehensive nationwide testing of high school seniors' writing skills by the National Assessment of Educational Progress (NAEP) has revealed declining performance on a variety of writing tasks (Applebee, et al., 1990).

Decline in the frequency and proficiency of student writing has triggered alarming concern in higher education because the quality of student writing and the quality of student thinking have long been considered to be inextricably related. The importance of writing for focusing and developing thinking has rested on the following bedrock of arguments: (a) Writing is an active process requiring a high level of cognitive engagement or involvement. (b) The act of writing is characteristically slow and explicit, resulting in an accompanying thought process that is more reflective and deliberately conscious of specific details. (c) The visibility and indelibility of the written word encourages students to step back from their thinking so they can objectively reassess, refine, or rediscover thoughts (Applebee, 1984). As poet William Stafford (1982) articulates it, "A writer is not so much someone who has something to say as he is someone who has found a process that will bring about new things he would not have thought of if he had not started to say them" (quoted in Connolly, 1989, p. 3).
When viewed from this perspective, writing is not just a vehicle for communication but also a process for learning. This represents a paradigm shift from the old "product-oriented" approach to writing which emphasized that writing is the product of thinking, i.e., writing comes after the formulation of clear thoughts in a think-then-write sequence. The new writing paradigm takes a "process-oriented" approach in which the writer's thinking develops during the process of writing (Ambron, 1991).

The phrase "writing to learn" has been coined to capture this process, representing a learning process that should not only take place in lower-division composition classes, but which should occur in all academic disciplines. To promote such cross-disciplinary writing, "Writing Across the Curriculum" (WAC) programs began to emerge at colleges and universities during the mid-1970s (ERIC Information Bulletin, 1991). A 1987 survey revealed that 427 postsecondary institutions had adopted some type of formal WAC program which required at least one upper-division writing course (McLeod & Shirley, 1988); and a 1988 survey of community colleges indicated that "writing to learn" or "writing and thinking" ranked first as a faculty development topic, with over 70% of the responding institutions reporting that workshops on this topic had been conducted on campus (Stout & Magnotto, 1991).

Speaking

Survey research has revealed that "fear of public speaking" is very common among the general population of both adolescents and adults (Motley, 1988); significant numbers of college students, in particular, are known to experience "communication apprehension" in the classroom (Bowers, 1986). Additional research has revealed that such speech anxiety may be significantly reduced if students are given the opportunity to first express themselves in the more comfortable social context of a small group of peers (Neer, 1987).

These findings strongly suggest that students be given opportunities to speak in college classrooms, particularly in a small-group context, so that they may defuse public-speaking fears and develop oral-communication skills. This suggestion is supported by research conducted at Harvard University in which graduating seniors were asked about what specific steps they would recommend to incoming freshmen, especially slightly shy or uncertain first-semester students, that they could take to begin developing self-confidence and initiative. The most frequent recommendation offered by seniors to first-year students was that they take some small classes in which they must speak up. "Nearly without exception, upperclassmen consider this by far the most important training a freshman can get" (Light, 1992, pp. 19-20).

One positive byproduct of reducing students' fear of speaking and increasing their opportunities to express themselves verbally may be improvement in the quality of their thinking. As the Task Group on General Education articulates it in a national report sponsored by the Association of American Colleges: "All too often, our operational assumption as teachers is that learning takes place when we talk. But students learn when they talk to themselves and others" (1988, p. 27).

The director of Harvard University's Center for Teaching & Learning eloquently articulates this relationship between speaking and thinking,

Until a student hears herself expounding or questioning, she may not know that she thinks, which is why speaking empowers future thinking and speaking. As soon as she has asserted something, even in the form of a
question, she puts herself in the position of being able to criticize her own thought as well as the teacher's (Gullette, 1989, p. 34).

Speaking or verbal articulation of one's ideas is also an important vehicle for promoting critical thinking. In a comprehensive review of research on critical thinking, Kurfiss (1988) concluded that one key teaching practice for developing higher-order thinking is requiring students to explicitly formulate and justify their ideas. Also, research in the fields of cognitive psychology and problem solving has revealed that if college students are required to explain why they take the steps they do during problem-solving tasks, they evince higher levels of problem-solving performance—particularly during initial stages of learning and skill development (Ahlum-Heather & DiVesta, 1986).

Use of Information Technology

Given that the information-technology explosion is relatively recent, it has yet to be demonstrated empirically through well-designed and well-conducted research that student learning is improved significantly by information technology (Batson & Bass, 1996). However, there are several conceptually compelling arguments and a growing number of anecdotal reports, which support the position that information technology can effectively augment the teaching-learning process in the following ways.

1. Facilitating students' ability to access and manipulate information.

   Like reading and writing, "information literacy" is now viewed as a basic skill and an essential outcome of liberal education. The American Library Association has defined information literacy in the following fashion:

   To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information. Ultimately, information-literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information, and how to use information. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand (Final Report, American Library Association Presidential Committee on Information Literacy, cited in Lyman 1991, p. 40).

