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**A Berkeley Compendium of Suggestions  
for Teaching with Excellence**

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#### Section One: Discussing Points of View Other Than Your Own

1. Select a textbook that opposes your lectures' perspective (Number 1)
2. Assign readings to represent a variety of viewpoints (Number 2)
3. Present each of several competing theories (Number 3)
4. Invite guest speakers with differing viewpoints (Number 4)
5. Draw upon the diverse backgrounds of your students (Number 5)
6. Use student opinion to create a microcosm of current issues (Number 6)

#### Section Two: Discussing Recent Developments

1. Telephone colleagues conducting state-of-the-art research (Number 7)
2. Require students to read current journal articles (Number 8)
3. Require students to read current newspapers or periodicals (Number 9)
4. Share your professional "junk mail" with your students (Number 10)
5. Let your students know about relevant events and resources (Number 11)

#### Section Three: Giving References

1. Distribute a bibliographic list on each major topic (Number 12)
2. Prepare two lists of references for each course topic (Number 13)

#### Section Four: Emphasizing Conceptual Understanding

1. Give students a conceptual framework (Number 14)
2. Focus your course on the classic issues and concepts (Number 15)
3. Stress the most enduring values or truths (Number 16)
4. Repeatedly touch base with the fundamentals or basics (Number 17)
5. Model processes of deductive or inductive reasoning (Number 18)
6. Pose paradoxes for students to solve (Number 19)
7. Divide your course into parts (Number 20)

#### Section Five: Explaining Clearly

1. Focus your lectures on a few main points (Number 21)
2. Carefully define all concepts and terms (Number 22)
3. Rephrase explanations of major points several times (Number 23)
4. Use lots of concrete or memorable examples (Number 24)
5. Demonstrate (rather than describe) a concept or idea (Number 25)
6. Empathize with students' difficulties in learning (Number 26)
7. Acknowledge the difficulty of certain concepts (Number 27)

#### Section Six: Being Well Prepared

1. Keep a set of cumulative notes for each course topic (Number 28)
2. Keep a journal (Number 29)
3. Completely rework your lecture notes (Number 30)
4. Review several textbooks for each lecture topic (Number 31)
5. Use an abbreviated set of lecture notes (Number 32)
6. Reread the texts assigned to students (Number 33)
7. Prepare handouts of the outline and important details (Number 34)
8. Prepare a detailed course syllabus (Number 35)
9. Teach the same course in a subsequent semester (Number 36)
10. Audit the same or related courses taught by colleagues (Number 37)

#### Section Seven: Giving Lectures That Are Easy to Outline

1. Let students know what you're going to discuss and why (Number 38)
2. Write an outline on the blackboard before you begin (Number 39)
3. Give students a list of questions (Number 40)
4. Outline your lecture on the blackboard as it develops (Number 41)
5. Structure a lecture as you would a journal article (Number 42)
6. Use "closed lists" whenever possible in your lectures (Number 43)
7. Organize your lectures into 10-minute segments (Number 44)
8. Schedule a break if your class exceeds one hour (Number 45)

9. Pay attention to your boardwork (Number 46)

### Section Eight: Summarizing Major Points

1. Begin and end your lectures with a summary statement (Number 47)
2. Use the blackboard for effective summarization (Number 48)
3. Begin with a brief summary of the last meeting (Number 49)

### Section Nine: Identifying What You Consider Important

1. Call attention to the most important ideas (Number 50)
2. Explain or demonstrate why a particular point is important (Number 51)
3. Indicate the relative importance of ideas (Number 52)
4. Use dramatic pauses and repetition (Number 53)

### Section Ten: Encouraging Class Discussion

#### Part One: Integrate Discussion Into Your Lectures

1. Divide your lecture into blocks of time (Number 54)
2. Make one of the lecture periods a discussion section (Number 55)
3. Move around the room to promote discussion (Number 56)

#### Part Two: Respond to Student Questions

1. Redirect student questions (Number 57)
2. Paraphrase student questions (Number 58)
3. Postpone student questions (Number 59)
4. Admit when you don't know the answer (Number 60)
5. Understand why students repeat the same questions (Number 61)

#### Part Three: Help Students Prepare for Discussion

1. Explain the purpose of discussion (Number 62)
2. Create an appropriate physical setting for discussion (Number 63)
3. Identify discussion questions/issues in advance (Number 64)
4. Have students read different books and journal articles (Number 65)
5. Use an assignment as a basis for discussion (Number 66)
6. Use an opinion questionnaire as a basis for discussion (Number 67)
7. Assign students specific leadership responsibilities (Number 68)
8. Begin with common experiences (Number 69)
9. Divide the class into smaller groups (Number 70)
10. Prompt discussion through the use of key phrases (Number 71)
11. Try brainstorming techniques (Number 72)

#### Part Four: Sustain and Focus Discussion

- 1.Encourage heated debates (Number 73)
- 2.Intercede if the discussion breaks down (Number 74)
- 3.Keep notes during discussion (Number 75)
- 4.Assign students responsibility for summarizing major points (Number 76)

#### Section Eleven: Inviting Students to Share their Knowledge and Experiences

- 1.Call on students who might provide an interesting viewpoint (Number 77)
- 2.Introduce students to the good work done by their peers (Number 78)
- 3.Require students to bring examples of previous work to class (Number 79)
- 4.Encourage students to apply their backgrounds (Number 80)
- 5.Encourage students to make presentations to the class (Number 81)

#### Section Twelve: Inviting Criticism of Your Own Ideas

- 1.Explicitly point out alternative points of view (Number 82)
- 2.Encourage students to take a different approach from yours (Number 83)

#### Section Thirteen: Knowing If the Class Is Understanding You

##### Part One: Get and Use Feedback

- 1.Increase your eye contact with students (Number 84)
- 2.Ask students if they understand what you are saying (Number 85)
- 3.Call on students to paraphrase or to summarize (Number 86)
- 4.Begin your lecture with a series of questions (Number 87)
- 5.Ask questions during lecture (Number 88)
- 6.Give students problems to solve during class time (Number 89)
- 7.Reserve the last 10 minutes of class for questions (Number 90)
- 8.Give frequent assignments (Number 91)
- 9.Give frequent quizzes (Number 92)
- 10.Schedule an oral quiz with each student (Number 93)
- 11.Schedule individual appointments with students (Number 94)
- 12.Assign "minute papers" at the end of class (Number 95)
- 13.Use index cards to get feedback (Number 96)
- 14.Ask students to define, associate or apply concepts (Number 97)
- 15.Use a question box to solicit comments or problems (Number 98)
- 16.Periodically borrow students' lecture notes (Number 99)
- 17.Encourage students to form study groups (Number 100)
- 18.Establish a Liaison Committee (Number 101)
- 19.Install a telephone "hotline" (Number 102)
- 20.Attend or lead lab or discussion sections yourself (Number 103)
- 21.Have students turn in their lecture notes (Number 104)

##### Part Two: Evaluate Instruction

1. Hand out short questionnaires to get feedback (Number 105)
2. Have students send you a telegram evaluation (Number 106)
3. Have TIES conduct an oral evaluation with your students (Number 107)
4. Videotape your class (Number 108)
5. Respond visibly to student suggestions and criticisms (Number 109)

#### Section Fourteen: Having Students Apply Concepts

1. Have students solve problems at the board (Number 110)
2. Use the Socratic method (Number 111)
3. Pose a question and call on a student to answer (Number 112)
4. Provide students with time to think about an answer (Number 113)
5. Probe for adequate answers from students (Number 114)
6. Answer a question with a question (Number 115)

#### Section Fifteen: Giving Personal Help to Students

1. Schedule specific topics for office hours (Number 116)
2. Give a diagnostic test at the beginning of the semester (Number 117)
3. Provide self-instructional materials (Number 118)
4. Fill in the cultural gaps with handouts (Number 119)
5. Require below "C" level students to see you (Number 120)
6. Meet regularly with each student who does poorly on exams (Number 121)
7. Integrate weaker students into the class through group work (Number 122)
8. Refer students to the Student Learning Center (Number 123)

#### Section Sixteen: Relating to Students

##### Part One: Get Acquainted

1. Have students fill out a background questionnaire (Number 124)
2. Pair students up to introduce each other (Number 125)
3. Have students do a structured exercise (Number 126)
4. Enter the class from the same door as the students (Number 127)
5. Provide a relaxed informal atmosphere (Number 128)
6. Host an informal social gathering for your students (Number 129)
7. Invite students to lunch (Number 130)

##### Part Two: Learn Students' Names (Suggestions 131-136)

1. Ask students their names whenever possible (Number 131)
2. Use index cards as a mnemonic device (Number 132)
3. Post students' names prominently (Number 133)
4. Make a game of learning students' names (Number 134)
5. Arrive at class 10 minutes early to talk with students (Number 135)

6. Consciously use students' names whenever possible (Number 136)

#### Section Seventeen: Being Accessible Outside of Class

1. Keep some time free after class to talk with students (Number 137)
2. Go to class before it begins (Number 138)
3. Give out your home phone number (Number 139)
4. Keep your office door open as much as you can (Number 140)
5. Do some of your own work in your campus office (Number 141)

#### Section Eighteen: Having an Interesting Presentation Style

1. Relate the course material as a story (Number 142)
2. Begin with an incident, example or anecdote (Number 143)
3. Focus lectures around a common object or event (Number 144)
4. Open with gusto and finish strong (Number 145)
5. Focus on five or six different students around the room (Number 146)
6. Exaggerate everything about your presentation (Number 147)
7. Begin your lecture with a joke of the week (Number 148)
8. Vary the pace and instructional activities of the course (Number 149)
9. Invite guest speakers to your class (Number 150)

#### Section Nineteen: Varying Speed and Tone of Voice

1. Make diagnostic and practice audiotapes (Number 151)
2. Use the blackboard as a brake (Number 152)
3. Color-code your lecture notes (Number 153)
4. Vary the pitch or inflection of your voice (Number 154)
5. Practice communication skills in front of a mirror (Number 155)
6. Build deliberate pauses into your lectures (Number 156)
7. Use students to monitor your presentation (Number 157)
8. Wear a microphone to talk to the back row (Number 158)

#### Section Twenty: Motivating Students' Best Work

##### Part One: Identify the Knowledge and Skills Students Bring

1. Give a nongraded assignment during the first week (Number 159)
2. Review student transcripts (Number 160)
3. Review students' work examples (Number 161)

##### Part Two: Give Students Skills and Knowledge to Do Well In Class

1. Orient new students to the University, the dept. and course (Number 162)
2. Give a mini-lecture on how to write a paper (Number 163)
3. Give a mini-lecture on how to read a book (Number 164)

4. Hold an outside review session every two weeks (Number 165)
5. Devote the last day of class to an overall review (Number 166)
6. Correct students' speaking errors (Number 167)
7. Emphasize how to learn from one's mistakes (Number 168)

#### Part Three: Develop Positive Relationships With Students

1. Make personal contact with individual students (Number 169)
2. Individualize instruction as much as possible (Number 170)
3. Treat students like colleagues (Number 171)

Model your own high standards to students (Number 172)

### Section Twenty-one: Giving Interesting Assignments

#### Part One: Give Students an Opportunity to Do Well on Assignments

1. Give a brief early assignment (Number 173)
2. Require frequent short assignments (Number 174)
3. Replicate assignments covering basic concepts (Number 175)
4. Give students options in selecting assignments (Number 176)
5. Give students a choice of substituting a paper (Number 177)
6. Schedule individual appointments with students (Number 178)
7. Use a structured process to help students (Number 179)

#### Part Two: Challenge Students With Stimulating Activities

1. Set up student panels (Number 180)
2. Use classroom debates (Number 181)
3. Create opportunities for role playing (Number 182)
4. Ask students to give oral presentations (Number 183)
5. Use case studies and simulation techniques (Number 184)

#### Part Three: Challenge Students With Stimulating Assignments

1. Give provocative assignments (Number 185)
2. Do assignments for "real world" clients (Number 186)
3. Give students field experience assignments (Number 187)
4. Give assignments typical of the field (Number 188)
5. Assign independent research projects (Number 189)
6. Assign analysis of an essay or article (Number 190)
7. Give role-playing assignments (Number 191)
8. Give exercises for problem visualization and approximation (Number 192)

### Section Twenty-two: Giving Exams Demonstrating Student Understanding



1. Use test questions similar to those used in homework (Number 193)
2. Prepare students for challenging test questions (Number 194)
3. Ask specific questions (Number 195)
4. Balance the difficulty of test items (Number 196)
5. Include an extra credit problem to write a question (Number 197)
6. Hand out study and review questions before the exam (Number 198)
7. Hold review sessions before the exam (Number 199)
8. Permit students to bring in one page of notes (Number 200)
9. Give two or more midterms and have the first one early (Number 201)
10. Distribute sample answers to past exams (Number 202)
11. Give more quizzes than count (Number 203)

#### Section Twenty-three: Keeping Students Informed of Their Progress

1. Return tests and assignments at the next class meeting (Number 204)
2. Discuss solutions or answers to tests and assignments (Number 205)
3. Hand out or post solutions as soon as work is turned in (Number 206)
4. Return a "perfect" exam along with the corrected exam (Number 207)
5. Make extensive constructive comments on student work (Number 208)
6. Have students peer-edit each other's work (Number 209)
7. Have students keep a logbook of their progress (Number 210)

#### Section Twenty-four: Making the Most Effective Use of Teaching Assistants

1. Guide, train and supervise Teaching Assistants (Number 211)

#### Section Twenty-five: Developing an Impressive Introductory Large Lecture Course

1. Implement good practices in teaching large lecture courses (Number 212)

## ACKNOWLEDGMENTS

The suggestions included in this compendium, with few exceptions, are the contributions of more than 150 members of the faculty of the University of California, Berkeley. These faculty members, who included over one-third of the past recipients of the Distinguished Teaching Award, freely opened their classrooms to evaluation by the project staff and gave generously of their time, their experience, and their ideas for teaching with excellence. It is to them that our greatest debt of thanks is owed.

We would also like to thank the Academic Senate Committee on Teaching, whose many members over the past two decades have worked to promote excellence in teaching through their annual program of Distinguished Teaching Awards. The existence of an already-identified pool of excellent teachers in a wide variety of disciplines played an important role in the decision to develop the compendium. On a campus with more than 1500 faculty members, our research would have been difficult indeed if it had not been for the Committee's work in recognising these talented and dedicated teachers.

For their moral and financial support, special thanks to Watson M. Laetsch, Vice Chancellor for Undergraduate Affairs, and to Professor Carol D'Onofrio, past chairperson of the Council on Educational Development and Faculty Assistant to the Vice Chancellor.

We wish to also acknowledge and thank the Systemwide Administration of the University of California for the grant which we received in support of the development of the compendium during the final two years of the Teaching Evaluation and Consultation project. Our sincerest gratitude to David Douglas, who with patience and good humour nurtured the suggestions through the many UNIX revisions which finally culminated in this compendium. Our thanks to Nina Silber who provided skilful assistance in the final copy-editing stages. Kate Caldwell and Kay Iwata also contributed to the production of the final version. Over the years, many other TIES staff members provided valuable assistance to the overall project: Daniel Finnegan, Linda Moulton, and Dale Harrington--working seriatim--developed many useful computer programs for the evaluation component of the project. Our thanks also to Terry Richards and Marjorie Borland who provided many support services during the course of the project.

Although they were not directly involved in the project, we would also like to acknowledge our debt to Professor Milton Hildebrand (UCD) and Professor Evelyn R. Dienst (formerly UCSF and currently at the California School of Professional Psychology) for their earlier research on evaluating teaching, conducted with Robert C. Wilson. The evaluation form included in this compendium is based on that research. Our thanks also to Professor Keith Jacoby (formerly at UCSF) whose initial model for consulting with faculty about teaching improvement became the impetus for the overall project. Information on the Hildebrand, Wilson, Dienst and the Jacoby studies can be found in the following publications:

Hildebrand, M., Wilson, R.C., and Dienst, E.R. Evaluating University Teaching. University of California, Berkeley: Center for Research and Development in Higher Education, 1971.

Jacoby, K.E. Behavioral prescriptions for faculty based on student evaluations of teaching. American Journal of Pharmaceutical Education, (40) 1976, 8-13.

## SOURCE OF THE SUGGESTIONS

The 212 suggestions presented in this compendium were, with few exceptions, contributed by members of the faculty of the University of California, Berkeley. Most of the suggestions were gathered from recipients of the Distinguished Teaching Award given annually by the Academic Senate Committee on Teaching. The process used in collecting the suggestions was as follows:

- (1) With the permission of the faculty members, students in their classes were asked to complete an end-of-course teaching evaluation form (similar to that shown in Appendix A);
- (2) These data and student open-ended comments were analysed and five or six of the items which students said were most descriptive of a teacher were selected as the basis for an interview;
- (3) Faculty members were asked to describe the specific, concrete things that they did which may have led their students to say that these items were very descriptive of their teaching;
- (4) These suggestions then formed the basis for consulting with individual faculty members about ways of improving their teaching in a special three-year project;
- (5) From a pool of over 450 suggestions, those with widest applicability were selected and edited for inclusion in this compendium designed to be a reference tool that could be used by a consultant or by a faculty member directly.

## **BERKELEY TEACHING TIPS**

### **Organisation of the Suggestions**

There are 23 primary sets of suggestions: each set corresponds with an aspect of teaching commonly included on student end-of-course evaluation forms. For example, the suggestions in Section 5 relate to the student evaluation item, "Explains clearly." If you want to improve the clarity of your explanations, the suggestions presented in this section would be of particular interest. Two additional suggestions are compilations of points related to course development, instructional techniques, and the use of Tas. The 25 sections are listed in the Table of Contents; corresponding items on the particular student evaluation questionnaire used in collecting the suggestions appear in Appendix A and a parallel self-evaluation form appears in Appendix B.

Each suggestion is presented in the same format, one to a page. It begins with "If You Want To" followed by one or more desired outcomes, the first of which corresponds to the specific section topic. A one-sentence description of the suggestion is then presented, giving the essence of the idea. Following the shorthand description are one or more paragraphs which elaborate the suggestion in terms of its logistics, rationale, and origin. At the bottom of the page possible limitations on the use of the suggestions are noted.

Most of the suggestions in the compendium can be implemented quickly with little or no changes in teaching style or activities. Some require careful planning and modification of course structure or format. In all cases, the suggestions are meant to be stimuli for thinking about teaching, not pat answers or panaceas.

We recognise that there is more than one way of teaching well. Therefore, the ideas presented in the compendium offer a range of effective strategies for improving teaching from which an instructor can select those which best suit his or her teaching style as well as the course level, size, and content. With judicious selection and adaptation, both novices and experienced teachers can augment their teaching strengths, correct or ameliorate their teaching weaknesses, and greatly expand their repertoire of teaching techniques to respond to new teaching situations.

## HOW TO USE THE COMPENDIUM

Presented as a series of suggestions for improving teaching, this compendium describes more than 200 teaching techniques that faculty members have found to be effective in their courses at the University of California, Berkeley. Taken together, these suggestions cover the major aspects of college and university teaching from planning and preparing courses to presenting material and motivating students to giving and getting feedback on learning.