   This definition highlights the important role of electronic technology in the process of information location and retrieval. As Batson and Bass point out:

   Information technologies bring process to the foreground. It is hard to find any discipline where vital processes in the field are not becoming more accessible in one way or another. Access to new sources of data, combined with easier-to-use computer-based search tools, allow undergraduate students to use data formerly available to graduate students (1996, p. 45)

2. Enhancing faculty communication and increasing faculty availability to students.

   It is becoming increasingly common for faculty to provide students with their electronic mail (e-mail) address on the course syllabus, using e-mail
as a vehicle for communicating with students outside the classroom, and as a way to supplement or extend their out-of-class availability to students beyond traditional office hours (Green, 1996).

3. Increasing student participation in class discussions.

Computer-mediated communication has the potential for facilitating discussion of sensitive topics or issues and for promoting the involvement of shy or reticent students. Thus, one positive byproduct of information technology may be its ability to allow for higher and more uniform student participation (Oblinger & Maruyama, 1996). One student who participated in computer-mediated class discussions reported that she liked it because she did not have to worry about "somebody giving you a crazy look" and because it allowed her the opportunity to get her thoughts together without getting "tongue-twisted" (quoted in Coombs, 1995, p. 12).

4. Increasing collaborative learning among students outside the classroom.

Personal computers provide students with the capability of collaborating with each other at any time or place (Andriole et al., 1995). This convenience could serve to enhance the frequency, effectiveness, and efficiency of the collaborative process (Alavi, 1994), particularly among commuter students who do not live together on campus and who are often juggling family and work commitments along with their academic schedules. Moreover, it has been argued that electronic technology can better accommodate the collaborative contributions of verbally unassertive students, as well as students with diverse learning styles (Hamm & Adams, 1992).

INSTRUCTIONAL STRATEGIES THAT FACILITATE ACTIVE LEARNING

Given the aforementioned evidence that the lecture method is the predominant method of instruction in the college classroom, use of more student-centered instructional strategies that promote active learning, such as those mentioned in this section, should fill a pedagogical void by exposing students to a distinctive method of instruction that encourages them to take a more active role in the learning process. In particular, if students are encouraged to become be active, self-directed learners at the outset of their college experience--during their very first semester in introductory courses--then they may be predisposed to use this effective learning strategy throughout their college years.

The following recommendations are offered as specific teaching practices for promoting students' active involvement in the learning process, both inside and outside the classroom.

* Encourage active involvement proactively by including a written statement in your course syllabus which explicitly indicates what active student involvement entails (e.g., participation in class via questions, comments and suggestions), and that you value such involvement.

On the first day of class, you can review the syllabus and reinforce this printed statement by verbalizing it to the class. Such a verbal statement should serve to translate the formal, printed policy into a personal invitation for student involvement. You may reinforce it further by telling the class to please let you know if you happen to do anything during the semester that discourages their involvement. Assuming that first impressions are lasting impressions, the delivery of this statement on the
very first day of class could serve to set an invitational tone that will help promote student involvement throughout the semester.

The need for college instructors to explicitly express their desire for student involvement, and to seek feedback about how well they are encouraging it, is highlighted by research indicating that there are large discrepancies between college professors' self-perceptions of their degree of "interaction" and "openness" with students compared with student perceptions of their professors, i.e., teachers tend to perceive themselves as much more open and interactive than their students perceive them to be (Centra, 1973).

* Use effective questioning strategies to elicit student involvement in class.

Research on questioning techniques suggests that there are three key elements of instructor-posed questions: (1) how the instructor's question is phrased (framed) or delivered, (2) the instructor's post-question "pause time" ("wait time"), and (3) how the instructor reacts or responds to students who answer questions. Effective strategies relating to each of these elements of questioning will be discussed in turn.

1. Phrasing (Framing) and Delivery of Instructor-Posed Questions

Andrews (1980) analyzed videotapes of instructors in college classrooms and observed the total number of statements made by students, the total amount of time students talked, and the total number of students who participated in class. He discovered that, in classes with the most active student participation, instructors were more likely to pose (a) higher-order questions—i.e., questions requesting levels of student thinking higher than rote memory (e.g., analysis, synthesis, evaluation), and (b) divergent questions—i.e., questions which allow for a diverse number of correct responses—as opposed to "convergent" questions which ask for one, and only one correct answer (akin to the game, "Trivial Pursuits."). Merlino (1977) also found that teachers who used such higher-order, divergent questions had students who displayed greater comprehension of the concepts being taught and greater satisfaction with their learning experience.

William Welty eloquently expresses the importance of divergent questions for promoting successful class discussions:

If you are having trouble promoting discussion in your classes, examine the kinds of questions you are asking. Do they signal that you know the answer and are asking to see if the students do? Such questions are the kind that promote participation from only those students anxious to show they know exactly what the teacher is looking for. The idea of a discussion is to encourage contributions that aren't necessarily the "right" answer. Most students are programmed to think that there is only one right answer, that the teacher knows it. Such thinking spells doom for a discussion class (1989, p. 42).

It is further recommended that conditional phrasing be used when posing questions (e.g., "What might be . . . ." "What could be . . . ?" "What may be . . . ?"). Such conditional phrasing underscores the diversity of acceptable answers and further minimizes students' fear of not providing "the" correct answer which the teacher is "looking for." This is a very reasonable student fear because, if the instructor conveys the message that there is one and only one acceptable answer, then the odds are clearly against the student.
being right, i.e., there is only one correct answer and a virtual limitless number of unacceptable responses.

The importance of phrasing or framing questions in a manner which increases the likelihood of student response is underscored by research reported by Barnes (1980) which involved videotape analysis of 40 full-time undergraduate faculty at both large and small institutions. She found that the average percentage of total class time which students spent answering instructor-posed questions was less than 4 percent. Her subsequent research indicated that (a) 63% of all teacher-posed questions involved rote memory, (b) 19% involved procedural details, (c) less than 5% were divergent questions, and (d) only 18% of the questions solicited higher-order thinking responses. Predictably, close to 33% of all teacher-posed questions failed to elicit any student response whatsoever (Barnes, 1983). These findings, coupled with the aforementioned results on effective questioning techniques, strongly suggest that low student response rates may be due to the nature and form of the instructors' questions, rather than to the frequently heard complaint about student apathy or unwillingness to get involved.

Thirdly, it is recommended that tentatively-phrased, divergent questions be clearly focused, i.e., tied to a specific concept or issue. For example, "What do you think might account for some of these male-female differences in communication style?" is a focused question. In contrast, a query such as: "Does anybody have any questions or comments?" Chet Meyers points out one major reason why generic, unfocused questions fail to actively involve students:

Merely punctuating [lectures] with pauses for questions will seldom generate classroom discussion. This is because students usually interpret a teacher's asking "Are there any questions?" to mean merely "Was my presentation clear?" Any response will thus be an indication that either the teacher has explained something poorly or the students has not understood. Only the most confident student will say anything in such a context (1986, p. 59).

One final question-framing strategy for promoting active student involvement is to pose questions that place students in a relevant, real-life situation, inviting them to personally apply the concept under discussion. Such questions allow for "situated learning" by providing a relevant situation or meaningful context which students can identify with, thereby increasing their personal interest in the question. For instance, in a learning strategies course or freshman seminar where the topic under discussion is test-taking skills, students could be asked the following question: "Suppose you were just about to take a major exam and you started to experience some symptoms of test anxiety. What could you do right then and there to reduce your tension and regain self-control?"

Kenneth Eble, a distinguished professor and prolific writer in the area of instructional development, succinctly illustrates the involvement-promoting quality of posing personalized questions that situate students in a meaningful context:

Problems and ideas set in personal contexts are probably better ways of getting a discussion started than are broad questions and definitions. "Do you consider yourself a romantic" is better than "What is romanticism?" (1976, p. 62).
The upshot of all these question-framing recommendations is that instructors need to give careful forethought to the type of questions they ask in class. As one instructional development specialist suggests: "You must highlight them [questions] in your outline. You should know exactly what questions, word for word, you are going to ask" (Welty, 1989, p. 42).

2. "Pause (Wait) Time" after Question Delivery

Instructors teaching introductory or survey courses, which are often populated heavily with freshmen, tend to be content-driven and time-conscious because of their concern for covering the typically wide range of topics that comprise a survey class (Erickson & Strommer, 1991). Thus, there may be a natural tendency for instructors to perceive silence as a waste of class time, depriving them of the opportunity to cover more course content. This can lead instructors into the habit of not waiting long enough to allow sufficient time for students to think through questions and plan a thoughtful response before attempting to answer them. Failure to pause long enough may be a signal to students that the instructor's question is merely rhetorical, or that the instructor is more concerned about moving on and covering material than encouraging student participation. Consistent with this concern are research results reported by Pollio (1989), who observed 550 hours of classroom instruction and found that the average post-question pause time for college instructors was only 1.5 seconds.

Longer post-question silence may be necessary to provide students with the requisite "incubation" time needed for higher-order thinking. For instance, Rowe (1974a, 1974b) discovered that instructors who waited at least three seconds after posing a question were more likely to receive a greater number of higher-order student responses. These findings are consistent with Brophy and Good's (1986) review of an extensive amount of research at the precollege level which revealed that a "wait time" of at least three seconds following teacher-posed questions was statistically associated with higher levels of student achievement.

Another advantage of pausing a few seconds after posing a question is that the extra time may result in a larger pool of students who decide to raise their hands. A sensitive instructor can use this opportunity to select from the array of students with raised hands, the one student who has been quiet or passive in class and now has her hand raised for the first time. As Meyers and Jones suggest: "When students have enough time to ponder, they can organize their thoughts for better answers, and some of those reticent students, who are normally not so quick on their feet, may surprise us with an answer if given the time" (1993, p. 31).

3. Instructor Response/Reaction to Student Answers

The following recommendations are offered as strategies for responding to student answers in a manner which reinforces their response and increases the likelihood that they will respond to your subsequent questions.

- If the original question fails to elicit any student response, rephrase the question or provide additional information. Perhaps the original lack of student response was not due to disinterest but to the nature of the question or how it was framed. For instance, the question may have been ambiguously
phrased, or it may have not contained enough background information for students to feel comfortable about risking a response. Empirical evidence supporting the effectiveness of rephrasing unanswered questions and providing additional information has been gathered by Clark, et al. (1979), who found that such practices result in significantly higher rates of student response.

- Make eye contact with students who have been reticent to participate and, if possible, move closer to them when delivering questions. Such nonverbal communication may provide a subtle, but powerful cue that personally invites and encourages previously passive students to become more actively involved.