The compendium is designed to be a reference tool to help you improve certain aspects of your own teaching; it is not a narrative discourse on teaching meant to be read in a linear fashion. Therefore, it is recommended that you begin by reading the initial menu and skimming the Index in order to locate those sections or particular suggestions of greatest interest to you.

After you have become generally familiar with the contents of the compendium, five steps are recommended for its most effective use as a reference tool for improving teaching.

First, fill out the 23 item self evaluation form in Appendix B to help identify those aspects of teaching which you may wish to improve.

Second, review data from prior student evaluations of your teaching to identify additional areas for improvement.

Third, use the menus to locate those sections of greatest interest to you and read the suggestions within each of those sections, noting whether the particular suggestion could be adapted to your class.

Fourth, use the Index to locate additional suggestions of interest. Many of the suggestions affect more than one aspect of teaching; these are cross-referenced in the Index. In addition, suggestions relating to very specific teaching techniques (e.g., simulations or guest lecturers) can be readily found in the Index.

Fifth, once you have found suggestions that you want to try in your own teaching, be sure to make a note of them in or alongside your lecture notes so that you do not forget to employ the suggestions at appropriate points in your class.

## BERKELEY TEACHING TIPS

### Section One: Discuss Points of View Other Than Your Own (1-6)

#### **Suggestion Number: 1) Select a textbook that opposes your lectures' perspective**

##### IF YOU WANT TO:

- Discuss points of view other than your own
- Contrast implications of various theories
- Stimulate students to think critically

##### YOU MAY WISH TO CONSIDER:

Selecting a textbook which presents one theoretical perspective or point of view and building your lectures around an opposing set of ideas.

A professor of economics, for example, assigns a textbook that represents the point of view of liberal economists, but designs the lecture presentations around the opposing views of leading conservatives or radicals.

In addition to assuring a balanced presentation, this approach adds variety and interest to the course and stimulates students to think critically. Because the lecture material complements rather than repeats the textbook, it has the added benefit of increasing attendance at lecture.

##### Limitations on Use of Suggestion

Discipline: Subjects with opposing views

Course Level: None

Course Size: None

Mode: Lecture/discussion

#### **Suggestion Number: 2) Assign readings to represent a variety of viewpoints**

##### IF YOU WANT TO:

- Discuss points of view other than your own
- Contrast implications of various theories

##### YOU MAY WISH TO CONSIDER:

Assigning multiple readings to represent a variety of viewpoints.

"Because the most controversial issues covered in the course are ones on which the students have strong opinions but little information, I try to expose them to diametrically opposite positions or theories," says one professor of political science.

A professor of business administration adopts the same strategy. "I use the semi-Socratic technique to lead the students through an analysis and critique of each theorist's position. The focus is not on opinions but the reasons behind them. Sometimes my own view is apparent, either explicitly or implicitly; other times it is not."

Limitations on Use of Suggestion:

Discipline: Subjects with opposing views  
Course Level: None  
Course Size: None  
Mode: Lecture/Discussion

### **Suggestion Number: 3) Present each of several competing theories**

IF YOU WANT TO:

- Discuss points of view other than your own
- Contrast implications of several theories

YOU MAY WISH TO CONSIDER:

Presenting each of several competing theories as if you were an adherent of that position.

A professor of psychology introduces three major approaches or schools of thought in the field. "I discuss each one historically and contrast the basic elements and implications of each," he says. "I really don't have a point of view in this course. There is so little known with impartial certainty; I don't think one is justified in taking a position at this time. Therefore, I present the best case for each theory, then analyse each critically and comparatively."

Even though they do have a distinct point of view, several other excellent teachers report that they also present the best case for each of several competing theories before they reveal their own preferences.

Limitations on Use of Suggestion

Discipline: Subjects with opposing views  
Course Level: None  
Course Size: None  
Mode: None



**Suggestion Number: 4) Invite guest speakers with differing viewpoints**

IF YOU WANT TO:

- Discuss points of view other than your own
- Vary the format of your presentation

YOU MAY WISH TO CONSIDER:

Inviting guest speakers whose viewpoints differ from your own.

A professor of education makes a point of doing this in his courses so that students are exposed to a variety of positions. "I want them to understand what the different points of view are, and one of the best ways I have found to do that is to invite a colleague or practitioner, whom I know to be an adherent of each view, to make a presentation to the class."

See also suggestion 150 for tips on the most effective ways to use guest speakers in the course.

Limitations on Use of Suggestion

Discipline: Subjects with opposing views

Course Level: None

Course Size: None

Mode: None

**Suggestion Number: 5) Draw upon the diverse backgrounds of your students**

IF YOU WANT TO:

- Discuss points of view other than your own
- Invite students to share their knowledge and experiences
- Get to know students

YOU MAY WISH TO CONSIDER:

Drawing upon the diverse backgrounds and experiences of your students to introduce different points of view.

At the beginning of the term, a professor of business administration asks students to provide written answers to a series of questions about their backgrounds and reasons for taking the course. The questions cover topics such as: students' work experience, term papers of research projects,

voluntary activities, personal experiences, and extracurricular interests. He asks students to focus particularly on any experiences which might give them a particular viewpoint on social, political, and economic issues to be covered in the course.

In conjunction with a seating chart he calls on students whose prior experiences or interests may be relevant to a given topic under discussion. In this way a full range of views is introduced in the course. "Often, with little or no effort, I am able to get students debating between themselves. In fact, I rarely give my own point of view until there has been a full discussion of the different points of view within the class itself."

This technique has additional advantages: the introduction of personal experiences and opinions tends to make the class livelier; and the instructor is given a method for learning at least some of the students' names by attaching students to their backgrounds, experiences and personalities.

#### Limitations on Use of Suggestion

Discipline: Subjects with opposing views

Course Level: None

Course Size: None

Mode: Lecture/discussion primarily

#### **Suggestion Number: 6) Use student opinion to evaluate current issues**

##### IF YOU WANT TO:

- Discuss points of view other than your own
- Invite students to share their views on controversial topics

##### YOU MAY WITH TO CONSIDER:

Using student opinions to create a microcosm of society's attitudes on social, political and economic issues.

At the beginning of a term, a professor of economics gives students a questionnaire in which they are asked to agree or disagree with a series of controversial statements on the functioning of the economy. "Because the introductory course is so large (over 800 students), it is impossible to invite discussion even though many students enter the course with strong views about such matters as the causes and cures of inflation," he explains.

"As a substitute for discussion, I use the survey results to introduce a variety of student viewpoints. Throughout the semester I reveal selected results from the survey as these relate to new concepts or issues covered in reading and lectures. This technique gives the students a sense of personal involvement in the subject matter. At the same time, the use

of student data allows me to introduce most of the views currently reflected in the society as a whole."

#### Limitations on Use of Suggestion

Discipline: Subjects with opposing views

Course Level: None

Course size: Above 25 to provide a range of opinion

Mode: Lecture

### **Section Two: Discuss Recent Developments in the Field (7-11)**

#### **Suggestion Number: 7) Telephone colleagues conducting state-of-the-art research**

##### IF YOU WANT TO:

- Discuss recent developments in the field
- Convey a sense of the open-ended nature of research

##### YOU MAY WISH TO CONSIDER:

Telephoning colleagues who are conducting state-of-the-art research on key course topics to get the latest information.

For example, before giving her lecture on the heart, a physiology professor calls researchers at Stanford and UCSF to get the most recent statistics and findings on heart transplants. Similarly, a law professor directly contacts attorneys involved in important cases pending or under adjudication, making her lectures even more up-to-date than the Advance Sheets which give the first printed results of court decisions.

A professor in geography routinely calls his contacts in Washington to get the latest information on environmental legislation which he incorporates into his lectures.

This type of up-to-the-minute reporting on a few major developments relevant to the course content can help you convey a sense of the excitement of research to students.

#### Limitations on Use of Suggestion

Discipline: Subjects with recent developments

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 8) Require students to read current journal articles**

IF YOU WANT TO:

- Discuss recent developments in the field
- Help students to understand technical or professional literature

YOU MAY WISH TO CONSIDER:

Requiring students to read current journal articles.

"It's important for students to be exposed to state-of-the-art ideas and materials even in a lower division course," says one political science professor. "I try to make sure that the reading list contains at least a few recent publications or journal articles, even in the introductory course."

"Actually, in some ways it is easier to introduce recent developments in the field to lower division students than to graduate students," according to a faculty member in the biological sciences. "I do this by over-generalising. Usually this involves translating the abstract of a journal article in terms a layman can understand and presenting the basic findings or conclusions in a narrative fashion, using little or no actual data."

"I want students to become excited by the open-ended nature of science. I want them to understand that almost nothing that they are learning is the final word, that there is still much that we don't know. Even the best textbook cannot convey that; you have to do it with supplemental materials."

Limitations on Use of Suggestion:

Discipline: Subjects with recent developments

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 9) Require students to read current newspapers or periodicals**

IF YOU WANT TO:

- Discuss recent developments in the field
- Connect course content with current events

## YOU MAY WISH TO CONSIDER:

Requiring students to read current newspapers or periodicals.

An economist, for example, assigns the Tuesday editorial page of the Wall Street Journal each week. She uses these editorials as a basis for discussions and for exam questions, having students compare them with textbook presentations on related topics.

A teacher in the biological sciences also believes strongly in making use of articles in current periodicals. "I keep my eyes open for stories on recent developments which have become part of the 'current events' literature," he says. "For example, in a discussion of recombinant DNA, I was able to use photos from a recent issue of Life Magazine, as well as a story the Wall Street Journal did on the Genetech Corporation."

## Limitations on Use of Suggestion

Discipline: Subjects for which there are appropriate readings

Course Level: None

Course size: None

Mode: None

## **Suggestion Number: 10) Share your professional "junk mail" with your students**

### IF YOU WANT TO:

- Discuss recent developments in the field
- Introduce students to professional activities

### YOU MAY WISH TO CONSIDER:

Sharing your professional "junk mail" with your students.

In his graduate courses, a professor of education makes a point of passing around program announcements for local conferences, program proceedings, and advertisements for new books and journals in the field. "In this way I inform students about professional activities and recent developments of which they might not otherwise be aware," he says. "I also encourage students to attend professional meetings and conferences and to request papers on topics of interest to them. It's simply another way to socialise them to the profession."

A faculty member teaching introductory French also shares copies of newsletters, newspaper clippings, and Announcements of French movies, plays or other cultural events in the Bay Area. "Students are often amazed and delighted to learn that there are

so many opportunities to strengthen their language skills and to expand their understanding and enjoyment of French culture," he explains.

#### Limitations on Use of Suggestions

Discipline: None

Course Level: None

Course Size: None

Mode: None

### **Suggestion Number: 11) Let your students know about resources**

#### IF YOU WANT TO:

- Discuss recent developments in the field
- Expand students' knowledge and appreciation of the subject
- Encourage students to take advantage of course-related activities

#### YOU MAY WISH TO CONSIDER:

Setting aside class time to let students know about community events and resources which will expand their understanding of the subject matter.

"Every Monday I distribute a calendar announcing course-related events not only on the campus but in the Bay Area," one social science faculty member explains. "The events include dance troupes, plays, lectures, demonstrations, poetry readings and so forth. In this way the content of the course can be expanded far beyond what I can actually cover in class. I also encourage students to use these local resources in their research and writing assignments."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Section Three: Give References**

### **Suggestion Number: 12) Distribute a bibliographic list on each major topic**

#### IF YOU WANT TO:

- Give references for more interesting and involved points
- Encourage students to read further on a topic

#### YOU MAY WISH TO CONSIDER:

Distributing a bibliography of recommended readings on each major topic covered by the course.

Some faculty members include these bibliographies (annotated or not) as part of their course syllabus; others distribute them weekly as each new topic is introduced. "Updating and annotating these bibliographies is made easier if you keep a file on each topic and insert journal articles, book reviews, or notes throughout the year," a professor of education points out. "Typically, I can use the same bibliography for two or three years," says a professor of forestry. "In the interim years, I just append new items or write them out on the board."

A teacher in political science distributes a bibliography and has students annotate the references as an assignment. Another has his TA do the annotation. "In this way I can be certain that the TA is familiar with all the recommended readings for the course," he says. "Because the TA is typically one of my own graduate students, this exercise also provides an excellent preparation for orals."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: Upper division and graduate

Course size: None

Mode: None

#### **Suggestion Number: 13) Prepare two lists of references for each course topic**

IF YOU WANT TO:

- Give references for more interesting and involved points
- Encourage students to do additional reading
- Accommodate the diversity of students interests and background preparation

YOU MAY WISH TO CONSIDER:

Preparing two lists of references for each major topic in the course to respond to student diversity.

A faculty member in the biological sciences gives students two sets of references on each topic for optional reading. The first list recommends readings which might be helpful to students whose background in prerequisite courses may be weak; the second list includes readings of interest to students who wish to pursue a particular topic in greater depth.

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course Size: None  
Mode: None

**Suggestion Number: 14) Give students a conceptual framework**

IF YOU WANT TO:

- Emphasise conceptual understanding

YOU MAY WISH TO CONSIDER:

Giving students a conceptual framework on which to hang the major ideas and the factual information of the course.

The framework might be a structure, a theme, a conceptual typology, a controversial issue, or a theory. It should be made salient to the students through repeated reference. As one professor of physiology points out, "To the uninitiated, the field looks like a mass of facts; by establishing a conceptual framework, one minimises the amount of rote memorisation the students will have to do."

Often the framework can be represented symbolically or graphically. Another physiologist, for example, begins each lecture by drawing the same outline of the human brain on the blackboard. The details of the brain, in terms of structures and processes, change according to the specific topics to be covered in that day's lecture.

A sociology professor uses a basic typology as the conceptual framework for his course; this typology is sketched on the blackboard each day in the form of a matrix into which new information is written. He stresses the need to tie the basic facts together, to make the conceptual linkages for students.

A history professor uses the concept "Attitudes toward Natural Resources" rather than chronology as the organising principle. A professor of Spanish literature identifies two or three major concepts (e.g., irony or tragedy) and applies them repeatedly in lecture, discussion and assignments to reinforce student understanding.

Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None



**Suggestion Number: 15) Focus your course on the classic issues and concepts**

IF YOU WANT TO:

- Emphasise conceptual understanding
- Stress fundamental concepts and issues in your discipline

YOU MAY WISH TO CONSIDER:

Focusing your course on the classic issues and concepts in your discipline.

A history professor explains that she has moved away from presenting the most esoteric and up-to-date concerns of professional historians in her undergraduate courses. "The most interesting issues and themes for undergraduates," she explains, "generally turn out to be those which originally excited historians about a particular person, event, or epoch, not the historiographical controversies of present day historians. "The classic issues are the ones which attracted me to the field," she says, "and I find that they are still the most exciting for students." Following this approach does not mean that you cannot introduce new research findings where they are relevant, of course. Nor does this suggest that ideas which have little or no current validity should be taught. It does mean that, in limiting your coverage, you select the major classic themes and concepts wherever possible.

Limitations on Use of Suggestion

Discipline: Subjects for which the classic concepts remain relevant

Course Level: Primarily undergraduate courses

Course size: None

Mode: None

**Suggestion Number: 16) Stress the most enduring values or truths**

IF YOU WANT TO:

- Emphasise conceptual understanding
- Have students apply concepts to demonstrate understanding
- Stimulate the students to think critically

YOU MAY WISH TO CONSIDER:

Stressing the most enduring values or truths in your discipline.

"I stress the permanent values in literature, the emotional responses that a particular novel or collection of novels elicits from us all," says a professor of English. "I try to get the students to understand why they respond to a given novel the way they do."

After the class has discussed how they feel about a novel (the common emotions it arouses) he tries to lead them to analyse, understand, and explain why nearly everyone feels that way. He poses questions such as: What must literature be like in order to get us to respond the way we do? Why does a particular novel affect everyone in the same way? "Behind all my questions is the search for a way of analysing and discussing literature that will explain the most with the fewest assumptions."

#### Limitations on Use of Suggestion

Discipline: Humanities and Social Sciences

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 17) Repeatedly touch base with the fundamentals or basics**

##### IF YOU WANT TO:

- Emphasise conceptual understanding
- Reinforce student understanding

##### YOU MAY WISH TO CONSIDER:

Repeatedly touching base with the fundamentals or basics.

One engineering professor believes that too much of science and engineering is presented to students in a rote, plug-in-the-numbers way. "There are thousands of formulas," he points out, "but all of these are variations on a very limited number of basic ideas or theories." These basic ideas are 'ideal theories' from which are derived all the 'approximate' or 'technical theories' which engineers use."

"I try to teach students how to judge when we can use an approximate theory with confidence and when we are forced to go to a more rigorous level. In this way, I keep touching base with the fundamentals to reinforce students understanding of them."

Another engineering teacher concurs. "Students typically are presented with 100 different equations in each course they take. They are exposed to 1100-1200 equations overall. Rote memorisation is futile; no one can remember that many equations. You have to point out over and over again that these 1200 equations are all embedded in about 8 basic ones."

#### Limitations on Use of Suggestion

Discipline: Scientific fields  
Course Level: None  
Course size: None  
Mode: None

**Suggestion Number: 18) Model processes of deductive or inductive reasoning**

IF YOU WANT TO:

- Emphasise conceptual understanding
- Have students apply concepts to demonstrate understanding
- Model various reasoning and problem-solving techniques

YOU MAY WISH TO CONSIDER:

Modeling processes of deductive or inductive reasoning by which an explanation becomes apparent.

A professor of English says that nearly all of his lectures "follow a logic and discovery procedure, that is, 'Let's make assumption A and then see if B follows from that.' My lectures take the form of unravelling this process, with questions posed to the students to check the validity of the analysis," he says.

A professor of architecture says that because he has an abiding interest in questions of cause and effect, his lectures tend to take the form of "What would happen if..." Problem-solving approaches which closely involve the students are characteristic of many excellent teachers. An engineering teacher, for example, begins his lectures by posing a problem which he proceeds to work out on the blackboard, labelling each step and sharing his reasoning with the class as he works. "I try to model a style of analytic thinking which I hope the students will emulate," he explains.

Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

**Suggestion Number: 19) Pose paradoxes for students to solve**

IF YOU WANT TO:

- Emphasise conceptual understanding

- Have students apply concepts to demonstrate understanding
- Challenge students to think

#### YOU MAY WISH TO:

Pose paradoxes for the students to solve.

A chemistry professor emphasises conceptual understanding by challenging the students with apparent paradoxes. "Several times each semester," he says, "I set up a demonstration to give a visual result that is at variance with that which is described in the textbook. The students are then helped to explain the paradox by applying a variety of problem solving techniques."

"This kind of demonstration really gets the students thinking," he says. "Furthermore, many of the students tell me that they learn much more from seeing than from reading. It gives them another way of understanding and helps them gain self-confidence that they do in fact understand."

#### Limitations on Use of Suggestion

Discipline: Sciences primarily

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 20) Divide your course into parts**

#### IF YOU WANT TO:

- Emphasise conceptual understanding
- Discuss recent developments in the field
- Respond to student diversity

#### YOU MAY WISH TO CONSIDER:

A zoology professor focuses the first part of the course on fundamentals and the second part on "state-of-the-art" research. "The first six weeks cover the basic concepts and fundamental processes all students must learn about the subject," he says. In this segment he eliminates many "nice to know" concepts in favour of going over the basics in a very thorough way.

"Because the students are very heterogeneous (including undergraduates who have taken only introductory biology as well as graduate students in zoology), I spend the first six weeks making certain that everyone is brought up to approximately the same level of understanding of the fundamentals. Then in the last weeks of the course, I introduce the latest research experiments in the field. In effect, the first half of the course is made up of

'little white lies,' that is, the simplified constructs of the field. In the latter weeks, the emphasis is on how research is actually done and how little we really know."

A professor of physics uses a similar strategy throughout his lower-division course. He divides course topics into three groups: those which are "Basic" (i.e., should be mastered by every student); those which are "Recommended" (i.e., should be mastered by every student seeking a good competence in the subject); and those which are "Optional" (i.e., should be mastered only by those students with specialised interests).

#### Limitations on Use of Suggestion

Discipline: None

Course Level: Courses enrolling students with diverse preparation

Course size: None

Mode: None

#### **Section Five: Explain Clearly (21-27)**

#### **Suggestion Number: 21) Focus your lectures on a few main points**

#### **Suggestion Number: 21**

##### IF YOU WANT TO:

- Explain clearly
- Emphasise conceptual understanding

##### YOU MAY WISH TO CONSIDER:

Focusing your lecture on a few main points and omitting unnecessary exceptions, complexities or details.

"The key to explaining clearly," says one economics professor, "is to limit the amount of material covered by a single lecture. The critical error made by many faculty members is trying to include too much by a factor of six.

"I generally focus on three main points and repeat these in various ways throughout my lecture. Beginning undergraduates do not need to be exposed to the intricacies and complexities of a discipline; indeed, introducing them to these will only confuse them. Introductory course are best taught by focusing on the fundamentals, using generalisations, and avoiding too many exceptions to the rule."

A history professor concurs. "I tell undergraduates, 'Here is what I think you can say is true, despite all the past and current debates of historians.' I don't go into those debates because they are complex and undergraduates are not sophisticated enough about historiography to appreciate them."

## Limitations on Use of Suggestion

Discipline: None  
Course Level: Undergraduate  
Course size: None  
Mode: None

### **Suggestion Number: 22) Carefully define all concepts and terms**

#### IF YOU WANT TO:

- Explain clearly
- Respond to student diversity

#### YOU MAY WISH TO CONSIDER:

Carefully defining all concepts and terms.

A faculty member in the biological sciences points out that you cannot assume that the students know or remember concepts and terms from previous courses. "If I use a word for the first time, I write it on the board and define it. I do this even if it is a concept or term that students have presumably learned in introductory biology and chemistry courses."

Another faculty member underscores the importance of giving students a clear definition of terms. "If the term is not defined or is poorly defined in their textbook, I point that out and then give them the clearest definition I have been able to find." He frequently looks at three or four introductory texts to find the clearest definition of a term, especially if it is either not defined or not defined well in the textbook used in the course.

## Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

### **Suggestion Number: 23) Rephrase explanations of major points several times**

#### IF YOU WANT TO:

- Explain clearly

- Emphasise the main point

YOU MAY WISH TO CONSIDER:

Rephrasing explanations of major points several times.

"Repetition leads to learning," one science professor says. "I repeat major points several times from a different direction or in different words."

"No single explanation will be clear to all students," points out a professor of business administration. "By using different language or different examples, I maximise the chances that every student will eventually understand."

A political science professor also consciously alters the words he uses. "I have a tendency to say things twice," he says: "first, formally and then colloquially." An engineering professor reports that he develops the same point in two or three different modes, e.g., mathematically, verbally, and graphically.

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 24) Use lots of concrete or memorable examples**

IF YOU WANT TO:

- Explain clearly
- Emphasise conceptual understanding
- Have an interesting style of presentation

YOU MAY WISH TO CONSIDER:

Using lots of concrete or memorable examples.

Most excellent teachers agree that the choice of examples is very important, favouring those that are anecdotal, personal or humorous because they find that students tend to remember these best. "I use concrete examples wherever possible," says an anatomy professor. "For instance, I describe a particular body organ by comparing its size or texture to an object familiar to students, like a walnut."

An economics professor also places importance on using concrete examples of interest to students. "I use specific examples whenever I can. In talking about inflation and price controls I'll use the price of Prince tennis rackets or Sony Walkmans rather than apples or a general product."

A forestry professor uses the same strategy. "In talking about acre-feet of water, first I define it formally and then I give several examples which will help them appreciate the amount of water represented, such as 'equivalent to 77,000,000 ice cubes.' Students tend to remember examples like that," he explains.

### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Suggestion Number: 25) Demonstrate (rather than describe) a concept or idea**

#### IF YOU WANT TO:

- Explain clearly
- Emphasise conceptual understanding
- Have an interesting style of presentation

#### YOU MAY WISH TO CONSIDER:

Demonstrating a concept or idea rather than simply describing or discussing it.

"Whenever possible, try to avoid talking about something in its absence," one teacher says. "For example, don't tell students how to present a logical argument; present a Logical argument and help them to analyse it. Don't describe how to solve a problem; demonstrate how to solve it on the blackboard and label and describe the steps and your reasons for them as you go."

Demonstrations are superior to discussions because they make use of additional senses. Drawing examples from everyday experiences, even if they cannot be demonstrated in class, will help students to visualise or re-experience them and reinforce their learning.

Use visual imagery whenever possible. Even if a live demonstration or the use of visual aids is not practical, the use of metaphors and analogies that give students a mental image to draw upon can help reinforce their understanding and recall. For example, a physics professor helps students "get ready" for a discussion of velocity by asking them, "Have



you ever seen a quarterback throw a football into the wind? Have you ever thrown a ball into the wind yourself? What happens?"

Teachers can often make use of slides, maps, tape recordings, live or filmed dramatisations, charts, diagrams, demonstrations, and actual cultural artefacts to illustrate the subject matter.

### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Suggestion Number: 26) Empathise with students' difficulties in learning**

IF YOU WANT TO:

- Explain clearly
- Help students follow explanations or difficult concepts

YOU MAY WISH TO CONSIDER:

Empathising with the students' difficulties in learning the material for the first time.

A faculty member in the sciences says that he noticed that he had taught the course better the first time than he did the second time. "When I asked myself why, I realised that in preparing the course for the first time, I really had to work hard to master certain parts of the material in order to explain it to the students. The next time, however, these concepts no longer seemed difficult to me. Unfortunately I forgot that they would still be difficult for the students. Now I colour-code all of my lecture notes, keying the parts that students are likely to find difficult and making a special effort to make those points very clear."

A physics professor also tries to put himself in the students' shoes. "After I have finished writing up a set of lecture notes," he says, "I review them carefully, asking myself: 'What might the students find hard to follow in that line of reasoning?' 'What examples might make that more clear?' This has now become the most important part of my lecture preparation."

Several faculty members report making notes to themselves of explanations that worked well and those that didn't. They also keep records of the kinds of errors students most commonly make in assignments and exams as a reminder of what students find most difficult to understand.

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Suggestion Number: 27) Acknowledge the difficulty of certain concepts**

IF YOU WANT TO:

- Explain clearly
- Emphasise conceptual understanding
- Identify what you think is important

YOU MAY WISH TO CONSIDER:

Acknowledging the difficulty and importance of concepts students are likely to find hard to understand.

One engineering teacher says, "I consciously cue the students to the most difficult ideas by saying such things as, 'Almost everyone has difficulty with this one, so listen closely.' Because the level of students' attention varies throughout the hour, it is important to get everyone Listening carefully before introducing a new concept or explaining a difficult point."

A forestry professor agrees. "I make a special effort to slow down and get everyone's attention when I come to a concept I know students will find difficult."

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Suggestion Number: 28) Keep a set of cumulative notes for each course topic**

IF YOU WANT TO:

- Be well prepared
- Develop a system for updating lectures

## YOU MAY WISH TO CONSIDER:

Keeping a set of cumulative notes for each course topic.

Most teachers keep a chronological set of lecture notes from the first to the most recent time they have taught a course. Many teachers keep separate notes for each lecture topic. "To these I add research articles, newspaper clippings, cartoons, ideas for assignments or exam questions and notes to myself for improving the lecture or discussion," reports a professor of English.

By keeping separate topic files and inserting new materials and notes of new ideas throughout the year, it becomes much easier to prepare a new set of lecture notes with improved or more up-to-date examples, assignments, or explanations the next time you teach.

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

## **Suggestion Number: 29) Keep a journal**

### IF YOU WANT TO:

- Be well prepared
- Profit from your own mistakes

## YOU MAY WISH TO CONSIDER:

Keeping a journal.

One history professor has found it very effective to keep a brief journal or diary for each course. "After each lecture, I jot down a few notes about how the class went: explanations and examples that worked well and those that didn't, students' difficulties with the text, techniques for generating discussions, and so forth. If something went very badly, I correct it at the next meeting. For the most part, however, I keep the journal to help me improve the course next time."

Although a journal of this type could be beneficial to any teacher, its value is greatest for new instructors or for faculty members teaching a new course or a course they teach only every few years.

## Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

### **Suggestion Number: 30) Completely rework your lecture notes**

#### IF YOU WANT TO:

- Be well-prepared
- Maintain your enthusiasm for the subject matter
- Have your course reflect your own professional growth

#### YOU MAY WISH TO CONSIDER:

Completely reworking your lecture notes each time you teach the course.

"It's important to completely redo my notes each time I teach the course," says an economics professor. It helps me rethink the material so that the ideas seem fresh and new to me as well as to the students. This increases my enthusiasm for the subject matter and I think this is communicated to the students."

"My lectures change somewhat every time I teach the course," says a professor of psychology. "In this way, over a period of six to eight years, they change quite radically. This is partly because the field is changing, but it is also because my own ideas continue to develop."

Although the myth of the professor who teaches with yellowed and musty notes is almost unheard of in a major university, the importance of re-creating lecture notes each time a course is taught -- even if back-to-back within the same year -- was stressed by nearly all excellent teachers as a way of keeping themselves fresh and interested as well as interesting to the students.

## Limitations on Use of Suggestion

Discipline: None  
Course Level: None

Course size: None  
Mode: Lecture, primarily

**Suggestion Number: 31) Review several textbooks for each lecture topic**

IF YOU WANT TO:

- Be well-prepared
- Introduce recent developments in the field
- Have your lectures complement the textbook

YOU MAY WISH TO CONSIDER:

Reviewing the relevant sections of several textbooks for each lecture topic.

A faculty member teaching a lower division course in the biological sciences says that in preparing each lecture he starts by comparing three or four introductory texts. He then looks at one or two specialised books on the given concept or biological process.

"There is no such thing as the perfect textbook; each has its strengths and weaknesses. By comparing several approaches, I am able to distil the best definitions, explanations and examples and am less likely to overlook important aspects of the topic. It also helps me to complement the textbook rather than repeat it in lecture. I also include simplified accounts of recent developments in the field taken from my own professional reading whenever it is appropriate."

Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

**Suggestion Number: 32) Use an abbreviated set of lecture notes**

IF YOU WANT TO:

- Be well-prepared
- Have a more interesting style of presentation

YOU MAY WISH TO CONSIDER:

Using an abbreviated set of lecture notes.

Many excellent teachers describe a two-stage process in the preparation of their lecture notes. A history professor, for example, says "First, I write out a detailed set of lecture notes over the weekend or the night before class. Then, on the morning before class, I take about an hour and a half to reduce these notes to a brief outline on index cards."

"Students like structure," he explains. "But they do not like terribly formal lectures delivered verbatim. Once I have worked out fully what I want to say, I communicate it more forcefully and more informally from a small number of index cards."

### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: Lecture, primarily

### **Suggestion Number: 33) Reread the texts assigned to students**

#### IF YOU WANT TO:

- Be well-prepared
- Identify what you think is most important
- Complement the textbook

#### YOU MAY WISH TO CONSIDER:

Rereading the texts assigned to students.

Teachers in several disciplines report that a major part of their preparation is rereading the texts assigned to students. "I reread the text assignment over the weekend not only to ensure that it is fresh in my mind," says one history professor, "but also so I can acknowledge the parts I found dull, unclear, or especially important."

An English professor says, "No matter how well I think I know the literary texts assigned, I reread them very carefully so that they are vivid in my mind."

An anatomy professor reports that he rereads the text just after he finishes his lecture notes. "I always check my lecture notes against the text a final time," he says, "to be sure that I am complementing rather than repeating the text and to note any disagreements I have with its author."

## Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

### **Suggestion Number: 34) Prepare handouts of the outline and important details**

#### IF YOU WANT TO:

- Be well-prepared
- Give lectures that are easy to outline

#### YOU MAY WISH TO CONSIDER:

Preparing handouts of the lecture outline and any detailed formulae, derivations, or illustrations to be presented in the class.

"My handouts include the essential points of my lecture, including definitions, notations, important formula, and derivations," says one professor of business administration. "Students could not cut class and rely solely on the notes, however, because they are not self-explanatory. Essentially they are designed to help the students follow the main structure of the lecture and to keep them from getting bogged down in copying details."

Several excellent teachers report that they make judicious use of handouts covering the most important, detailed, or complex topics covered in their lectures. Not everyone favours handouts, however. "Analytical material can't be learned by watching and reading alone," says one engineering professor. "It must be learned by doing, by writing it out." He puts important material on the blackboard, discussing the steps and labelling them as he goes to aid students in their note taking.

## Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: Lecture primarily

### **Suggestion Number: 35) Prepare a detailed course syllabus**

IF YOU WANT TO:

- Be well-prepared

YOU MAY WISH TO CONSIDER:

Preparing a detailed course syllabus.

"My syllabus usually runs about 15 pages," says a professor of education. "It is organised by class session and each section consists of the major topic, four to eight important study questions or issues the students are expected to understand or be prepared to discuss, and the required reading and recommended supplemental readings. The syllabus also describes the assignments, grading procedures, and the competencies students are expected to have (i.e., the things they are expected to be able to do) at the end of the course."

In addition to his own detailed syllabus, a professor of forestry also prepares what he calls a "quasi-syllabus" for students. "The students' syllabus (which is sold to them at cost) includes a course outline and a complete set of the graphs, charts, and biological drawings which I show on slides during lectures," he explains. "In this way, students can study and review the supplementary materials outside of class in conjunction with the text and notes taken during lecture."

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 36) Teach the same course in a subsequent semester**

IF YOU WANT TO:

- Be well-prepared
- Profit from your own mistakes

YOU MAY WISH TO CONSIDER:

Teaching the same course in a subsequent semester.



One chemistry professor frequently teaches the same course "back to back" in two consecutive terms. "This way I can maximise learning from mistakes I have made," he explains.

"I make notes to myself about what went well in the course and what didn't as it goes along," he says. "For example, I might make a note saying, 'Don't forget to emphasise this point before that point.' Executing these suggestions to myself the very next semester reinforces my own learning."

#### Limitations on Use of Suggestion

Discipline: Courses offered every term.

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 37) Audit the same or related courses taught by colleagues**

##### IF YOU WANT TO:

- Be well-prepared
- Get ideas for teaching a course for the first time

##### YOU MAY WISH TO CONSIDER:

Auditing the same or related courses taught by colleagues.

One faculty member of computer science reports that he makes it a habit to audit other faculty members' courses. Particularly if I know I am scheduled to teach a course for the first time," he explains, "I make a point of taking the course from the best instructor available. I attend all of the class sessions and usually do most of the homework. I find this is a much easier way to do some advanced preparation than sitting down and reading several textbooks. It forces me to do some preparation each week."

"Taking the course from a colleague not only provides a good review of the content, but I often pick up two or three good teaching techniques as well. Later, I do additional research and design the course my own way, but I have the great advantage of building on a model created by a colleague."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: Courses taught frequently by several professors

Course size: None  
Mode: None

### **Section Seven: Give Lectures That Are Easy to Outline (38-46)**

#### **Suggestion Number: 38) Let students know what you're going to discuss and why**

IF YOU WANT TO:

- Give lectures that are easy to outline
- State objectives for each class section
- Summarise major points

YOU MAY WISH TO CONSIDER:

Beginning each lecture by letting the students know what you are going to talk about and why.

An engineering professor refers to this as his "battle plan." "At the beginning of the hour, I give them a battle plan so they know where the discussion is going and can follow it more easily," he says. "For example, I tell them that I'm going to discuss such-and-such a topic for the first twenty minutes, show them how to use it in the next twenty minutes, and then take questions in the last ten minutes. By laying out exactly what you are going to do, you eliminate a lot of student confusion. You don't want students spending an hour wondering, 'why is he talking about that?' or 'What does that have to do with anything?' instead of concentrating on what you have to say."

Many excellent teachers cite the old adage, "Tell 'em what you're going to tell 'em; tell 'em; and then tell 'em what you've told 'em." Although it may appear to be an over simplification in the case of lectures on complex subjects, the general principle is a good one which can be adapted to major topics within a lecture as well as to the overall lecture itself.

Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: Lecture

#### **Suggestion Number: 39) Write an outline on the blackboard before you begin**

IF YOU WANT TO:

- Give lectures that are easy to outline

YOU MAY WISH TO CONSIDER:

Writing an outline for your lecture on the blackboard before you begin.

One professor of physiology says that he picked this up from a colleague when they were team-teaching several years ago. "I put the outline of my lecture in the corner of the blackboard when I first come into class," he says. "That way the students can tell at a glance when I've shifted topics and where we are in the day's discussion. I also make frequent reference to the outline to alert students to transitions and the relationships between topics."

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 40) Give students a list of questions**

IF YOU WANT TO:

- Give lectures that are easy to outline
- State objectives for each class section
- Give students a conceptual framework for taking notes

YOU MAY WISH TO CONSIDER:

Giving students a list of questions which cover topics to be addressed in your lecture.

One history professor does this routinely. "By outlining my lecture as a series of questions," she explains, "I hope to stimulate the students to think actively during the presentation. The questions are designed to give them a conceptual framework and guide so they can identify where we are and where we are going in the overall discussion."

"I realise that it is difficult for students to listen attentively for a full hour," she says. "Providing them with an outline of the lecture in question format allows them to pick up the thread of the discussion more quickly as their attention fades in and out."

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: Lecture primarily

### **Suggestion Number: 41) Outline your lecture on the blackboard as it develops**

#### IF YOU WANT TO:

- Give lectures that are easy to outline
- Reinforce student learning
- Keep yourself from going through the material too rapidly

#### YOU MAY WISH TO CONSIDER:

Outlining your lecture on the blackboard as it develops.

One professor in the biological sciences says that she always outlines her lectures on the board as she goes along, using colored chalk to differentiate major and subordinate heads or points and to diagram relationships. On a separate section of the blackboard she also writes down any technical terms or names of scientists that the students might not know how to spell.