There is a human element involved in the art of questioning and much of this element is conveyed in a nonverbal manner. A warm demeanor, an inviting smile, and disarming body language can spell the difference between a question that evokes an enthusiastic response or dead silence. Since nonverbal communication is often unconscious, it is strongly recommended that instructors have their behavior videotaped in class and observe their nonverbal communication while asking questions.

- If a reticent student who has not responded in class seems to display nonverbal interest in a question you have posed (e.g., by a head nod or facial expression), solicit her ideas. This can be done in a non-threatening manner by using the student's first name and phrasing your request tentatively as an invitation rather than a command (e.g., "Donna, I think this question seems to have triggered your interest, would you like to share any thoughts you may have?").

Empirical support for this recommendation comes from a study of teaching-award recipients, which reveals that one practice they have in common is calling on students if they thought they had something to say (Lowman, 1995).

- Acknowledge the name of the student who volunteers a response. This serves to affirm the student's individuality and shows the student that you know him as a person. Moreover, continual use of students' names serves to reinforce your memory of their names and increases the probability that students will learn the names of their classmates. This, in turn, should serve to increase the sense of "community" within the classroom and perhaps increase the likelihood that students will interact outside of class. Such peer interaction has been found to contribute significantly to student retention (Astin, 1993).

- Record student ideas on the blackboard. This practice serves to reinforce the contributions of individual students and provides a cumulative record of all contributions—which can later be reviewed or used as a springboard for further student involvement—for example, by asking the class to identify any recurrent themes and/or patterns of variation among the responses.

- Encourage further involvement from students who have volunteered a response by asking them to elaborate or extend their answer via follow-up
questions (e.g., "Can you take that a step further?" "Can you relate your point to . . . ?").

- Encourage the participation of students who have yet to volunteer a response by asking for their reaction to the ideas of other students who have just responded; for example, "Does anyone else agree with what has already been said?" "Does anyone else want to express an opposing point of view?" "Let's hear from some of you who haven't spoken yet."

- Occasionally redirect or deflect questions directed at you to other students in class by asking for volunteers to answer the question. This practice should serve to (a) increase general class participation, (b) show the questioning student how other students can be a resource for learning, and (c) reduce the likelihood that assertive students who ask a lot of questions will be perceived by their classmates as the "teacher's pets."

- If a student's answer to the question is irrelevant or inaccurate, praise some aspect of the response (e.g., its creativity). If nothing about the student's response can be praised without appearing patronizing, then at least praise the effort (e.g., "Thanks for taking a stab at it."). This practice serves to reinforce the student's willingness to take the risk of speaking up which should increase the probability that she will contribute again.

   If a student's comment leads to a discussion that is not relevant to the question under discussion, use "I" and "we" messages to bring the discussion back on track without directly criticizing the individual student. (For example, "I think we've stayed away from the original question, haven't we?").

   The importance of responding positively, not condescendingly, to student input is underscored by research conducted by Mazzuca and Feldhusen (1978) who report that the most common student description of their "least liked" college classes were those in which instructors were "demeaning" and "ridiculing" toward student questions and ideas. As Kenneth Eble suggests: "Enthusiasm for all responses, not just for right answers, is both a courtesy and an incentive" (1988, p. 59).

* Involve all students in class by posing questions that call for a nonverbal response.

   All students can respond simultaneously by a simple show of hands in response to such questions as: "How many of you agree with the following statement . . . ?" or "How many of you had an experience similar to . . . ?"

   Other ways in which students can become involved nonverbally in class include the following:

   (a) Having students vote with their feet by taking a position represented by one of four corners in the room (e.g., each corner representing one of the following choices strongly agree, agree, disagree, strongly disagree).

   (b) Using the center aisle as a dividing line and asking students to move to either side, depending on their position with respect to an issue or debate.

   (c) Using score lines in which all students line up in the order of the scores on an attitude questionnaire or self-assessment inventory.
Such nonverbal exercises have the advantage of involving all students in class, not just those who are most verbally assertive. The exercises also serve as a stimulus to provoke meaningful follow-up discussion; for example, students could be asked why they ended up occupying a particular place or space, or students could be allowed to change their places after a class discussion and then asked why they decided to change.

* Periodically set aside some instructional time for class discussions.*

Research indicates that college courses that involve class discussions are more likely to result in higher levels of student satisfaction and problem-solving ability (Costin, 1972).

The quality of such discussions may be enhanced by use of the aforementioned questioning techniques as well as the following practices.

- Use pre-discussion procedures which stimulate student ideas and to help students focus their thoughts prior to expressing them during class discussion, such as:

  (a) Having students engage in short, thought-provoking reading or writing exercises which could then be used as a springboard for class discussion. For example, prior to a class discussion on diversity, have students read a newspaper article about hate crimes committed on college campuses, or have students write briefly about a personal experience they have may have had as victims or witnesses of discrimination. A major advantage of pre-discussion writing is suggested by Meyers and Jones:

    The quiet time that writing requires encourages participation of those students whose learning style is more reflective and who take a little longer before their brain engages with their mouth. As Garrison Keillor might observe, shy people need more time to compose themselves (1993, p. 61).

    Empirical support for this recommendation is provided by research indicating that students with high "classroom communication apprehension" prefer to know what they will be discussing in advance of the discussion (Neer, 1987).