"The outline serves to reinforce visually what I am saying," she explains. "Furthermore, it makes clear to everyone where we have been and where we are going. An added bonus is that writing the outline on the board as I go along slows down my lecture pace: it serves as an automatic 'brake' and keeps me from racing through the material."

"I prefer to use the board as I go along," an engineering professor says. "I think this emphasises the importance of major ideas better because they are revealed in the context of the discussion."

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: Lecture

### **Suggestion Number: 42) Structure a lecture as you would a journal article**

IF YOU WANT TO:

- Give lectures that are easy to outline
- State objectives for each class session
- Summarise major points

YOU MAY WISH TO CONSIDER:

Structuring your lectures as you would a journal article.

"Each lecture should have a clearly defined beginning, middle, and end," a professor of history notes. A faculty member in computer science concurs, saying that he prepares his lectures so that they have the oral equivalents of an introduction, headings, subheadings, summary, and conclusion.

"Orally highlighting the structure of a lecture serves the same communication functions as using paragraphs and different type faces in a journal article," he says. "It tells the audience what the topic is, why it is important, what its chief components and their relationships are, and what conclusions we can draw."

"I firmly believe in sharing the structure and reasoning of my lectures with the students," he explains. "I begin each lecture by stating my objectives. For example, 'Today we are going to discuss X and its effects of Y and Z.' I make frequent transitional phrases, and I leave time to summarise the major points at the end of the hour."

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: Lecture

**Suggestion Number: 43) Use "closed lists" whenever possible in your lectures**

IF YOU WANT TO:

- Give lectures that are easy to outline
- Summarise major points

YOU MAY WISH TO CONSIDER:

Using "closed lists" whenever possible in your lectures.

A political science teacher says he makes frequent use of closed lists. "I make a habit of saying things like, 'There are three main implications of X, number one is...' or 'Remember in the last lecture, we were discussing the six principal steps that an administrator goes through when...; these are Number one..., etc.'"

"Closed lists are marvellous," he says. "They are fictional constructs, of course, and this needs to be pointed out to the organizer for the students. Nevertheless, they provide a good advanced organizer for the students. Closed lists help them both to listen for major points and to take notes. They also provide a very natural bridge or transition mechanism for letting students know when you are changing from one topic to another. Finally, I find that closed lists provide a good structure for summarising, because they help differentiate between the main points and the detailed examples or digressions."

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

#### **Suggestion Number: 44) Organise your lectures into 10-minute segments**

##### IF YOU WANT TO:

- Give lectures that are easy to outline
- Organise your lectures to leave time for a summary
- Improve the pace and timing of your lectures

##### YOU MAY WISH TO CONSIDER:

Organising your lectures into ten-minute segments.

A faculty member who reports doing this says that he learned the trick from an article in Science written by Nobel Laureate, Sir Lawrence Bragg. In the original article, Bragg says, "Some try to get the timing of a lecture right by, as they say, 'running over it beforehand' and seeing how long it takes...I prefer to divide it into some half dozen portions, and allocate about ten minutes to each, marking this timing in the margin of my rough notes..."

"The advantage of dividing the time up in this way is that the pace can be adjusted during the lecture when it is clear that it is going to be too long or (rarely) too short. If time is running long, the part to shorten is the middle where it will be little noticed. The

beginning or the end must not be hurried..." ("The Art of Talking about Science," Science, Vol. 154, December 1966.)

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: Lecture

#### **Suggestion Number: 45) Schedule a break if your class exceeds one hour**

##### IF YOU WANT TO:

- Give lectures that are easy to outline
- Have an interesting style of presentation
- Show interest and concern for students

##### YOU MAY WISH TO CONSIDER:

Scheduling a break if your class exceeds one hour.

After an hour, it is difficult for students to concentrate and take notes steadily; their efficiency drops. Many teachers provide a break after 50 minutes or so to give students a chance to regain their concentration.

A physics teacher always takes a short break in his 1 1/2-hour class. "I have students stretch at their seat to wake them up and get their blood circulating." A faculty member in the biological sciences has students take a "t'ai chi" break, leading them through exercises.

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

#### **Suggestion Number: 46) Pay attention to your boardwork**

##### IF YOU WANT TO:

- Give lectures that are easy to outline

YOU MAY WISH TO CONSIDER:

Paying attention to your board work.

One of the best summaries of "blackboard etiquette" we have found was written by Uri Treisman for the Graduate Assembly's Handbook for Teaching Assistants (1983). The following is a summary of Treisman's tips, augmented by those reported by faculty members.

First, be sure to determine the visibility of the board from several vantage points in the room. Second, if you are teaching in a room with three movable boards, use the middle board first. When you are finished push that board up and use the front board next. In this way, the information you have presented can be viewed for a longer period of time. Third, if you have a soft voice or are teaching in a large room, don't lecture while writing with your back to the class unless you are wearing a microphone. Also turn to face the class when making important points so that you can pick up visual cues as to students' comprehension.

Fourth, label the basic components of what you put on the board, using words like "Theorem," "Proof," "Answer." This practice will emphasise the structural aspects of problem solving and reinforce student learning. Fifth, don't simplify expressions by using an eraser while students are trying to take notes. Put a single line through the expression you wish to simplify and write the new expression above it. If you omit a computation, indicate that you have done so by writing "computation omitted." Sixth, prepare handouts of any detailed formulae, derivations, or illustrations to be presented in class.

Limitations on Use of Suggestion

Discipline: Primarily mathematics, statistics and sciences Course Level: None

Course Size: None

Mode: None

### **Section Eight: Summarise Major Points (47-49)**

**Suggestion Number: 47) Begin and end your lectures with a summary statement**

IF YOU WANT TO:

- Summarise major points
- Give lectures that are easy to outline



- Emphasise conceptual understanding

#### YOU MAY WISH TO CONSIDER:

Beginning and ending your lectures or discussions with a summary statement.

A history professor finds it helpful to place his watch in full view on the desk or lectern. "I watch the clock carefully to be sure that there is time to summarise the day's discussion. Then, at the beginning of the next class session, I sum up the previous lecture once more before moving on to a new topic."

"Students crave both continuity and a sense of closure," he explains. "They do not like unfinished presentations. At the same time, because none of us likes repetition, I try hard to use different words and examples in each summary. The best way I have found to avoid redundancy is to note on an index card the exact words I have used at the end of a lecture, so that I am reminded to vary them in the brief recapitulation I give at the beginning of the next class meeting."

A professor of business administration also uses this technique. "Because each concept in this course builds upon what has gone before, it is important for students to see how each new topic relates to what they have already learned as well as to what they will be learning in the coming weeks. I find the most effective way of doing this is to begin with a brief summary of what came before, followed by a brief preview of what will come next."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 48) Use the blackboard for effective summarisation**

#### IF YOU WANT TO:

- Summarise major points
- Give lectures that are easy to outline

#### YOU MAY WISH TO CONSIDER:

Using the blackboards for effective summarisation.

Several excellent teachers stressed the need to plan their blackboard work carefully so that the most important concepts are still visible at the end of the hour and can be used in making a summary.

"I consciously attempt to write clearly and legibly and to be sure that my boardwork is organised and visible to everyone," one engineering professor says. "At the end of the class, I use this boardwork to go back over important theorems or equations, underlining and boxing in colored chalk important concepts and steps."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 49) Begin with a brief summary of the last meeting**

##### IF YOU WANT TO:

- Summarise major points
- Identify what you consider most important
- Check students' understanding of a major concepts and ideas
- Provide a good transition between major topics

##### YOU MAY WISH TO CONSIDER:

Beginning each class period with a brief summary of the main points covered in the last meeting and then calling for students' questions.

The advantage of summarising and asking questions at the beginning of a class period is that, "the students are fresher and after a brief recapitulation, they are more likely to realise and acknowledge if they have any problems," as one teacher puts it. A variation on this technique is to summarise and call for questions whenever there is a major transition from one topic to another within the same lecture.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Section Nine: Identify What You Consider Important (50-53)**

**Suggestion Number: 50) Call attention to the most important ideas**

IF YOU WANT TO:

- Identify what you think is most important

YOU MAY WISH TO CONSIDER:

Explicitly calling attention to the most important ideas in each lecture.

"I began to emphasise the main points about ten years ago," says one political science professor, "when I discovered that you can't rely on undergraduates to intuitively know what the most important points are. You have to tell them." Faculty members in several disciplines stress the need to call students' attention to the most important ideas being presented. Some teachers announce the importance of an idea before presenting it, saying such things as, "This is really important, so you have to be alert." Other teachers emphasise the most important ideas when summarising, saying, "The most important thing to remember here is..." or "This is so important that every one of you should have it engraved on a gold plaque and hung over your bed!" as one professor of computer science puts it. "There is no point in students having to guess what is important if I can tell them," he says.

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: Lecture primarily

**Suggestion Number: 51) Demonstrate why a particular point is important**

IF YOU WANT TO:

- Identify what you think is most important
- Motivate students to learn

YOU MAY WISH TO CONSIDER:

Explaining or demonstrating to students why a particular point is important.

Several teachers believe that the best way to cue students to the importance of an idea is to show them the role that idea plays in an overall understanding of the course material or in applications beyond the course.

"I think it is crucial for students to know why a concept is important," says one physiology professor. "Just saying that it is important is not enough. You need to put the concept in some perspective, to show why it is important. Explaining why an idea is important not only gets the students' attention, it gives them a framework on which to hang the idea."

An engineering professor concurs. "I follow the introduction of a major concept with lots of specific examples, including anecdotes which show application of the concept in current professional practice," he explains.

"You must show students why it is important to know a particular concept if you expect them to master it."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 52) Indicate the relative importance of ideas**

IF YOU WANT TO:

- Identify what you consider is most important

YOU MAY WISH TO CONSIDER:

Indicating the relative importance of ideas presented in your lecture.

A professor of political science says, "I highlight major points by saying, 'This is more important than that.' For example, if I am giving a list of six contributing factors to some phenomenon or event, I identify which in my view are most important. I don't want students to go away thinking that everything I say is of equal weight or importance."

A professor of engineering also thinks it is important to differentiate between the most and least important ideas presented in lecture. Therefore, he tells the students, "You don't have to memorise everything, but you might want to remember this..." or "This, on the

other hand, is something you will use so many times that it's worth paying special attention to." Used sparingly, he believes that these prefatory remarks help focus student learning on the most essential parts of the course.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: Lecture

#### **Suggestion Number: 53) Use dramatic pauses and repetition**

##### IF YOU WANT TO:

- Identify what you think is important
- Vary the speed and tone of your voice
  
- Have a more interesting style of presentation

##### YOU MAY WISH TO CONSIDER:

Using dramatic pauses and repetition to draw students' attention to the main ideas.

Several teachers stress the need for repetition (using different language or examples) to communicate the most important points in their lectures.

Dramatic pauses are another way to highlight important ideas. A history professor says that she used to tell students, "The main point is..." but in a matter-of-fact manner, almost as an aside. "I discovered that many students did not get the message," she explains. "Now I indicate a main point by pausing to get students' full attention and then saying emphatically, 'This is the really important consideration!' Then I pause again to be sure they are prepared to write it down. If not, I restate the importance of what is to follow.

A sociology professor also uses dramatic pauses and a sense of timing to stress the most important points in his lectures. "I structure each lecture to build up to the crucial point of the topic," he says. "Then I announce it in a sweeping manner, timed to occur at the end of the class period."

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

## **Integrate Discussion into Your Lectures (54-56)**

### **Suggestion Number: 54 Divide your lecture into blocks of time**

#### IF YOU WANT TO:

- Encourage class discussion
- Integrate discussion into lecture
- Have an interesting style of presentation

#### YOU MAY WISH TO CONSIDER:

Dividing the class period into blocks of time, one of which is a discussion segment.

"I found it boring when I was a student simply to listen to a professor talk for an hour and a half," says a faculty member of ethnic studies. "So I try to vary the class activities by dividing the class period into three segments."

For the first 20 minutes of class time, he builds up to a discussion question by presenting evidence, facts or issues. The next 30-40 minutes is devoted to student discussion even though the class has several hundred students. The instructor asks students for possible explanations or interpretations of the facts or issues presented in the first part of lecture. For example, in his discussion of the Chinese Exclusion Act he will ask why it was passed at that particular time rather than in an earlier or later period. Students offer possible reasons which he records on the board, and elaborates, probes or interprets.

The last 20-30 minutes of class is spent analysing the discussion and bringing the topic to a conclusion. Finally he ends the period by posing a question which students are to think about before the next class meeting.

Incorporating discussion into large lecture classes takes careful preparation: the questions posed to students need to be identified in advance and their responses anticipated in order to ensure a productive discussion. Nevertheless, this approach is very effective for engaging students' interest and encouraging analytical thinking.

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None

Course size: None  
Mode: None

**Suggestion Number: 55 Make one of the lecture periods a discussion section**

IF YOU WANT TO:

- Encourage class discussion
- Form discussion groups in large lecture classes

YOU MAY WISH TO CONSIDER:

Turning one of the lecture periods into a discussion section.

An engineering professor teaches a lecture course which enrolls about 40 students. Because of its size, there is no Teaching Assistant for the class and no formally scheduled discussion section.

"I believe that discussion is quite important, but the current size of 40+ students prohibits useful exchange in the lecture setting," he says. As a result, he decided to restructure one of the lecture meetings into two discussion sections.

On Mondays and Wednesdays he lectures to the class. On Fridays, students meet in two different sections (15-25 students in each group) to discuss the material. The faculty member conducts both discussion sections.

Although it might be difficult to schedule a convenient time for one of the sections (the other can meet during regular lecture hours), the benefits seem worth the effort to this instructor.

Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: Classes too large for discussion & too small for Tas  
Mode: None

**Suggestion Number: 56 Move around the room to promote discussion**

IF YOU WANT TO:

- Encourage class discussion
- Decrease comments directed solely to you as the teacher

YOU MAY WISH TO CONSIDER:

Moving around the room in a way which will promote discussion.

A professor of business administration finds that the way in which he moves around the room alters the kinds of interaction he is able to generate among the students. "When a student asks a question, it is natural for an instructor to move toward that student," he points out.

"However, this tends to exclude the other students and focuses the interaction between the teacher and each participating student in a series of dialogues.

"In order to draw the other students into the discussion and to get them to address their comments to one another as well as to me, I find that it helps if I move away from the student who is speaking rather than towards him or her. This forces the student to project so that everyone is drawn into the conversation. It also makes it more likely that the student will address fellow students."

A teacher of social welfare adds that she has found it useful to use nonverbal gestures to get students to address their comments to one another. "A wave of the hand or a nod of the head is generally sufficient to indicate that a student should be addressing a question or comment to another student and not to me," she says.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Part Two: Respond to Student Questions (57-61)**

#### **Suggestion Number: 57 Redirect student questions**

##### IF YOU WANT TO:

- Encourage class discussion
- Invite students to share their knowledge
- Have students apply concepts to demonstrate understanding
- Respond to student questions

##### YOU MAY WISH TO CONSIDER:

Redirecting student questions.



Whenever you have reason to believe that there are students in the class who know the answer to a student's question, it is useful to redirect the question to one of those students or to the class as a whole. A professor in the social sciences, for example, says that in the discussion section he tries hard not to answer students' questions directly unless he doubts that anyone in the class would be in a position to give the correct response.

"Even in lecture classes, I often use this technique," he says. "It tends to involve the other students more with the question and it illustrates how fellow students can be a resource for learning."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 58 Paraphrase student questions**

##### IF YOU WANT TO:

- Encourage class discussion
- Respond to student questions
- Avoid private dialogues in the classroom

##### YOU MAY WISH TO CONSIDER:

Paraphrasing student questions.

"In a large class it is important either to repeat students' questions or to integrate the question into your responses," a teacher in the biological sciences notes. "Otherwise, many of the students will not have heard the question and you will find yourself in a private dialogue in which the class does not participate."

Another teacher notes the importance of paraphrasing students' questions especially if it is not clear what the question is. This professor says to the students, "If I understand your question, you want to know under what conditions X does not function in that way. Is that correct?"

Often by paraphrasing a very narrow question, a teacher is able to elevate the question to a higher order and incorporate both the specific and the general case in his or her response. This tends to increase the interest level of the students.

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None, but especially useful in large classes  
Mode: None

### **Suggestion Number: 59 Postpone student questions**

#### IF YOU WANT TO:

- Encourage class discussion
- Respond to student questions
- Handle lengthy, tangential or irrelevant questions

#### YOU MAY WISH TO CONSIDER:

Postponing students' questions which go beyond the current focus of discussion.

Sometimes students ask questions which go beyond the topic of discussion. These are questions which anticipate an upcoming topic, take a topic to a deeper level than expected, or raise a new issue. The question may be important to the student, but irrelevant for the current discussion. The teacher must decide either to put the question aside for after class or to deal with it at the moment.

Most faculty members agree that questions which require a lengthy response or divert discussion from its major focus should be postponed.

As one economics professor explains, "When those circumstances arise, I usually say, 'If I indulge this question, it will lead to this, which will lead to that, which will take us off the main track. If you are interested, please see me after class.'" Likewise, a history professor notes, "If a student asks a question about a topic I am going to address more formally in a later lecture, I ask the student to make note of the question and bring it up again."

If you are able to postpone students' questions with humour, it makes it less likely that they will feel "stupid," or "put-off" by your response. Some faculty members, for example, respond by saying something like, "Andrew, you anticipate me by two full weeks. If you can wait that long it is my hope that we will all share your thirst for knowledge on this point."

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None

Course size: None  
Mode: None

**Suggestion Number: 60 Admit when you don't know the answer**

IF YOU WANT TO:

- Encourage class discussion
- Respond to student questions

YOU MAY WISH TO CONSIDER:

Admitting when you don't know the answer to a student's question.

"Students don't expect you to know everything," notes a professor of architecture. "They admire your candour when you tell them you don't know, and they appreciate your interest when you find out the answer and tell them later."

"It's far worse to fake it than to say 'I don't know that, but it's a good question and I'll try to find out the answer for you,'" says a professor of art history. Similarly, if you are not sure of the answer it is better to say, "I'm not sure. Let me think about it," than to just give the wrong answer and then try to correct it later.

Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

**Suggestion Number: 61 Understand why students repeat the same questions**

IF YOU WANT TO:

- Encourage class discussion
- Respond to student questions

YOU MAY WISH TO CONSIDER:

Understanding why students repeat the same questions.

"I used to be impatient with a student who asked a question which had been asked and answered earlier," says a professor of computer science. "Only after several years did I come to understand that such students are not necessarily stupid or inattentive. I learned

instead that a student can only ask a question after the material has registered with him, after it begins to make sense."

"Although one student may have asked the question the day before, other students may not have 'heard' (i.e. understood) either the question or the answer. Only later, when the material 'clicks,' does that same question become meaningful to for them. Indeed it appears as a 'new' question for them and they are now receptive to the answer.

"I try to keep this in mind and patiently answer all relevant questions. I try to use different language or different examples, hoping that this will make it clear without boring those who grasped the idea a day or two earlier."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Part Three: Help Students Prepare for Discussion (62-72)**

#### **Suggestion Number: 62 Explain the purpose of discussion**

##### IF YOU WANT TO:

- Encourage class discussion
- Help students prepare for discussion

##### YOU MAY WISH TO CONSIDER:

Explaining the purpose of discussion.

To get students involved in class discussion, it is helpful to explain the value of their participation and what they can expect to get out of the experience.

A professor of business administration stresses the importance of explaining the benefits of discussion with students. "Students don't know how to participate in a seminar so I make a point of telling them what skills they will acquire: how to speak and discuss their ideas, how to listen and respond to others' ideas."

In seminars, especially, many faculty members find that it is worthwhile taking some time to teach the students how to listen to others, how to paraphrase, how to involve other members of the group. "Students have to understand that in a seminar they share the responsibility for making the discussion a worthwhile experience for us all," says one social science teacher. "This is a new idea for most of them."

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: Small discussion classes or seminars

### **Suggestion Number: 63 Create an appropriate physical setting for discussion**

#### IF YOU WANT TO:

- Encourage class discussion
- Create a climate for discussion
- Decrease student to teacher exchanges

#### YOU MAY WISH TO CONSIDER:

Creating an appropriate physical setting for the discussion.

It is difficult for students to talk to people they cannot see. In a typical classroom, with fixed seats facing forward, students tend to direct their comments to the front of the room - to the teacher - rather than to other students. This arrangement encourages one-to-one dialogues rather than group discussion. If, on other hand, students can see each other, they are more likely to interact with one another as well as with the teacher.

A circle or U-shaped arrangement of chairs is the most useful for discussion. Instructors also find that if they sit with the students rather than stand or sit on a table, it helps promote true class discussion in place of student-faculty exchanges.

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: Classes of fewer than 50 students

Mode: None

### **Suggestion Number: 64 Identify discussion questions/issues in advance**

#### IF YOU WANT TO:

- Encourage class discussion
- Help students prepare for discussion
- Provide a stimulus for discussion

## YOU MAY WISH TO CONSIDER:

Identifying discussion questions in advance.

Students are more inclined to participate when they know the focus or intent of the discussion. A preview of the discussion topics can help students organise their thinking and prepare to express their views. Several faculty members develop discussion questions in advance and distribute them to their students.

"In my education course," one professor explains, "I give students a series of four to eight discussion questions on each week's reading assignment. These are spelled out in the course syllabus which is handed out during the first week of class. Each student is responsible for all the questions in any given week. These questions serve both as study aids and stimuli for discussion."

A professor of engineering and another in English do not hand out lists of questions until one or two weeks before the topic is to be discussed. This makes it possible for them to design questions which incorporate issues related in earlier discussions.

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

## **Suggestion Number: 65 Have students read different books and journal articles**

### IF YOU WANT TO:

- Encourage class discussion
- Motivate students to do their best work
- Have students apply concepts to demonstrate understanding
- Discuss recent developments in the field

## YOU MAY WISH TO CONSIDER:

Allowing students to select different books and journal articles as a basis for discussion.

A forestry professor who employs this technique gives students a bibliography of 20-30 research articles for each of six major topics in his course. "I tell the students to read until they feel that they are familiar enough with the basic concepts, research methods and findings, to take a quiz and participate in a discussion of the topic," he says. By

requiring some level of mastery of each topic and yet giving the students the opportunity to select among readings, he finds that many students read extensively in the areas of greatest interest to them.

"The quizzes are 10 minutes long and consist of three short answer or short essay questions. The questions are at a conceptual level high enough to allow students to respond regardless of which articles they chose to read," he explains.

A class discussion of the topic follows the quiz. "Because the students have not read identical sets of articles, these discussions allow them to share complementary knowledge. I try to get them to generate their own question, to take positions, to engage in debate," he says.

#### Limitations on Use of Suggestion

Discipline: Subject matter which lends itself to this approach

Course Level: Primarily upper division or graduate

Course size: Small enough for discussion

Mode: None

#### **Suggestion Number: 66 Use an assignment as a basis for discussion**

##### IF YOU WANT TO:

- Encourage class discussion
- Have students apply concepts to demonstrate understanding
- Help students prepare for discussion

##### YOU MAY WISH TO CONSIDER:

Using students' writing assignments as the basis for discussion.

An engineering professor identifies several key questions or issues which are given to students a week or two before they are to be discussed. Students prepare written responses of no more than one typewritten double-spaced page. As a result of writing their answers, students come to class well prepared to discuss the material. Their written responses are turned in at the beginning of the period and are subsequently graded, as is their participation in the discussion of the topic.

A history professor uses a similar strategy. In the first week of class he gives a few short writing assignments, each of which can be completed in one or two short paragraphs. "It's hard to provoke discussion at the beginning of the term by simply tossing out a broad query to the class," he says. "Assigning a specific topic to write about helps students

prepare for the discussion. Later, when the students are more comfortable with each other and with me, this kind of formal preparation is less necessary."

A professor of business administration uses the same approach throughout the term. Each week a "reaction" paper is due which requires students to write one to three pages on a specific topic, typically responding to a controversial issue. The papers are graded and used as the basis for class discussion.

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

#### **Suggestion Number: 67 Use an opinion questionnaire as a basis for discussion**

##### IF YOU WANT TO:

- Encourage class discussion
- Discuss points of view other than your own
- Get the discussion started

##### YOU MAY WISH TO CONSIDER:

Having students complete a brief opinion questionnaire and using the results as a basis for discussion.

A faculty member of business administration has found this approach to be particularly effective. "The first seminar session generally begins with a questionnaire asking for opinions on a variety of issues that will be covered in the course. Each week we begin by analysing the questionnaire results on the relevant topic and talking about the views of political economy revealed by the students' answers," he explains.

This device is very effective in starting discussion and helping students (and the professor) get to know one another's views.

#### Limitations on Use of Suggestion

Discipline: Subjects which involve different points of view  
Course Level: None  
Course size: None



Mode: None

**Suggestion Number: 68 Assign students specific leadership responsibilities**

IF YOU WANT TO:

- Encourage class discussion
- Help students prepare for discussion
- Give students experience as group leaders

YOU MAY WISH TO CONSIDER:

Assigning students specific leadership responsibilities.

"I find this procedure very effective in getting students to take responsibility for class discussions," notes an architecture professor. Students select topics for which they will serve as discussion leaders. The number of leaders per topic depends on the size of the class (usually from one to three students per topic). Each student leads a discussion two or three times per semester."

"The leader's task is to prepare a set of three to six discussion questions regarding the reading material. These discussion questions are handed out to the rest of the class the week before the topic is covered. The leaders assume responsibility for generating and facilitating the discussion in a format upon which they have previously agreed."

A version of this strategy specific to literature courses is used by another professor. Each week a team of students is responsible for conducting the seminar. They do not hand out questions in advance, but they are expected to come prepared to lead the discussion. One member of the team prepares an autobiographical sketch of the author being studied; the other student introduces the novel and the key issues to be discussed.

Limitations on Use of Suggestion

Discipline: Subject matter which can be presented by students

Course Level: Mainly upper division or graduate

Course size: Fewer than 20

Mode: Lecture/discussion

**Suggestion Number: 69 Begin with common experiences**

IF YOU WANT TO:

- Encourage class discussion
- Get the discussion started

## YOU MAY WISH TO CONSIDER:

Beginning the discussion with questions based on common experiences.

Students often feel more comfortable talking about an experience they have in common: a field trip, a slide show, a demonstration, a film, a book, an exhibit, etc. A shared experience can stimulate good discussion because, as they exchange their observations, students frequently discover that they have different perceptions and reactions to the same event. The discussion can then focus on how and why perceptions vary.

An English and a history teacher both apply this technique to their courses. "I like to begin my discussions with a question all students can answer," explains the history professor, "usually dealing with how students felt about the reading." The English professor begins discussion by asking students' reactions to the novel.

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

## **Suggestion Number: 70 Divide the class into smaller groups**

### IF YOU WANT TO:

- Encourage class discussion
- Prepare students for effective discussion
- Give students experience in conducting and evaluating discussion

## YOU MAY WISH TO CONSIDER:

Dividing the class into smaller groups.

An education professor divides his class into groups of six to eight students. Each group is assigned a specific question or topic to discuss, selected from a list of questions prepared in advance. But, because students do not know beforehand which questions their group will be assigned, they must be prepared to discuss all of them.

The professor assigns one student in each group to be the discussion leader, another to be the group's summariser, and a third to be the group's evaluator. Each group conducts its discussion in what it feels is the most effective manner. During discussion the faculty

member moves back and forth among the groups, noting any issues he may want to bring up or clarify at the end of the class.

After the groups have discussed their respective topics, they are called back together and each group summariser presents the results of that group's discussion, highlighting key terms or other information felt to be important. Each group's evaluator then provides some observations on how well the group functioned and makes suggestions as to how it might have functioned more effectively. During the course of the term, each student serves at least once as a group discussion leader, a summariser, and an evaluator."

### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: Seminar/discussion

### **Suggestion Number: 71 Prompt discussion through the use of key phrases**

#### IF YOU WANT TO:

- Encourage class discussion
- Get the discussion started
- Develop students' impromptu speaking

#### YOU MAY WISH TO CONSIDER:

Prompting discussion through the use of key phrases on index cards.

Before class, an education professor prepares a set of 3 x 5 index cards, each containing an important phrase or issue relating to the topic or readings for that week. He makes three to six cards depending on the amount of time he wishes to spend on the topic. A student draws a card out of a hat and has three minutes to respond to the prompt. The class then discusses and elaborates on the student's presentation. At the beginning of the course, students are told that they will be called on to speak two or three times throughout the semester.

"I find this technique very useful in breaking the ice for discussion," he explains. "Furthermore, this activity gives students a chance to polish their impromptu speaking skills."

A variation which this teacher employs is to give the same question to groups of two or three students and have them discuss the issue among themselves for five to ten minutes. Small groups are then combined into larger groups of four to nine students and discussion

continues for another 10 minutes. Finally, a student is selected from each group to make a brief presentation to the assembled class on the conclusions reached by his or her group.

"By beginning the discussion with only two or three people," this teacher explains, "students are more likely to 'open up' and express their views. In order for two people to have a discussion, they both have to talk."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 72 Try brainstorming techniques**

##### IF YOU WANT TO:

- Encourage class discussion
- Help students prepare for an analytical or critical discussion

##### YOU MAY WISH TO CONSIDER:

Using brainstorming as a technique.

Brainstorming is a method which can be particularly effective in getting students to consider all of the possible causes, consequences, solutions, reasons or contributing factor to some phenomenon. The rules are very simple. Students are encourage to contribute ideas rapidly and each idea is written down on the blackboard. During the formation of the list no idea is to be questioned or criticised by any member of the class. Spontaneity and inventiveness are to be encouraged. Only after a set period of time (ten minutes, for example) or when the group has pretty well exhausted its ideas is an analytical or critical discussion of the ideas permitted.

"Posting" is a variation on "brainstorming" in which two or more columns are labelled on the board. These might be "pros" and "cons" of an issue or "possible causes," "consequences" and "interactions" of a phenomenon or event. Again, criticism of ideas is postponed until a later period to encourage spontaneity and creativity.

#### Limitations on Use of Suggestion

Discipline: Subjects which lend themselves to creative problem-solving

Course Level: None  
Course size: None  
Mode: None

#### **Part Four: Sustain and Focus Discussion (73-76)**

##### **Suggestion Number: 73 Encourage heated debates**

IF YOU WANT TO:

- Encourage class discussion
- Discuss points of view other than your own
- Focus and sustain discussion

YOU MAY WISH TO CONSIDER:

Encouraging heated debates.

Faculty members in several disciplines find it useful to make leading remarks to stimulate or revitalise class discussion. The goal of one engineering professor, for example, is "to get the students into such a heated debate that I can slip away to the back of the room unnoticed and the discussion continues. I do this by judiciously playing the devil's advocate, saying something provocative, and stressing the different points of view among the students. Once the discussion is underway, I try to restrain myself from commenting after a student has spoken. In this way the students come to rely more on themselves to 'lead' the discussion."

A political science professor uses the same strategy. "I begin by trying to get students to disagree with one another in order to generate ideas. With this method there is some sacrifice of the organisation and clarity provided by lectures, but there is no better substitute for engaging students' minds and getting them to wrestle with the implications of various public policy techniques." Both instructors stress that the lively exchanges can be generated by asking such questions as, "Who doesn't agree with what's being said? Will someone try to put into words an opposite point of view or a counterposition?"

Limitations on Use of Suggestion

Discipline: Subjects which involve different points of view.

Course Level: None

Course size: None

Mode: None

##### **Suggestion Number: 74 Intercede if the discussion breaks down**

IF YOU WANT TO:

- Encourage class discussion
- Sustain discussion
- Refocus a discussion which is waning or wandering

YOU MAY WISH TO CONSIDER:

Interceding if the discussion is breaking down.

Researchers of small groups have identified several indicators which reveal that a discussion is not going well. These include:

- excessive hair-splitting or nit-picking in the group
- repetition of the same points over and over
- private conversations in subgroups
- monopolisation of the discussion by two or more members
- members taking sides and refusing to compromise
- apathetic participation

In general, a faculty member can usually refocus and revitalise a discussion with the introduction of new questions. If these signs of a deteriorating discussion seem endemic to a group, however, it may be useful to shift from working on the task to discussing the interaction itself and the feelings of the members about the functioning of the group. "I believe that the process of discussion is as important as its substance," notes a professor of architecture. "If a group is having difficulties maintaining a worthwhile discussion, I confront the issue directly and get them to talk about what is happening and why."

### **Suggestion Number: 75 Keep notes during discussion**

IF YOU WANT TO:

- Encourage class discussion
- Summarise major points
  
- Focus and sustain the discussion

YOU MAY WISH TO CONSIDER:

Keeping notes during discussion.

Some teachers find it useful to keep a clipboard handy during discussion so that they can jot down notes. As the class is discussing a topic, one education professor makes notes about important points, confusing concepts, or ideas that may have been overlooked in the discussion. At the end of the period, he makes a brief summary of the topics discussed, reinforcing the main points, and clarifying or elaborating as appropriate.

A professor of engineering employs a similar strategy, but he interjects his comments during the course of discussion. "I summarise and make remarks that will get the discussion back on track, or I shift the discussion from an issue that has already been adequately dealt with to a new one."

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: Discussion

#### **Suggestion Number: 76 Assign students responsibility for summarising points**

##### IF YOU WANT TO:

- Encourage class discussion
- Summarise major points
- Teach students to become active listeners

##### YOU MAY WISH TO CONSIDER:

Assigning students responsibility for summarising the major points.

"At the beginning of the discussion," says a professor of architecture, "one or two students are selected to be the summarisers. Their charge is to take notes, raise questions, and clarify points, so that they can provide a brief five minute summary of the major issues, concerns and conclusions generated during the discussion."

A variation on this technique is for the professor to tell the class, at the beginning of the discussion, that someone will be called on to summarise, but not identify who that student will be. This strategy is designed not only to encourage students to participate more actively in the discussion but to listen more carefully for the main ideas, since they may be called upon to give the summary.

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: Discussion

#### **Section Eleven: Encourage Students to Share Knowledge (77-81)**

**Suggestion Number: 77**

IF YOU WANT TO:

- Invite students to share their knowledge and experience
- Encourage class discussion

YOU MAY WISH TO CONSIDER:

Calling on students who might provide an interesting viewpoint.

"I call on students whom I think might have a different perspective or set of experiences relevant to a given topic or issue," says a professor in political science. "I try to take advantage of the probability that outdoor types will have different experiences and attitudes about environmental issues, or that women and men students will view prostitution and childcare differently."

A law professor follows much the same procedure. "Some of the students have been divorced, which means they will have had personal experiences related to a particular law," she says.

Several teachers stress the fact that by getting students to share experiences you can quadruple the amount of knowledge the students take away from the course.

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 78) Introduce students to the good work done by their peers**

IF YOU WANT TO:

- Invite students to share their knowledge and experiences
- Encourage class discussion
- Promote exchange of information

YOU MAY WISH TO CONSIDER:



Introducing students to the good work done by their peers.

There are several techniques used by a faculty member in business administration to share the ideas and the special knowledge of individual students to the class as a whole. These include:

- passing out a list of research topics chosen by the class so that students will know if others are writing papers of interest to them.
- making available copies of the best papers and essay exams to others in class.
- providing time in section to have students read the papers or assignments of others in the class.
- requiring each student to write a critique of another student's paper as one of the written assignments.
- incorporating into lecture a brief talk by a student who has experience or who is doing a research paper on a relevant topic.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 79) Require students to bring previous work to class**

##### IF YOU WANT TO:

- Invite students to share their knowledge and experiences
- Know what knowledge and skills students bring to your course
- Build on previous student performance levels

##### YOU MAY WISH TO CONSIDER:

Requiring students in the first week of class to bring examples of work done in previous classes (term papers, blue books, designs, lab reports, etc.).

One architecture teacher who does this has students bring slides of design projects executed in prerequisite courses and present them to the entire class. In this way students can share their work and ideas and get to know each other a little better.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: Classes of fewer than 50 people

Mode: None

#### **Suggestion Number: 80) Encourage students to apply their backgrounds**

##### IF YOU WANT TO:

- Invite students to share their knowledge and experience
- Motivate students by relating assignments to their interests
- Stress interdisciplinary topics and approaches
- Foster students ability to synthesise materials

##### YOU MAY WISH TO CONSIDER:

Encouraging students to write papers related to their backgrounds.

A professor of English encourages students to make use of knowledge and skills developed in other courses in combination with those emphasised in his course. "I strongly encourage students to write papers on interdisciplinary topics," he says. Examples of papers which students have written in his courses include: a botany student who wrote a paper on "Shakespeare and Plants," an anthropology major who wrote on "Folk Tales in King Lear," and an art major who analysed the connection between the paintings of Watteau and imagery in Pope's "Rape of the Lock."

"If you can get students to realise that they each bring different kinds of talent and expertise to the course and encourage them to apply these, that goes a long way toward motivating them to do their best work. Some of their interdisciplinary papers are really quite wonderful; I enjoy reading them and often I learn something too."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 81) Encourage students to make presentations to the class**

IF YOU WANT TO:

- Invite students to share their knowledge and experiences
- Encourage student participation
- Draw upon the ideas of students

YOU MAY WISH TO CONSIDER:

Encouraging students to make presentations to class.

"Sometimes students will come up after class and pose an interesting question or make an insightful comment," says one social science professor. "Often I encourage those students to pursue the topic in more detail and then make a brief presentation to the class. When possible, I try to get several students with complementary experiences to work together on project of this kind."

This teacher assists the students in preparing their presentation and then gives them 10 to 15 minutes of lecture time. In his lower division class, two groups of students recently made presentations which were based on a combination of their experiences and those reported in assigned readings.

Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

**Suggestion Number: 82) Explicitly point out alternative points of view**

IF YOU WANT TO:

- Invite criticism of your own ideas
- Discuss points of view other than your own

YOU MAY WISH TO CONSIDER:

Explicitly point out that there are alternative points of view.