  (b) Distribute student self-assessment checklists or inventories for the purpose of stimulating self-reflection on issues prior to class discussion (e.g., a self-assessment inventory on learning styles or study habits).

  (c) Use think-pair-share groups whereby students pair up with a partner and share their initial ideas on the topic for 2-3 minutes prior to class discussion.

  (d) Before introducing a new course topic or concept for detailed discussion, have students engage in a short brainstorming exercise during which they share their initial impressions, perceptions, or previously held conceptions about the topic to be discussed (e.g., students rapidly share their associations to the word "stress.").
(e) Before beginning discussion of a sensitive or controversial issue, which is likely to trigger strong disagreements, involve students in a pre-discussion exercise that asks them to brainstorm ways in which people express disagreement in a threatening or hurtful manner. Then have the class suggest specific ways in which these insensitive forms of disagreement can be converted into more constructive expressions of disagreement. Leave these suggestions on the board so they may serve as visible guidelines for the ensuing discussion or, better yet, convert them into a handout which can be used as a reference for all subsequent class discussions during the term.

- To encourage active listening, have a contributing student paraphrase the response of the previous participant to ensure that it was understood and that successive contributions to the discussion remain connected and "on track."

- During class discussions, require students to take notes as they would during a lecture. This practice serves to keep all students actively involved even though they may not be verbally involved in the discussion. These notes can also be used to help students paraphrase the previous student's responses before responding with their own ideas.

* Increase student involvement in the course by soliciting their course perceptions (subjective feelings of course satisfaction) while the class is in progress.

Students' course perceptions could be obtained by means of such practices as (a) administering course evaluations early in the term, (b) establishing an anonymous "suggestion box" or (c) creating a "quality circle"--a small group of students who periodically meet with you to channel input from the class to you and vice versa. Such early feedback strategies not only provide a mechanism for stimulating active student involvement in the learning process, they also allow you to make course improvements before the class is finished, enabling you to rectify student misperceptions before they produce resentful compliance or passive defiance.

* Use case studies to actively involve students with course concepts and issues.

Cases refer to stories, actual events, or fictitious events approximating reality that require decision-making and encourage critical thinking (Christensen & Hansen, 1987). Cases reflect the fact that "real life" is ambiguous and one "right" answer or "correct" solution is not always apparent. Cases have been described as a "`half-finished chess game' . . . the most interesting cases are rich with ambiguity: many solutions are possible but none of them perfect" (Holkeboer, 1995, pp. 1-2). Cases are typically presented in narrative form to students who read them individually and then join teams to react to, and work through, the dilemma that comprises the case.

What all cases have in common, and what qualifies them as an active-learning method, is that they require students to take some action--to make a decision--with respect to the real-life event. This decision-making can be done by students working independently, in small groups, or if the class is
size is small enough, cases may be discussed in a seminar fashion. The level of student involvement with cases can be increased further by asking students to discuss: (a) the cause(s) of the incident, (b) if and how the incident could have been prevented, (c) whether they can identify with the characters in the incident, or (d) whether they have had personal experiences similar to those being depicted in the case.

The role of the instructor in the case method is not to make a choice or take of personal stance with respect to the case, nor to evaluate the correctness of the students' choices. Instead, students make their own decisions and that these decisions are evaluated only in terms of the quality of the arguments used to support them.

Cases relevant to college students can be drawn from a wide variety of sources, including the following:
(a) real-life incidents experienced by the instructor or the instructor's colleagues (e.g., classroom teaching or academic advising experiences with college students);
(b) experiences solicited from students in class (e.g., roommate conflicts, ethical issues involved in sexual relations, or substance use/abuse);
(c) incidents drawn from popular media (e.g., TV, movies, newspaper articles);
(d) case histories relating to controversial events that have taken place on campus in the past;
(e) educational videos which poignantly capture the personal experience of college students; and

A good illustration of the use of cases is the "Tale of Three Students" exercise used at Nassau Community College (New York). This exercise includes three cases involving incidents that actually took place in college classrooms. In the first case, a male student is told by his female psychology professor that he cannot enter her class in a T-shirt bearing a crude sexist remark. In the second case, a male student wearing an earring is barred from his business class by a professor who considers his classroom to be equivalent to his office or home. The third case entails a female student who is informed by her male history professor that women who wear skirts in his class receive higher grades. After reading about these cases, students discuss them in small groups and try to reach a decision on what they think should be the correct course of action (Conway & Goldfarb, 1994).

The use of such cases as an active-learning vehicle has been strongly endorsed by The Carnegie Forum on Teaching:

The outstanding virtue of the case system is that it is suited to inspiring activity, under realistic conditions, on the part of the students; it takes them out of the role of passive absorbers and makes them partners in the joint processes of learning and of furthering learning (National Governors' Association, 1986, p. 1).

Noted instructional development scholars, Bergquist and Phillips, argue further for the use of case studies in introductory courses typically taken by beginning college students, suggesting that:

Case studies enable students to experience the "real world" of decision-
making and problem-solving while the resources (and protective shield) of the academic institution are still available. If presented in a careful and supportive manner, case studies can be quite valuable in the early years of college to help students explore the practical application of ideas and theories often missing in introductory courses (1981, p. 125).