One political science professor says that he frequently reminds students that they should question whatever he tells them. "I indicate the polar principles which guide much of the research in social sciences as well as much of our folk wisdom, e.g. 'opposites attract' versus 'birds of a feather flock together' or 'absence makes the heart grow fonder' versus 'familiarity breeds contempt.' In doing so I point out that they should be mindful that there may be good reasons to believe the opposite of what I say," that they should analyse all arguments in terms of their opposites."

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

#### **Suggestion Number: 83) Encourage approaches different from yours**

##### IF YOU WANT TO:

- Invite criticism of your own ideas
- Discuss points of view other than your own

##### YOU MAY WISH TO CONSIDER:

Encouraging students to take an approach different from the one you have adopted.

A professor of English uses this strategy in all of his literature courses. "I always approach literature from a historical point of view: history is a particular passion with me," he says. "At the same time, I point out that there are many other perspectives and encourage students to use alternative approaches, e.g., the psychoanalytic approach or that of the new literary criticism."

#### Limitations on Use of Suggestion

Discipline: Social Sciences and Humanities mainly  
Course Level: Upper division and graduate mainly  
Course size: None  
Mode: Lecture/discussion/seminar

#### **Section Thirteen: Know If the Class Is Understanding You**

##### **Get and Use Feedback (84-104)**

### **Suggestion Number: 84 Increase your eye contact with students**

#### IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if the students are bored or confused
- Have a more interesting style of presentation

#### YOU MAY WISH TO CONSIDER:

Increasing the amount of eye-contact you have with the students during your lectures.

"I look carefully at students' faces," says one history professor. "You can't teach a bored or confused class, so if I see a glazed look which suggests the students are not following me, I interrupt my lecture and say, 'We may be going too fast...,' or 'This point doesn't seem to be clear to some of you...'"

Some faculty members prefer to direct their questions to the entire class; others find it effective to call on students by name, interrupting their lectures to say, "Jerry, you look like you had a question," or "Several of you looked puled. Sally, can you tell me what doesn't seem to be clear?"

One psychology professor says that he was once assigned a room so poorly lit that he could not see the students from the platform until he moved down to the floor level. In teaching in a new room, note any physical obstacles that may interfere with your eye contact with students and make whatever changes are possible.

A professor of English says that because he is very near-sighted, he has learned to listen carefully and pick up on auditory cues which may indicate that the students are bored or confused. "I find that the rustling of papers or the scraping and squeaking of chairs are excellent indicators that students are having difficulty," he says.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: Primarily lecture

### **Suggestion Number: 85 Ask students if they understand what you are saying**

#### IF YOU WANT TO:

- Know if the class is understanding you or not

- Know if the students are bored or confused
- Clear up any confusion students may be having
- Identify what is most important or most difficult for students

#### YOU MAY WISH TO CONSIDER:

Asking students directly whether they understand what you are saying.

Many excellent teachers punctuate their lectures with such questions as "Is this explanation sufficient?" or, "Do you agree?" or, "Was that clear?"

However, as one art history teacher reports, "Sometimes the students look confused, but won't ask questions. This tends to happen especially toward the beginning of the course. When it does happen, I say something like, 'Perhaps you don't have any questions just yet, but I have a feeling I passed over X-topic very quickly. Let me say a few more words about that, because students often find it difficult to understand the first time around.' In this way I let the students know that it's OK to be confused. It's OK to ask questions in my class. By the second or third week, they usually feel comfortable enough to say that something is still not clear to them."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: Primarily lecture

#### **Suggestion Number: 86 Call on students to paraphrase or to summarise**

##### IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if students are bored or confused
- Summarise major points before moving on to another topic
- Emphasise conceptual understanding
- Teach students to be active listeners

#### YOU MAY WISH TO CONSIDER:

Calling on students to paraphrase or summarise what you have just said.

Asking students if they understand gets you only so far," one history teacher explains. "Asking Ms. Jones to summarise the main things to remember about X, and then asking

other students to help out if she is having difficulty is a far better check on students' understanding."

Asking questions of specific students has other benefits too. For example, because students know that they may be called upon, they listen more attentively for the main ideas and that in turn helps them to organise their notes better. Getting students to summarise periodically also breaks the monotony of a 50-minute lecture.

### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

### **Suggestion Number: 87 Begin your lecture with a series of questions**

#### IF YOU WANT TO:

- Know if the class is understanding you or not
- Give students the opportunity to ask questions

#### YOU MAY WISH TO CONSIDER:

Beginning your lecture with a series of questions.

A zoology professor does this at the beginning of the week. He opens class with a question like, "What is bothering you about the material we have discussed so far?" or "Is there anything from last week that you would like to go over again?"

He then takes a series of questions, making notes on the board without responding. Sometimes he pulls the questions together and gives a mini lecture or review (like a composer taking a few notes from the audience and then composing a concerto). Other times he addresses each question sequentially.

### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

### **Suggestion Number: 88 Ask questions during lecture**

#### IF YOU WANT TO:

- Know if the class is understanding you or not
- Have students apply concepts to demonstrate understanding
- Introduce variety into your lecture

#### YOU MAY WISH TO CONSIDER:

Asking questions of the class during lecture.

Several professors routinely intersperse questions into their lectures. As he prepares his lecture notes, for example, an engineering professor identifies key places where he can stop and ask the class a leading question. In describing a particular process, he might pause to ask, "Now who can tell me what happens next?" and then call on a specific student or wait until someone responds.

"It's important to ask questions of students as you are lecturing," he explains. "First, it makes students active learners so that they must think about the material, rather than just passively absorb it. Second, it helps me to know if they are understanding what I am saying."

As a variation on this technique, he poses a problem and has students try to answer it in writing. He circulates while they are working, observing their problem solving approaches and identifying their difficulties. After two or three minutes, he calls for solutions and leads a discussion on how students approached the problem.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Suggestion Number: 89 Give students problems to solve during class time**

#### IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if the students are bored or confused
- Have students apply concepts to demonstrate understanding
- Give help to students who are having difficulty



## YOU MAY WISH TO CONSIDER:

Giving students problems to solve during class time so that you can observe any difficulties they are having. One physical science teacher who uses this technique begins by outlining and discussing a major concept. He then gives students a specific short problem and asks them to take 10 minutes to try to apply the new concept.

"While the students are working, I walk up and down the aisles observing. At the end of 10 minutes or so I summarise some of the common errors they made, why I think they made them, and then give them tips on some of the most fruitful strategies for solving that kind of problem."

Having the students try an immediate application of a new concept greatly reinforces their learning, he believes. "By observing how they tackle a problem, I become much more aware of any difficulties they have understanding the concept and can correct those misunderstandings on the spot."

A variation on this technique is used by a dramatic art teacher in studio courses. "Whenever I notice something especially good or bad in a student's work," he says, "I call the other students over and use that as an opportunity to share the information with the group."

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

## **Suggestion Number: 90 Reserve the last 10 minutes of class for questions**

### IF YOU WANT TO:

- Know if the class is understanding you or not
- Give students an opportunity to ask questions or make comments

## YOU MAY WISH TO CONSIDER:

Reserving the last 10 minutes of class for questions.

A faculty member in the humanities wanted to provide opportunity for student questions during his lectures, but he was concerned that the questions might monopolise class time

and take them off the topic. "I decided to reserve the last ten minutes of class for student questions," he says. "I feel better knowing I will have the time to present the material, and students feel better knowing they have an opportunity to clarify points they may not have understood."

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: Lecture

#### **Suggestion Number: 91 Give frequent assignments**

##### IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if students are bored or confused
- Have students apply concepts to demonstrate understanding
- Identify problems individual students may be having

##### YOU MAY WISH TO CONSIDER:

Giving frequent (weekly or biweekly) assignments.

Most excellent teachers give students frequent assignments which allow them to apply course concepts and improve communication and problem-solving skills. Even in very large classes, these instructors make a point of reading and commenting on at least a sample of the papers or problem sets.

"If you assign papers," one humanities teacher says, "it's critical that you as well as the Ta's or Readers read them. Otherwise, you don't get any feedback." A faculty member in a professional school says that he always assigns three papers in undergraduate courses and four in graduate courses. "I want them to learn to write," he says, "and because the papers are always tied to the reading assignments, they allow me to see how well students really understand the material."

One faculty member requires students to write very short (one- or two-paragraph) abstracts or summaries of each reading assignment and to turn them in each week. "Although some students consider this very 'high school,' most find it useful for keeping up with the reading. The students also find these summaries useful for review and they help me know how well the students understand the material."

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

**Suggestion Number: 92 Give frequent quizzes**

IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if the students are bored or confused
- Identify and help students who are having difficulty
- Know the kinds of difficulties students are having

YOU MAY WISH TO CONSIDER:

Giving frequent quizzes.

One excellent science teacher gives students practice quizzes (of 10 to 15 minutes duration) throughout the quarter. "I don't grade the quizzes," he explains, "but I do read them and review any material with which a large number of students seemed to have difficulty. I also seek out any students who seem to be having real problems understanding the material and spend more time with them in my office or in the departmental course cents."

Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

**Suggestion Number: 93 Schedule an oral quiz with each student**

IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if students are bored or confused
- Identify problems individual students may be having
- Get to know your students better

## YOU MAY WISH TO CONSIDER:

Scheduling an oral quiz with each student in your office.

One teacher of engineering reports giving oral quizzes in which a student is given a series of problems to solve on the blackboard in his office. He has found this technique invaluable in understanding how students tackle problems.

"If you look only at students homework," he says, "you'll know whether they got a problem right or wrong, but it won't tell you why. Observing students as they apply concepts and solve problems gives you much more useful information about where your explanation or those of the textbook skip a step or are unclear."

## Limitations on Use of Suggestion

Discipline: Sciences and professional

Course Level: None

Course size: Probably not above 30

Mode: None

## **Suggestion Number: 94 Schedule individual appointments with students**

### IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if students are bored or confused
- Get to know your students
- Give help to students who are having difficulty
- Encourage students to come see you during office hours

## YOU MAY WISH TO CONSIDER:

Scheduling an individual appointment with each student.

A statistics professor felt that he was not being successful in generating class discussion. At the end of the third week, still unable to encourage class participation, he decided to pass around a sheet of paper with a list of 10 minute blocks of time when he would be available for individual appointments.

Each student was required to sign up for one the 10 minute appointments. They were told that the chief purpose was for him to get to know the students better and to listen to any complaints or suggestions they might have.

"I found that this was a real ice-breaker," he explains. "Even though most of our discussions were mainly chit-chat, some students used the opportunity to indicate

problems they were having in the course or to make suggestions about course improvements. Perhaps the chief benefit was that it gave me an opportunity to get to know the students. As a result, they seemed to feel more comfortable asking and answering questions in class."

"In addition, several students who were having problems understanding the material began to seek me out after class. I'm not certain they would have done so if I hadn't made this effort to get to know them individually."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: Up to 50-70

Mode: Lecture/discussion

#### **Suggestion Number: 95 Assign "minute papers" at the end of class**

##### IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if students are bored or confused
- Encourage students to listen actively during lectures
- Give students experience writing short essay answers

##### YOU MAY WISH TO CONSIDER:

Assigning "minute papers" at the end of some lectures.

"Minute papers," as used by a professor of physics, consist of two questions to which students give written responses at the end of each weekly lecture. "I call them `minute papers,'" he says, "because I preface them with the request that they take a minute or two to write on these two questions:

- (1) What is the most significant thing you learned today? and
- (2) What question is uppermost in our mind at the end of today's session?

"The minute papers started out purely as an attendance device," he explains. "As I began to read their responses, however, I found them very useful in evaluating how successful I had been in conveying the material that day. In fact, now I often quote one or two of their essay responses at the beginning of the next discussion period to get the discussion started."

As is the case with many educational experiments, this one had an additional unintended benefit. "Because these are mainly science students who are seldom asked to write, I

pointed out that these minute papers were good practice for the essay questions which would constitute my final. As the term progressed, I noticed an improvement in the papers: they became longer, better developed, and more carefully phrased."

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

#### **Suggestion Number: 96 Use index cards to get feedback**

##### IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if students are bored or confused
- Give students opportunities to suggest improvements in the course

##### YOU MAY WISH TO CONSIDER:

Distributing index cards several times during the semester and asking students to give you feedback on the course.

A professor of education asks students to respond to two questions, one on the front and one on the back of the index cards. The two questions he uses are, "How's it going?" and, "Any suggestions?"

Of course, if you have reason to think that there is a problem with a specific aspect of the course, you will get better information if you target your questions accordingly. For example, "Any problems with the text?" or "Students have complained in the past that I lecture too fast. I've been trying to improve. Is my lecture pace a problem for you?"

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

**Suggestion Number: 97 Ask students to define, associate or apply concepts**

IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if the students are bored or confused

YOU MAY WISH TO CONSIDER:

Asking students to give definitions, associations, and applications for difficult concepts or ideas.

Instead of waiting until the midterm or final to find out how many students understand the material, try handing out a short questionnaire or quiz on the basic concepts covered that day and give the students time (10 to 20 minutes) to complete them at the end of the hour.

An example of a questionnaire or quiz covering concepts for the week might read:

A. Concept Definition. As I understand it, the main idea concept, point, etc.) of today's lecture (or discussion) was:

B. Concept Applications. A good example of an application of this idea (concept, point, etc.) is:

C: Concept Associations. In my mind the main point of today's lecture is most closely related to the following concepts, ideas, people, places processes, events, or things. (Have students list several items)."

This suggestion was taken and adopted from Otis Ewing Lancaster, *Effective Teaching and Learning*, N.Y.: Gordon and Breach, 1974, pp. 70-71. One variation on this is to give the questions as take home quizzes in which case you may WANT TO: insist that the students choose different words (in giving definitions) and examples from those presented in lectures or assigned readings. Another variation is to call on particular students to answer each question orally at the end of the hour.

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 98 Use a question box to solicit comments or problems**

IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if students are bored or confused

YOU MAY WISH TO CONSIDER:

Using a question box to solicit students' questions, comments or problems.

A psychology teacher places a box in the back of the room for student questions, comments or problems. Students can drop questions anonymously into the box at the beginning of the class or during the break. After the end of the period, the teacher collects the box and reviews the questions.

This technique gives students an anonymous method for making their troublesome areas or questions known to the instructor. It can also help a faculty member identify major areas of difficulty wherever the same problems are raised by several students.

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 99 Periodically borrow students' lecture notes**

IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if the students are bored or confused

YOU MAY WISH TO CONSIDER:

Periodically borrowing lecture notes from several students in your class.

The best way to select students' notes is at random. Faculty members who have used this technique warn that it can be a very chastening as well as useful experience. "There was an incredible difference between what I thought I had said and the points I thought I had stressed, and what the students heard or felt was important to write down," one faculty member reported.



This exercise can be especially useful if previous student evaluations have indicated: (1) your lectures are not as well organized as they might be; (2) students find it difficult to identify what is most important; or (3) your lectures are so tightly packed and delivered so rapidly that it is difficult for students to take good notes.

A variation on this suggestion is to audiotape the lecture as well. This allows you to do a three-way comparison between what you thought you said (or intended to say), what you can hear yourself actually saying (including the way in which you said it), and what a random sample of students thought you said (or thought was important enough to write down).

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 100 Encourage students to form study groups**

##### IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if the students are bored or confused
- Help students get to know one another

##### YOU MAY WISH TO CONSIDER:

Encouraging students to form small study groups and to send representatives to see you about any difficulties their groups are having.

One humanities teacher who does this says, "Although I encourage the students to come see me about any problems they are having with the course, freshmen are often loath to do that. By encouraging them to form study groups, I am trying to help them get to know at least some of their fellow students and to take advantage of what they can learn from one another.

"Also, it seems to be easier for some students to come to me for assistance if they 'represent' a group, because the problems are then seen as common to many students, not just the group's representative. Faculty members can be very intimidating for some freshmen, even those of us who try very hard not to be. Also, many of these students were at the top of their high school classes and it is difficult for them to adjust to the competition at Berkeley. While it is difficult for them to admit that they don't understand

something, there is a certain comfort in knowing that some of their fellow students are in the same boat and that by joining forces they can help one another."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: Over 15 to 20

Mode: None

#### **Suggestion Number: 101 Establish a Liaison Committee**

##### IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if the students are bored or confused
- Get to know at least some of your students
- Identify any problems students may be having in the course

##### YOU MAY WISH TO CONSIDER:

Establishing a Liaison Committee of three to five students to meet with you once a week to discuss student difficulties or dissatisfactions.

In a very large class, the students should be selected on a "district" basis so that all students have relatively easy physical access to one of the members of the Liaison Committee. You can rotate membership on the committee from a list of volunteers, but be sure the entire class knows who the Liaison students are at any given time and how and why they should use them. Be sure, too, that the Liaison students understand their function and encourage them to circulate and seek out information from the other students.

This technique was initiated as a research project at the University of Minnesota and has been used successfully by 50 teachers at the University of Texas. Evaluations of its usefulness for both students and instructors indicate that most students felt that actual improvements had been made in the course as a result of the committees' interaction with the instructor, and students especially appreciated the opportunity to get to know one of their instructors better.

Benefits cited by faculty included increased faculty awareness of student learning needs and increased student awareness of the instructor's teaching problems and educational philosophy.

## Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

### **Suggestion Number: 102 Install a telephone "hotline"**

#### IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if the students are bored or confused
- Receive on-going feedback from students

#### YOU MAY WISH TO CONSIDER:

Installing a telephone "hotline."

A telephone "hotline" allows students to report course-related difficulties at the time they are having them, e.g., at 10:00 pm when trying to solve a problem or understand a difficult section in the text.

One economics professor received a mini-grant from the Academic Senate Committee on Teaching to install a telephone answering service in the Tas room and has used it for several years in a large introductory course. "Students are reminded of the availability of the 'hotline' throughout the course," he explains. "Although they can call me or the Ta's directly during regular hours, this allows them to report difficulties at odd hours or to register anonymous gripes on the tape. Each morning one of the Tas listens to the tape and refers the problems that should be taken up in lecture to me and those which should be taken up in the discussion sections to the other Ta's.

"Perhaps the most useful aspect of the telephone hotline is as a safety valve," the instructor explains. "There is no way a course of 800 is going to be anything but impersonal. I try to acknowledge that and give students as many chances as possible to be heard."

## Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: Above 150  
Mode: None

**Suggestion Number: 103 Attend or lead lab or discussion sections yourself**

IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if the students are bored or confused
- Give help to students who are having problems
- Get to know at least some of your students

YOU MAY WISH TO CONSIDER:

Attending or leading lab or discussion sections yourself.

Several faculty report that they always lead one lab or discussion group themselves so that they have firsthand knowledge of how the course is going.

"Students vary considerably in their command of prerequisite subject matter in this course," one faculty member explains. "It's a tough course and the chief task is to find out as soon as possible who is going to have trouble and to give them help early on. I can't find that out sitting in my office; I can't always depend on the Ta's to let me know. Also the atmosphere in the biological sciences is so fiercely competitive, many of the students try to hide their weaknesses until it is too late for me to help them."