* To actively involve students in the classroom, use role plays, i.e., dramatic enactments or simulations of incidents that college students have likely experienced.

Students can play the role of other people or play the role of themselves. Relevant vignettes involving college students would include such dramatizations as roommate conflicts, peer pressure at a college party, and student-faculty interaction in the classroom or during an office visit. You can use such dramatic illustrations as a stimulus to provoke active student involvement in class, both by having students serve as actors in the skit or as reactors to the skit. Students could also engage in "role-reversals" in which they play opposite or different roles than they do in real life (e.g., a student plays the role of professor or parent; or a majority student plays the role of an under-represented student). Student actors could also reverse roles during the skit.

During the dramatization, the instructor serves as a moderator or facilitator, but mostly as an unobtrusive observer. If a particular scene or interchange happens to elicit a strong audience reaction, the instructor might freeze the action and use it as a "teachable moment" to solicit reactions or questions from the audience. Besides promoting active involvement in the classroom, such role reversals have the additional advantages of (a) increasing students' empathy for the actual person whose role they are enacting and (b) enhancing students' capacity for taking multiple perspectives on an issue or dilemma.

One way to get all students actively involved in preparation for the role play is to give the class a written copy of a case study and divide the class into as many groups as there are characters involved in the case. For example, if the case involves two principal characters, then have half of the class prepare to assume the role of one of the major characters, while the other half prepares to assume the role of the second character. This preparation can take place outside of class time as a take-home assignment and later, during class time, students can be selected to enact these role in front of class. This practice ensures that all students active prepare for the role play, even though only a small percentage of them actually performs it.

Another approach to getting all students involved in the role play is to have all students in class assume the same role—that of an advisory committee or group of "experts" who interact with the instructor—who adopts the role of "novice" (Erickson & Strommer, 1991). For example, the instructor could be a shy freshman who has just arrived on campus and the class serves as a social advisory committee whose role is to suggest specific strategies for meeting new people and getting involved in campus life.

* Utilize short, reflective "writing-to-learn" assignments to promote students' active involvement with course content.
Writing-to-learn assignments differ from traditional writing assignments, such as essays or term papers, in three major ways: (a) They are shorter, requiring less amount of student time to complete. (b) They are written primarily for the benefit of the writer—as an aid to thinking and learning. (c) They do not require extensive instructor commentary, correction, or grading (Tchudi, 1986). These characteristics of writing-to-learn exercises allow them to be used not only as out-of-class assignments, but also as in-class activities (e.g., a small portion of class time can be allotted for students to make journal entries in response to a class presentation or group discussion).

Writing-to-learn exercises are strongly recommended as vehicles for increasing the level of student involvement in the learning process, and they are better suited for first-year students than term papers or formal research reports which require more experience with the subject matter and relevant informational resources (Erickson & Strommer, 1991).

The types of written products that students can generate besides the traditional formal essay, research report, or term paper, include a host of shorter and more informal types of writing-to-learn products, such as those described in the following taxonomy.

1. "Expressive" or "Informal" Writing: Personal writing intended for the writer or for someone who knows the writer well, which serve to externalize the individual's thought process on paper (Britton, et al., 1975; Connolly, 1989). This category would include writing assignments such as the following:

- Reflective Note-Taking: careful notes are taken in response to a lecture or reading which are accompanied by the student's personal reflections on what she heard or read. For example, responding in writing to such questions as (a) What did you already know about this material? (b) What contradicted what you already knew or thought was true? (c) What didn't you understand?

- Learning Logs: extended reflective-writing assignments in which students record their personal learning experiences over a period of time, such as (a) what they think they are learning in a course, (b) how they are learning it, or (c) their personal feelings about the learning process and the progress they are making. At Texas A & M University-Corpus Christi, students enrolled in a freshman seminar use the learning log to connect subject matter from three other courses that are clustered with the freshman seminar (Durrwachter, Jackson, & Spencer, 1996).

- Microthemes: brief, focused writing assignments (short enough to fit on a 5X8 notecard) that require students to take a personal position or offer a personal interpretation. For instance, (a) "thesis-support" microthemes require students to choose from one of two contradictory propositions or theses and to write a microtheme defending that position; and (b) "data-provided" microthemes require students to write a paragraph that describes their interpretation of data represented in a chart or table.
- **Letters**: (for example, a letter to a peer or friend offering advice on how to solve particular college-adjustment problems, or a letter to the student body president relating to a college life issue being discussed in class).

- **Freewriting**: quickly recorded thoughts, feelings, or free associations on a topic or subject that are generated with little regard for mechanics (e.g., feelings or anxieties about math; warm-up exercises to think about and focus a topic). Freewriting can also be done in response to a "seed sentence"—an incomplete, provocative sentence, such as: "The three most important concepts addressed in today's assignment were . . ." "I didn't understand . . ." "The main problem I had when . . .").

- **Lists**: (for example: listing source of pleasure, pet peeves, personal strengths, unique features, strongly-held attitudes or values, personal habits or interests).

- **Attitudinal Writing**: reflective writing assignments designed to help students discover personal feelings that may be affecting their learning (e.g., "What is proving to be most difficult or frustrating for you at this point in your college experience?").

- **Writing to Read**: paraphrasing or summarizing the text; or using double-entry notebooks, students describe in writing what an author says in one column and then react to the author's comments in an adjacent column. (Research indicates that writing in response to reading promotes learning and critical thinking [Applebee, 1984]).

- **Writing to Discuss**: Prior to engaging in class or small-group discussion, students gather their thoughts in writing before sharing them verbally.

- **Intellectual Diary**: using two columns, students note what they are learning in one column, and use the other column to record their ideas on how they are learning it or what they feel is most significant about what they are learning.

- **Creating Problems**: students' define a problem or issue of their own by submitting it in writing, thus providing them with an alternative to answering the usual instructor-posed or textbook-posed questions.

- **Minute Papers**: very short writing assignments (taking one-minute or less to complete) which encourage students to react to a particular learning experience, and which prompt personal reflection by the learner and providing useful feedback for the instructor. For example, at the end of class, students take a minute to answer a question such as: "What was the most significant or surprising thing you learned in class today?"

  The minute paper is perhaps the most popular writing-to-learn assignment in higher education; at Harvard University alone, minute papers have been used in more than 200 courses (Marchese, 1992). One reason for the minute paper's popularity is that it is the least time-consuming and labor-intensive writing-to-learn strategy. It also is a very versatile writing tool that can
be adapted to fulfill a number of different instructional functions, such as the following:
(a) To diagnose student misunderstandings of key course concepts before they appear on exams and result in lost points and lowered grades.
(b) To provide closure to a class session and to focus student attention on the major point or issue which was addressed. (There are a number of research studies indicating that, if at the end of a class period, students engage in a short review of the material just presented, they retain almost twice as much factual and conceptual information when tested two months later [Menges, 1988]).
(c) To reinforce class attendance and student attentiveness while in class. If students know they will be held accountable for answering a question about the day's material, they are more likely to come to class, take notes actively while in class, and stay for the duration of the class period—especially if the minute papers are counted in the evaluation of students' course participation and the determination of their course grades.
(d) To serve as a conceptual bridge between successive class periods. For instance, at the beginning of class, a quick review of student responses to a minute paper answered at the end of a previous class can provide and effective segue between successive class sessions.

Minute papers can also be assigned at the beginning of class which require students to review their notes from the last class and answer a question about previously discussed material. Used in this fashion, the minute paper serves as a stimulus for activating students' recall of previously learned material, which can be built upon for better understanding of information which is about to be presented. Another advantage of an occasional minute paper given at the start of class is that it can serve as an incentive to promote punctuality and reduce tardiness.

- Journals: recording of reflections on, or reactions to, personal experiences over an extended period of time. For example, after tests are returned during the semester, students record their personal reactions to the grades they received; or, after listening to a series of class presentations chapters, students record their immediate thoughts and feelings.

Faculty who have assigned and read student journals often report anecdotally that students are more apt to be honest and forthcoming about their personal feelings when they express them in writing rather than in person.

Journals can also be used as an incentive to promote use of effective learning strategies, such as weekly journals kept by students in which they describe how they have applied effective learning strategies that have been discussed in class. One learning skills specialist who uses journals in this fashion reports: "When the students know they have to write about how they used the strategies, they are more motivated to use them" (Van Blerkom, 1995, p. 3).

Since one distinguishing feature of journals is that they are written entries made over an extended period of time, students are left with a chronological record of their thoughts and feelings. This written record can be checked to identify patterns of continuity or change that may provide students with a window for self-insight with respect to their personal
development. To ensure that this distinctive advantage of journals is realized, students could be given guiding questions or specific prompts which explicitly encourage them to review their journals with a focus on assessing patterns of personal consistency or variation that have occurred across time.

2. "Transactional" Writing: Public writing intended to be read by someone other than the writer, for purposes of informing, reporting, explaining, or persuading (Britton, et al., 1975; Tchudi, 1986). This category embraces the following types of writing assignments:

- **Summaries** (e.g., summarize a lecture as if responding to a student who missed it and wants to know what was covered).
- **Written Questions** (e.g., questions written in response to homework, or in preparation for guest speakers).
- **Explanations** (e.g., explaining the thought process used in solving a problem; explaining why a statement is true or false).
- **Persuasive Letters** (e.g., letters to a newspaper editor, an elected official, a college administrator; or a letter to incoming freshmen) that offer persuasive advice on things to do and to avoid if they want to have a successful college experience).
- **Critical Reviews** (e.g., reviews of books, films, TV programs, or theatrical productions).
- **Editorials or Feature Articles** (e.g., editorials or articles written for the college newspaper).
- **Scripts** (e.g., to be used for role plays to be enacted in class or for dramatic vignettes to be videotaped outside of class as group projects).
- **Imaginary Dialogues** (e.g., students construct imaginary conversations with people who they would like to meet, living or dead, real or fictional).
- **Directions or "How to" Guides** (e.g., college-survival manuals; guides on how to improve personal performance on academic or other college-related tasks).