Another faculty member in the sciences agrees. "I find there is no substitute for knowing firsthand how students are doing, what parts of the course they are grasping well, what parts need more explanation or more opportunities for practice."

Many excellent teachers also attend the lab or discussion groups led by their Ta's to observe or to participate. In labs, they circulate through the lab, observing, asking questions, or lending a hand to students who may be having special difficulties. In this way, they also hope to provide the Ta's with good role models.

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: Laboratory or discussion sections

**Suggestion Number: 104 Have students turn in their lecture notes**

IF YOU WANT TO:

- Know if the class is understanding you or not
- Give help to students who are having difficulty
- Motivate students to do their best work

#### YOU MAY WISH TO CONSIDER:

Having students turn in their lecture notes as a course assignment.

One faculty member in engineering requires that students hand in their lecture notes, course assignments, homework, quizzes, etc., two or three times a term, typically before the midterms or final exam. Students must prepare a detailed table of contents to accompany their notes.

"I find this is a good way to get a sense of how well students are understanding the material," explains the professor. "If someone is having difficulties I can spot them and give them some help.

"As an added bonus, students are able to leave this introductory course with a good set of detailed notes, and a useful table of contents, which will make it easier for them to locate this material when they need it in their later course work."

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

#### **Evaluate Instruction (105-109)**

#### **Suggestion Number: 105 Hand out short questionnaires to get feedback**

#### IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if the students are bored or confused
- Clarify reasons for students' confusion or boredom
- Get specific feedback and suggestions during the term

#### YOU MAY WISH TO CONSIDER:

Periodically handing out short questionnaires on specific aspects of the course.

This is a form of what professional evaluators call "formative evaluation" (as differentiated from a "summative" or end-of-course evaluation). It is designed solely to give you very specific, concrete information on where you can make improvements in course content or organisation, assignments, or aspects of your own teaching effectiveness during the same term rather than next time you teach the course.

Formative evaluation can be especially helpful if you are teaching a new or substantially revised course, adopting a new text or lab manual, or experimenting with a new mode of instruction. Many faculty members routinely administer specially tailored mid-quarter evaluations. Generally, they report that these evaluations dramatically improve their communication and rapport with students, even if there are few basic changes that they are able to make in the course that term.

Note: See also suggestion No. 109 on how to acknowledge mid-term feedback from students.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 106 Have students send you a telegram evaluation**

##### IF YOU WANT TO:

- Know if the class is understanding you or not
- Know if the students are bored or confused

##### YOU MAY WISH TO CONSIDER:

Having students send you a telegram evaluation.

A professor of public health says, "Midway through the course, I ask the students to write a telegram--strictly limited to 20 words or less--describing the most pressing problem they are having in the course. I tell them that they can address their telegram to me directly, to future students in the class, to the department chair-person, or to a friend or parent."

She finds the technique particularly effective if she reads the telegrams aloud anonymously and opens the class for discussion.

Another teacher also uses the letter or telegram approach to evaluation, but asks that the telegrams describe the course to date.

Note: See also suggestion No. 109 on how to acknowledge mid-term feedback from students.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 107 Have TIES conduct an oral evaluation with your students**

##### IF YOU WANT TO:

- Know if the class is understanding you or not
- Receive feedback midway through the course

##### YOU MAY WISH TO CONSIDER:

Inviting a colleague or member of the TIES staff to conduct an oral evaluation with your students midway through the semester and report the results back to you.

This procedure was developed by Joseph Clark of the University of Washington and has been tried out in several classes at Berkeley. After introducing the visiting evaluator to the class you must leave the room for 30 minutes. The evaluator asks the students to form small groups of five or six who are then instructed to take 10 minutes to: (1) select a spokesperson/recorder; (2) decide on something in the course they find very helpful; (3) decide on something they would like changed in the course.

While the groups are discussing the issues, the evaluator circulates among them making certain that the groups are working on the task. At the end of 10 minutes, the spokesperson from each group reports the results of each group's discussion which the evaluator records on the board. After all groups have reported, the evaluator summarises what the overall consensus seems to be and asks for clarification on any areas in which there was disagreement between the groups.

The comments on the board are recorded on paper to be shared with the instructor by the evaluator later that day.

See also suggestion No. 109 on how to acknowledge mid-term feedback from students.

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: Under 100-150

Mode: None

### **Suggestion Number: 108 Videotape your class**

IF YOU WANT TO::

- Know if the class is understanding you or not
- Know if the students are bored or confused
- Get feedback on your teaching
- Develop a more interesting style of presentation

YOU MAY WISH TO CONSIDER:

Videotaping your class.

Several Berkeley professors have had their classes videotaped. One zoology professor has had his lectures videotaped many times. "The first time was a shattering experience," he says, "but it is the most effective kind of feedback you can get. I have found videotape invaluable for getting rid of annoying mannerisms, for learning to vary the speed of my delivery and to put more expression and greater clarity into my explanations."

IF YOU WANT TO: have your class videotaped call the Educational TV office (2-2535). Guidelines for observing a videotape of your teaching are available in a short publication entitled, Using Systematic "Live" and "Videotaped" Observation in TA Training which can be obtained from TIES (2-6392) or from the Television office.

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: Lecture primarily

### **Suggestion Number: 109 Respond visibly to student suggestions and criticisms**

IF YOU WANT TO::

- Know if the class is understanding you or not



- Know if the students are bored or confused

#### YOU MAY WISH TO CONSIDER:

Conducting and responding to a mid-term evaluation by students.

A critical aspect of conducting a midsemester evaluation is to let students know that their comments have been thoughtfully considered. At the very next class meeting, thank the students for their comments and their suggestions and give a brief, non-defensive account of those suggestions you can use this term, those which must wait until the next time you teach the class and those which you either cannot or, for pedagogical reasons, will not change.

Students often make valuable suggestions or point out problems that can be easily remedied. A professor of forestry conducted a midterm evaluation in which he received numerous complaints that he talked too fast during lecture. At the beginning of the class period immediately following the evaluation, he playfully handed out signs which said "Slow down," "Go more slowly," and "Too Fast!" to students scattered around the room. During the lecture, students were encouraged to put up a sign when they felt he was lecturing too rapidly.

Of course, not all student suggestions can or should be followed. For example, you may not give students as much guidance as they would like because you are consciously trying to foster their intellectual independence. The important thing is to acknowledge their suggestions and to give a brief explanation as to why you cannot follow all of their suggestions.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Section Fourteen: Have Students Apply Concepts (110-115)**

#### **Suggestion Number: 110) Have students solve problems at the board**

#### IF YOU WANT TO::

- Have students apply concepts to demonstrate understanding

## YOU MAY WISH TO CONSIDER:

Having students solve problems at the board.

A faculty member who teaches quantitative methods calls on students to come up to the board to solve problems. Each student is permitted to bring a fellow student as a "coach" so that he or she is not put on the spot. At the beginning of the term the problems are based on homework assignments. Toward the end of the term, they are based on impromptu examples. This method increases student discussion and interaction and encourages students to pay close attention in class.

### Limitations on Use of Suggestion

Discipline: Courses involving quantitative reasoning

Course Level: None

Course size: None

Mode: None

### **Suggestion Number: 111) Use the Socratic method**

#### IF YOU WANT TO::

- Have students apply concepts to demonstrate understanding
- Emphasise conceptual understanding
- Encourage class participation and discussion

## YOU MAY WISH TO CONSIDER:

Using the Socratic method to lead students through the steps involved in applying a particular concept.

For example, taking a concept like "licensing" as a public policy tool, a political science teacher guides the students through the steps involved in creating a regulatory commission, e.g., to license prostitution. "What would such a commission look like?" he asks. "Who would WANT TO: serve on it? What problems would it encounter? I force the students to apply abstract concepts and principles from their readings to new situations," he explains.

Later in the term, he has the students actually simulate the workings of a particular regulatory commission and engage in debates on the pros and cons of particular policy solutions.

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: Lecture/discussion

### **Suggestion Number: 112) Pose a question and call on a student to answer**

IF YOU WANT TO::

- Have students apply concepts to demonstrate understanding
- Question effectively

YOU MAY WISH TO CONSIDER:

Posing a question and calling on a student by name to answer.

Students often can provide valuable responses to questions that are put to them directly, responses which they might not otherwise volunteer. A faculty member of business administration keeps the class roll in front of him and calls upon students at random to answer questions based on the reading.

"It's terrifying for some students, at least at first, but it's very effective. If students can't respond because they have not done the assigned reading, they will feel badly. But they will usually make a greater effort to be prepared to participate in subsequent class meetings."

Many law professors use a similar strategy, but one employs a slight variation. At the beginning of the term she asks those students who do not wish to be called on to write their names on a piece of paper. She then places a star next to their names as a reminder to pass them by. "I find that few students exercise this option and some that do change their minds over the course of the term."

A similar approach is to give students the option of saying "I pass" if they prefer not to answer a particular question posed to them. In a French class, for example, a student may respond by saying, "C'est une question indiscrete," and the teacher will either call upon another student or ask if there is anyone who does not find the question "indiscrete".

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 113) Provide students with time to think about an answer**

IF YOU WANT TO::

- Have students apply concepts to demonstrate understanding
- Know if the class is understanding you or not
- Use effective questioning strategies

YOU MAY WISH TO CONSIDER:

Providing students with time to think about an answer to a question.

Many teachers are too quick to answer their own questions without giving students a chance to reflect on the question and volunteer a response. The more important and complex the question, the more important a few minutes of thinking time become. While these periods of silence at first might be uncomfortable for both teacher and student, they can often improve the quality of the students responses.

It may be helpful to let students know that some "wait time" will be provided. Likewise, silence may be acknowledged by saying, "This question takes some time to think about."

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 114) Probe for adequate answers from students**

IF YOU WANT TO::

- Have students apply concepts to demonstrate understanding
- Use effective questioning strategies

YOU MAY WISH TO CONSIDER:

Probing for adequate answers from students.

Probing involves asking the same student a series of questions, when his or her initial response is inadequate. The procedure is used when the student is suspected of possessing the necessary background knowledge for handling the question, but does not produce the full or correct answer.

For example, a teacher may ask a complex or abstract question. If a student is not able to respond, the teacher moves to a lower level question based on components or an example.

If the student provides an incomplete response, he or she is asked another question designed to bring out a fuller answer. However, if the student gives an incorrect response, the teacher gives an obvious example which reveals the student's response to be untrue, e.g., saying "what about...?" The same technique can be used with an entire class as well as a single student.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 115) Answer a question with a question**

IF YOU WANT TO::

- Have students apply concepts to demonstrate understanding
  
- Respond to student questions
- Encourage students to think for themselves

YOU MAY WISH TO CONSIDER:

Answering a question with a question.

Students sometimes ask questions about term projects, experiments, or papers out of insecurity or because they want the teacher to tell them what to do. In many cases there is no one "right" answer; students are asking questions of judgement. Although a teacher's reasoned judgment can be helpful to student learning, often it is better for students to arrive at their own conclusions.

For example, in studio or laboratory courses, students often ask their professor, "Do you think I should do it this way?" or "Should I do this or that?" A professor of architecture believes that he does students a disservice by readily giving his own views and telling students what to do and instead he takes a different tack.

"I ask the students questions they should ask themselves, e.g., 'What would be the consequences of doing this?' or 'What are the relative advantages and disadvantages of this or that approach?'" he explains. "I want them to think through the implications of the alternatives. It's far more important that students learn to ask themselves the right questions than to get my opinion."

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: Graduate  
Course size: None  
Mode: None

#### **Section Fifteen: Give Personal Help to Students Having Difficulty (116-123)**

##### **Suggestion Number: 116) Schedule specific topics for office hours**

#### IF YOU WANT TO::

- Give personal help to students having difficulty
- Get to know students better
- Offer extra review sessions

#### YOU MAY WISH TO CONSIDER:

"I find it useful to identify in advance a specific topic for my office hours," says a linguistics professor. "I encourage students who are having difficulty in that area to come for help." Based on past experiences, she knows which concepts and ideas cause problems and she schedules her office hours to provide further elaboration and discussion on these topics.

"This way, if a student misses a class or doesn't fully understand the topic, he or she has another chance at the material during office hours." ta's are also encouraged to attend these sessions so that they better understand areas of student difficulty.

Another professor uses one office hour a week in a similar fashion, although specific topics are not necessarily covered by the course. "Sometimes they are enrichment topics; sometimes they are remedial, like how to do a term paper," he says.

As an added bonus, students and the professor get to know one another in a small informal setting.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 117) Give a diagnostic test at the beginning of the**

##### IF YOU WANT TO::

- Give personal help to students having difficulty
- Relate to students as individuals
- Know what knowledge and skills students bring into your course

##### YOU MAY WISH TO CONSIDER:

Giving a diagnostic test at the beginning of the semester.

One biochemistry teacher frequently gives a diagnostic test covering knowledge and skills prerequisite to the course. The test, which is given in the first week, is not graded. "Its sole purpose is to help me identify those students who need extra help so I can begin working with them early in the course. The results are shared with the individual students."

"Students need to recognise their weaknesses and begin to correct them if they are to succeed in the course. But they have to be given the means for correcting deficiencies. I meet with those students whose preparation is inadequate and assign them special problem sets on a regular basis."

#### Limitations on Use of Suggestion

Discipline: Courses with prerequisites

Course Level: None

Course size: None

Mode: None

### **Suggestion Number: 118) Provide self-instructional materials**

#### IF YOU WANT TO::

- Give personal help to students having difficulty in the course
- Help students early in the course
- Help develop "prerequisite" skills in students who do not have them

#### YOU MAY WISH TO CONSIDER:

Providing self-instructional materials or "modules" which include basic principles and skills needed to succeed in your course.

A faculty member in biochemistry hired a graduate student to develop computer-assisted instructional units for review and drill by students whose backgrounds in science and math were weak. "I give a short diagnostic test at the beginning of the course to help identify students who will need this kind of review in order to keep up with the course," he explains.

A physics professor also gives students a review module covering basic algebra during the first week of class. "Students who are unable to pass a quiz after reviewing this unit are not allowed to continue in the course," he says, "because there is no way they could succeed without an understanding of the fundamentals of algebra." Such students are then advised to make use of the Student Learning Center or to take an algebra review course before enrolling in introductory physics.

#### Limitations on Use of Suggestion

Discipline: Sciences primarily

Course Level: Undergraduate

Course size: None

Mode: None

### **Suggestion Number: 119) Fill in the cultural gaps with handouts**

#### IF YOU WANT TO::

- Give personal help to students having difficulty
- Help students meet performance objectives
- Fill in important cultural gaps the students may have



## YOU MAY WISH TO CONSIDER:

Handing out brief excerpts or abstracts of contextual material to fill in any cultural gaps the students may have.

One professor of Near Eastern studies distributes such hand-outs fairly often in a lower division survey course. "I don't expect students to know much about the geography, religions, literature, and social and political institutions of the area we are studying," he says. "However, more and more, I find that I cannot make many assumptions about what the students know about Western culture either."

"This poses some difficulty for me as well as for the students, because I think one of the best ways to teach something 'foreign' is by analogy with something that is familiar. Yet, in order to do that, I find that it is increasingly necessary to provide information on the so-called familiar Western examples as well." Among the contextual materials he distributes in excerpted or abstracted form are fables, fairy tales, nursery rhymes, biblical stories or quotations, and Greek mythology.

## Limitations on Use of Suggestion

Discipline: Humanities and Social Sciences

Course Level: Undergraduate

Course size: None

Mode: None

## **Suggestion Number: 120) Require below "C" level students to see you**

### IF YOU WANT TO::

- Give personal help to students having difficulty
- Know if the class is understanding you or not
- Motivate students to do their best work

## YOU MAY WISH TO CONSIDER:

Requiring all students who are doing below "C" level work on assignments or quizzes to see you.

One teacher of forestry does this in all his undergraduate courses. Another forestry professor writes a note, "Please see me" to students who score below 70 on his weekly quizzes. "It's important to find out why students score low," he explains. "If they are having difficulty understanding the material, I can offer to help them. If it's a question of

motivation or the student placing less priority on my class, that's OK too, but it helps me as a teacher to know the reason for their poor performance. Showing concern is also a powerful motivator for some students: they automatically begin to do better."

A zoology professor concurs. "I call students in who get less than 50% on the biweekly quizzes," he says. "In a way I play parent with them; I `sit on' them somewhat. I think I understand better now than when I began teaching the need some students have for external motivation."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 121) Meet with each student who does poorly on exams**

IF YOU WANT TO::

- Give personal help to students having difficulty
- Motivate students to do their best work

YOU MAY WISH TO CONSIDER:

Meeting regularly with each student who does poorly on the midterm.

One professor of forestry gives the first of two midterms early enough in the course to allow him to identify any students who may be having difficulty. After the first midterm, he asks each student who did not pass to talk with him about the exam results. In these meetings he tries to discover each individual student's problem. "I ask questions such as `Did I misread anything you gave as an answer?' or `What problems did you have in taking the exam?'"

He concludes each meeting by telling students that he is certain that they can do better and striking a bargain with them. "Usually, I tell them that I'll forgive the first midterm and let their grade be determined solely on the second midterm and final," he says, "on the condition that they agree to meet with me weekly to go over homework assignments and to get additional help.

"About nine or ten students take advantage of this help each term," he explains. "As a result of this technique, in the ten years I have been teaching I have not had to flunk a single student in a course. Giving students a second chance, I find, is a powerful motivator."

## Limitations on Use of Suggestion

Discipline: None

Course Level: Undergraduate

Course size: None

Mode: None

### **Suggestion Number: 122) Integrate weaker students through group work**

#### IF YOU WANT TO::

- Give personal help to students who are having difficulty
- Use peer teaching methods

#### YOU MAY WISH TO CONSIDER:

Making special efforts to integrate the weaker students into the class through small group work.

One foreign language teacher divides students into small groups. "I pose a question to each group," he explains. "One student in each group gives the answer orally; a second student corrects the first student, if necessary; and the third student writes the answer on the board. Each student has a role, and these roles are rotated throughout the quarter.

"Initially I assign the weaker students to do the boardwork," he says, "although I am careful not to do this in an obvious way." This allows the weaker students to participate, but in a way which will reinforce their own learning without holding back the others. "Also, I often ask a better student to help out if a weaker student is having difficulty responding. Then I have the second student repeat the question to the first student to give him another shot at it. Peer teaching can be extremely effective," he says, "especially when the class takes responsibility for its weaker members. I find this approach superior to one-on-one tutoring during office hours."

Several other excellent teachers also form small peer teaching groups in discussion sections or labs, carefully integrating the weaker students into groups of average and above average ability. Some explicitly suggest ways which the better students might help the others or ways in which the students who are having difficulty might learn from the others.

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Suggestion Number: 123) Refer students to the Student Learning Center**

#### IF YOU WANT TO::

- Give personal help to students who are having difficulty
- Refer students for more help than you are able to give them

#### YOU MAY WISH TO CONSIDER:

Recommending that students who need substantial assistance take advantage of the tutorial service of the Student Learning Center.