**Incorporate assignments that stimulate students' active involvement in co-curricular activities and which serve to integrate in-class with out-of-class learning experiences.**

For instance, if "Alcohol Awareness Week" is being promoted on campus, attempt to construct a meaningful class assignment that encourages students to forge connections between your course content and the week's activities. Research in higher education has revealed that the connection between co-curricular experiences and classroom learning is very weak (Heller, 1988). Faculty, in particular, have been found to pay little attention to student life outside the classroom and give very minimal support to extracurricular learning experiences (Boyer, 1987). This is a particularly disturbing finding when viewed in light of the wealth of research indicating that student involvement in campus life has a powerful impact on student retention and the development of students' interpersonal skills and leadership qualities (Astin, 1993; Pascarella & Terenzini, 1991).

Class assignments could even be devised which involve students as campus researchers. For instance, students could be given assignments that ask them
to become "participant observers" of co-curricular life on campus (e.g. conducting observational field studies of student behavior in a campus residence), and acquire qualitative data that may be useful for institutional research. At Ohio University, first-year students participate in "historical research projects" whereby they create oral histories by interviewing alumni and search campus archives for biological information on persons for whom campus buildings have been named (Barefoot & Fidler, 1992). Likewise, Wheelock College (Boston) involves freshman seminar students in qualitative research on its campus organizations (Barefoot & Fidler, 1996).

If students are given this type of assignment with the instruction that their completed reports are to be submitted to those in charge of the campus organizations or functions being researched, then the report can be written for a "real world" client or audience. One college instructor, identified as an outstanding professor by both students and administrators at his college, does this by having his students meet with top-level administrators to ask them about current evaluation or information needs on campus. Students then conduct small-scale evaluation projects that they submit as a research report to the course instructor and the administrator (client) for whom it was intended. This instructor reports that, "you get better results from students if they feel there is a real audience for their ideas" (Davis, Wood, & Wilson, 1983, p. 215).

Assignments can also be crafted which promote students' off-campus community involvement and service learning. Having students write or make verbal presentations about their community experiences in the course ensures that these experiential activities are transformed into legitimate academic credit-earning assignments. As Guskin points out:

> Service activities provide settings in which ideas can be tested through direct experience. Such off-campus activities, which enable students to apply ideas or experience new environments, are important but do not necessarily emphasize reflection and conceptual development. What converts these experiences into a setting for conceptual development is reflecting on the experience itself through the written word and/or presentations to, and reflection with, others (1994, p. 24).

If you do not feel comfortable requiring student involvement in co-curricular experiences, consider allowing an extra-credit option for students to attend and write reaction papers or reports on co-curricular events that relate to the course (e.g., a campus speaker whose presentation may dovetail with one of your course objectives). Or at the very least, attempt to encourage participation in campus events by reminding students of their occurrence. Just taking a few seconds of class time to announce upcoming events may serve to increase student involvement. One instructor routinely takes a few minutes at the start of class to announce educationally significant, out-of-class events that are about to take place on campus and in the local community. She reports that this practice has not only promoted students' attendance at such events, but also has resulted in students' being more vigilant about searching for interesting events on their own and announcing them in class (Stephanie Vandrick, University of San Francisco, personal communication,
January 1996). Students could also be encouraged to use campus and community resources in their research and writing assignments.

Finally, *faculty attendance* at campus events serves to model the importance of active involvement in campus life and may increase the likelihood that students will follow suit. If they do emulate your behavior, you will have served as role model for behavior that should contribute significantly to their retention.

* Use *course-linking strategies* for more intensive development of learning skills being developed in your course, or to extend the active application of these skills to content covered in other academic disciplines.

One curricular approach that could be used to further realize the goal of improving students' learning skills is the "course linking" strategy. To implement this curricular strategy, students in your class co-enroll in another academic skill-development course with a similar enrollment cap (e.g., English Composition or Speech); then the content of your course assignments are coordinated with the skill-development activities taking place in the linked course. For instance, students may use concepts discussed in your course as topics for writing assignments in their linked English course, or as topics for oral presentations in their linked Speech course. This curricular strategy is used at the University of Maryland-Baltimore County, where a one-credit orientation seminar and a three-credit English composition course are taught on separate days; however, students co-register for both of these courses so they become linked as a single four-credit class (Barefoot & Fidler, 1992).

You, too, could implement this course-linking strategy by simply coordinating your syllabus with that of another instructor who is teaching a skill-building course of similar class size, and by ensuring that students enroll simultaneously in both of these courses during registration. (This can be facilitated by having the co-enrollment requirement listed next to both courses in the printed schedule of classes so that students are fully aware of the need to register for both courses simultaneously).

At Temple University, campus-specific research on first-year students who have enrolled in core (general education) courses that have been linked with a freshman seminar reveal that participating students achieve higher GPAs, have higher course completion rates, and have higher first-semester retention rates than freshmen who do not enroll in linked courses (Hoffman, 1994).

Middlesex Community College (NJ) has extended the strategy of course linking by coupling its freshman seminar with two or three other courses to form the following "course clusters": (a) "Liberal Arts cluster" (Freshman Seminar + English Composition + Introduction to Psychology), (b) "Business cluster" (Freshman Seminar + Introduction to Computers + Introduction to Business), and (c) "Liberal Studies cluster" for developmental students (Basic Writing + Fundamentals of Math + Reading Strategies). Using a "block registration" format, the same cohort of freshmen enroll in all courses that comprise the cluster, thus creating an interdisciplinary "learning community" of first-year students who share a common course schedule (Levitz, 1993).
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