"I make extensive use of the Student Learning Center," a history professor notes. "I have referred many students there for help. Although I make quite specific comments on students' papers, the SLC people are much more experienced than I am at seeing the underlying problems that a student might be having and in giving much more extensive assistance. It's just not as easy for me to see the students' pattern of mistakes."

A professor of English also recommends the Student Learning Center highly. "Their tutors are really quite good," he says, "in fact, many of my better students have been tutors at the Center."

## Limitations on Use of Suggestion

Discipline: None

Course Level: Undergraduate

Course size: None

Mode: None

### **Part One: Get Acquainted (124-130)**

**Suggestion Number: 124 Have students fill out a background questionnaire**

IF YOU WANT TO:

- Relate to students as individuals
- Invite students to share knowledge and experiences
- Learn something about the students' backgrounds

YOU MAY WISH TO CONSIDER:

Having students fill out a brief questionnaire describing their backgrounds and interests.

A faculty member in political science, for example, asks students to describe their most memorable experience that is relevant to the subject matter of the course. A faculty member who teaches an area course asks about students' travel experiences or knowledge of the people of this area through relations, friends, or through vicarious reading, etc.

Typically such questionnaires include information on the student's major, prerequisite or related courses taken, job experiences, career plans, and so forth. Faculty members use this information to understand their students and to call on those whose experiences may give them a different perspective.

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 125 Pair students up to introduce each other**

IF YOU WANT TO::

- Relate to students as individuals
- Encourage students to get to know one another
- Create a relaxed atmosphere

YOU MAY WISH TO CONSIDER:

Pairing students up to introduce themselves first to one another and then to the class.

In seminar courses, most faculty members ask students to introduce themselves briefly to the group. A professor of English has students pair up for a few minutes to interview

each other about their backgrounds, literary interests, and expectations from the course. He then asks members of each pair to introduce each other to the group as a whole.

"I think this approach tends to establish an atmosphere in which students feel free to talk," he explains. It also helps set a pattern for discussion in which students are expected to listen to one another and to address their comments and questions as much toward one another as toward the instructor.

### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: Not more than 50

Mode: None

### **Suggestion Number: 126 Have students do a structured exercise**

IF YOU WANT TO::

- Relate to students as individuals
  
- Encourage students to get to know one another
- Create a relaxed class atmosphere

YOU MAY WISH TO CONSIDER:

Developing a structured exercise in which students share their backgrounds with one another.

A faculty member teaching a graduate course in social welfare says, "I used to have students introduce themselves, but I found that led to competition among them. Each one tried to outdo the others vita. Now I divide the class into groups of threes and have them do a get acquainted exercise."

In these groups, each student has an opportunity to play the role of Listener, Speaker and Observer. There are three rounds each lasting at least five minutes, so that every student plays each role. The Listener asks in his/her own words, "How did it happen that you came to the School of Social Work?" The Speaker responds; the Listener is allowed to ask one clarifying question, and then recounts what he/she heard. The Observer then relates his or her perceptions of how well the Listener recalled the facts and how well the Listener attended to the Speaker, i.e., paid attention, maintained eye contact, etc. Students then change rolls and do another round. The complete exercise takes about 20 minutes.

"I have found this introductory exercise useful in helping students get acquainted in a non-threatening environment," comments the faculty member. "It is especially appropriate in a course on counselling and interviewing, but it might also be used in other seminar or discussion classes where it is important for students to learn how to listen to one another."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: Under 30

Mode: None

#### **Suggestion Number: 127 Enter the class from the same door as the students**

##### IF YOU WANT TO::

- Relate to students as individuals
- Have an interesting style of presentation
- Communicate your interest in students

##### YOU MAY WISH TO CONSIDER:

Entering the class through the same door as the students.

A faculty member in the biological sciences says that he always does this when teaching in a large lecture hall. "I enter from the back of the room with the students, pausing to chat with students on either side of the aisle before class begins," he says.

"You have to get into the students' skins to really teach well," he believes. "It helps to see the classroom from their vantage point and to get a sense of the class from their perspective. Not enough faculty members do this," he believes, "and among other things, it shows up in boardwork that can't be seen past the tenth row."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: Classes in large lecture halls

Mode: None

#### **Suggestion Number: 128 Provide a relaxed informal atmosphere**

IF YOU WANT TO::

- Relate to students as individuals
- Get to know your students
- Create a climate for discussion

YOU MAY WISH TO CONSIDER:

Providing a relaxing informal atmosphere.

"I tend to bring coffee and donuts periodically to my seminar," says a professor in engineering. this helps relax the students and lends a congenial tone to the discussions."

"I find that this simple act seems to make the sessions more interactive. People tend to discuss issues over coffee and donuts more readily than in a fixed formal classroom setting."

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: Not more than 50

Mode: None

**Suggestion Number: 129 Host an informal social gathering for your students**

IF YOU WANT TO::

- Relate to students as individuals
- Create a relaxed positive environment
- Get to know your students better

YOU MAY WISH TO CONSIDER:

Hosting an informal social gathering for your students.

Several faculty members extol the values of meeting with students socially midway through the term. "Removing the trappings of the traditional classroom loosens people up," one professor comments.

"I host an informal party halfway through the course. Students become comfortable in saying whatever they WANT TO: and are more likely to express their views when they know they are being treated as individuals."



Other faculty members report holding pot-luck gatherings in parks or picnic areas.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: 50 or less

Mode: None

#### **Suggestion Number: 130 Invite students to lunch**

##### IF YOU WANT TO::

- Relate to students as individuals
- Get to know your students

##### YOU MAY WISH TO CONSIDER:

Inviting students to lunch.

Even in large lecture classes, it is possible to make personal contact with many of the students. A physiology professor for example, takes two students to lunch each week. Each week she randomly selects two names which are placed on the board at Monday's lecture. The two students are asked to see her after lecture and a mutually convenient time is set for lunch that week.

"In this way I get to know at least 30 students in the class fairly well," she notes. "Knowing these students helps my lecturing because I am better able to 'pitch' a lecture if I know the interests and abilities of students in my class. It's also a lot easier to lecture to familiar faces."

A faculty member of business administration uses a similar technique. "I set aside three luncheon dates during the semester and invite students who would like to meet with me informally for lunch at the Faculty Club to sign up." Each term 15 to 20 students avail themselves of this opportunity.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Learn Students' Names (131-136)**

**Suggestion Number: 131 Ask students their names whenever possible**

IF YOU WANT TO::

- Relate to students as individuals
- Learn student names

YOU MAY WISH TO CONSIDER:

Asking students their names whenever possible.

Some faculty members find that learning students names requires concentration and repetition. One science teacher, for example, says, "I ask students their names at every opportunity: whenever one comes to visit me during office hours, whenever I see a familiar face in the hallways or crossing the campus, and whenever a student asks a question before or after class. Students are hungry for some recognition of their individuality, and they appreciate it enormously when I take time to learn their names."

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 132 Use index cards as a mnemonic device**

IF YOU WANT TO::

- Relate to students as individuals
- Learn students' names

YOU MAY WISH TO CONSIDER:

Using index cards as mnemonic device.

As soon as you have a list of the students enrolled in your class, write each of their names on an index card. On the first day of class, call roll, laying the cards on your desk by seat and row to reflect where each students is sitting in class, refer to the index cards and use students' names whenever possible.

A faculty member who uses this technique finds it especially effective to return to her office immediately after class and lay out the cards in the same order and review the names. "I set a goal for myself of learning 5 names each time the class meets. With a class of 30, I find I can learn everyone's name within the first two weeks without any difficulty."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: Under 100

Mode: None

#### **Suggestion Number: 133 Post students' names prominently**

IF YOU WANT TO::

- Relate to students as individuals
- Learn students' names

YOU MAY WISH TO CONSIDER:

Posting students' name prominently in a lab or seminar.

A faculty member in the sciences has each student write his or her name on an index card and tape it above the assigned lab station. Using this technique, from the first day, he can begin calling students by name. "This one simple thing," he says, "may be the most important thing I do to establish a good learning environment where students feel free to approach me, ask questions, and to get help if they need it."

An engineering professor follows a similar routine in his seminar classes which tend to have 15-20 students. "I use 5x8 cards folded lengthwise," he says. "On each card I write the student's name as large as possible with a bold felt tip pen. I set these cards around the table so that the students can quickly learn each other's names in the same way that I do."

Place names or name tags are widely used by professional organisations and conferences, of course, and faculty members are increasingly learning their value in the classroom.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 134 Make a game of learning students' names**

IF YOU WANT TO::

- Relate to students as individuals
- Learn students' names

YOU MAY WISH TO CONSIDER:

Making a game of learning students' names.

A professor of forestry uses what he calls the "Name Game" with students to get everyone in the class acquainted. First, the students introduce themselves and tell the class something about their majors, their areas of interest, etc. Then he says, "Okay, let's try that again with just the names; only this time you will have to listen very carefully because I want you not only to introduce yourself but give the names of the students who came before you."

The first student gets off easy, since she has only to introduce herself. The second person has to give his own name and the name of the student before him, and so on. "I put myself in last position," he explains, "and by that time I try to name all the students in the room. I find that it is not only an effective way to learn their names, but the game-like quality of it breaks the ice and helps to create a sense of community."

Another teacher in the social sciences uses a similar game, called the "Ball Toss Exercise," wherein students stand in a circle and introduce themselves. After the full round of introductions, the teacher tosses an imaginary ball to one of the students, calling out his or her name as she does so. That student then has to toss the "ball" to another student while calling out his or her name, and so forth around the circle.

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 135 Arrive at class 10 minutes early to talk with students**

IF YOU WANT TO::

- Relate to students as individuals
- Learn students' names

## YOU MAY WISH TO CONSIDER:

Arriving at class ten minutes early each day and talking informally with students sitting in different sections of the room.

"I try to target a different section each day," a history professor says, "talking with students about the course or more general topics, getting to know their names and something about them as individuals. It helps me to remember a name if I can connect it with a place, an interest, a personality trait. An easy example would be Miss Baker from Bakersfield."

This teacher, like many others, believes that addressing students by name helps to break the excessive formality of a large lecture class and creates a more positive classroom environment.

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

## **Suggestion Number: 136 Consciously use students' names whenever possible**

### IF YOU WANT TO::

- Relate to students as individuals
- Learn students' names

## YOU MAY WISH TO CONSIDER:

Consciously using students' names whenever possible.

"I call roll several times during the beginning of the term to connect faces and names as soon as possible," a professor of forestry says. "Later, if a student looks familiar but I can't remember his or her name, I simply admit it and ask the student to tell me again. Then I make a point of using the name right away to help me remember it the next time."

A professor of entomology says, "In a class of 100 there are always three or four names that I don't seem to be able to learn. Nevertheless, the students greatly appreciate the effort."

Another strategy is to walk around the class while students are working on a quiz or problem and try to match faces with names. A science teacher says that he circulates for 10 or 15 minutes then goes back to his desk and tries to write everyone's name down. "This really reinforces my memory," he says.

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

#### **Section Seventeen: Be Accessible Outside of Class (137-141)**

##### **Suggestion Number: 137) Keep some time free after class to talk with students**

###### IF YOU WANT TO::

- Be accessible to students out of class
- Manifest a genuine interest in students
- Get to know your students

###### YOU MAY WISH TO CONSIDER:

Keeping the hour or two following a class open to talk with students.

Make a habit of staying after class to talk with students. "The biggest turn-off for students is for a faculty member to immediately to gather up his notes and his briefcase and virtually beat the students to the door after class," a professor of public health points out. "This suggests that he is too busy for students. I have developed a technique of loitering after class, very slowly erasing the boards and talking with students as they leave. The result is that after the first few days of class, more and more students linger as well and I get to know many of them in that way."

If another class is scheduled in the room immediately following your class, then do as a biochemistry teacher does and tell your students that you will stay in the hall for ten minutes following lecture to respond to students' short questions.

Hold office hours immediately following class. The same biochemistry teacher also schedules his office hours to follow the class meeting. "That way students who bring up more complicated questions right after class are invited to accompany me back to my office. I've found that students are more likely to have questions or comments at the end of a class when the material is still fresh," he notes. "This strategy lets me address their concerns immediately."

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Suggestion Number: 138) Go to class before it begins**

#### IF YOU WANT TO::

- Be accessible to students out of class
- Check out the room and equipment in advance
- Get to know your students

#### YOU MAY WISH TO CONSIDER:

Going to class before it begins.

A physics professor makes a point of going to his classes a half-hour early (if the room is vacant) to erase the board, check out the equipment and demonstrations he will be using and write a brief review on the board (e.g., pertinent equations, key phrases, topic areas).

"This activity gets me in the teaching frame of mind and refreshes the students about the important points we covered the last time," he notes. "It also has the unintended value of increasing the opportunities I have to talk informally with students. Five or six students come early to the class each time to ask questions, share ideas, or just talk."

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Suggestion Number: 139) Give out your home phone number**

#### IF YOU WANT TO::

- Be accessible to students out of class
- Manifest a genuine interest in students

YOU MAY WISH TO CONSIDER:

Giving out your home phone number in class.

Several faculty members encourage students to call them at home if they have any questions about an assignment. "Just not after 2:00 a.m.!" says an English professor. He finds that students rarely abuse this invitation. "I usually get about six calls per term out of several hundred students. It's actually economical for me as well as for the students since it is a lot less time-consuming to clarify an assignment the night before it's due than to negotiate a grade or an incomplete for a student who did the wrong assignment. I've found it's cost-effective to be a bit more cooperative and flexible at the front end."

A professor of political science agrees. "Even in my large classes (over 450) I rarely get more than a dozen calls, but the fact that I give out my number lets students know I am available if they need me."

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 140) Keep your office door open as much as you can**

IF YOU WANT TO::

- Be accessible to students out of class
- Increase your contact with students

YOU MAY WISH TO CONSIDER:

Keeping your office door open unless you really cannot be disturbed.

"Students should have first priority on my time," one engineering professor says. "I always keep my office door open when I am in and am willing to stop whatever I am doing if a student comes by. It's important not to appear stand-offish, to act put-upon, bored, or too busy to spend time with students out of class."



When he is working in the lab, he leaves a note on his office door inviting students to drop by the lab if they WANT TO: talk. "Actually, I like to have students visit me in the lab," he says, "because there they can really see me at work, and can get some idea of what I do."

Finally, because he has discovered that some students will never come to the office or lab, he tries to spend several hours a week in the department course center where the students study, socialise, eat lunch, etc. There he can converse with them informally and get to know them better.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 141) Do some of your own work in your campus office**

IF YOU WANT TO::

- Be accessible to students out of class
- Get to know your students

YOU MAY WISH TO CONSIDER:

Doing some of your own work in your campus office.

Several professors do non-teaching work in their campus office with an open-door policy.

"I tell students that if the door is open they should feel free to come in and ask whatever questions they have," one teacher of dramatic art says. "On the other hand, if the door is closed, it means either that I am not in or I prefer not to be disturbed."

An engineering professor follows the same policy. He tells his students that even outside of formal office hours. "If you catch me in my office, I'm fair game. Being a UC Berkeley professor is my number one job, so I'm around the office a lot."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Section Eighteen: Have an Interesting Presentation Style (142-150)**

**Suggestion Number: 142) Relate the course material as a story**

IF YOU WANT TO::

- Have a more interesting style of presentation

YOU MAY WISH TO CONSIDER:

Looking for ways to relate the course material as a story.

"I always try to tell some kind of story," says a teacher in the biological sciences. "My primary belief about communication is that it doesn't matter what you say if you can't get them to listen."

In describing his preparation for a lecture for a large class he says, "Because I already know the material very well, most of the preparation goes on in my head for several days. Then, the night before, I begin to concentrate on it very intensely; it's a little like the 'psyching yourself up' that actors or football players describe before a performance or a big game. Then I begin to outline the lecture, focusing on the major points and how they might be told as a story."

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 143) Begin with an incident, example or anecdote**

IF YOU WANT TO::

- Have an interesting style of presentation
- Capture the students' interest

## YOU MAY WISH TO CONSIDER:

Beginning class with an incident, example or anecdote to get the students' attention.

A faculty member in history who does this says that he often begins by reading aloud a short passage from a primary source or a story to illustrate what his major theme or point will be in the lecture. "For example, I might start out by stating that the Wizard of Oz is a parable for progressivism and read passages from it to illustrate my major thesis. I then get the students to help identify all the different characters and what they represent."

"I usually end with a quotation that pulls together what I have been trying to say," he says, "Also, whenever possible, I try to link the past with current events, to show how the topic is important for the present."

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

## **Suggestion Number: 144) Focus lectures around a common object or event**

### IF YOU WANT TO::

- Have a more interesting style of presentation
- Capture students' interest
- Break the ice in a big class

## YOU MAY WISH TO CONSIDER:

Focusing your lectures around a common object, event or phenomenon which exemplifies the major concepts of the course.

A faculty member in the biological sciences calls this his "potato lecture." "Biology is an empirical discipline; it depends on observation and investigation. I pass out potatoes to all 700 students in the class and then begin a kind of Socratic dialogue with them about the kinds of things they can observe about their potato. You have to overcome almost all of their previous experiences," he explains. "Although potatoes have been familiar objects to them since they were hatched, they don't have the foggiest idea what a potato is. I stress what you can get out of common everyday experiences by asking the right questions. I poll them on their observations, help them ask questions and describe the way they could investigate answers."

An interactive exercise around a common phenomenon tends to "break the ice" between faculty and students even in a large lecture course.

After the lecture, some students cook their potatoes and others plant them. Months later, I still get stopped by students who WANT TO: tell me how their potatoes are doing," he says.

### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Suggestion Number: 145) Open with gusto and finish strong**

IF YOU WANT TO:

- Have an interesting style of presentation
- Capture students' interest

YOU MAY WISH TO CONSIDER:

"Opening with gusto" and "Finishing strong."

Professor Otis Lancaster of the University of Pennsylvania points out the advantages of giving special thought to the beginning and ending of each lecture.

"The opening should secure the students' attention and give them the desired 'mental set'. Get off to a good start. Do something to command attention from the outset. Put some punch into your opening."

"Have some form of attention getter...some gadget or piece of hardware whose operation depends upon the principles of the day's lesson usually excites attention. Carefully planned questions or statements can also develop the curiosity necessary to gain attention. Action is always an attention-getter. If you intend to use charts or models for demonstration materials, have these brought in front of the class after the class is assembled or keep charts covered until class starts. This will usually whet their curiosity and make them more eager to see what is going to happen.

"The ending is as important as the beginning. Avoid letting a class session fade into nonexistence. Make an impressive ending. For example, end with: a question or problem - leave it for the class to cogitate and answer before next meeting; a quotation which conveys the essential theme; a summary--a recapitulation--a miniature review (keep it brief); or what to do before the next class." (Lancaster, Otis E., *Effective Teaching and Learning*, N.Y.: Gordon and Breach, 1974, pp 122-24.)

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course Size: None  
Mode: Lecture

#### **Suggestion Number: 146) Focus on five or six different students around the room**

##### IF YOU WANT TO::

- Have an interesting style of presentation
- Vary the speed and tone of your voice
- Know if the students are understanding you or not

##### YOU MAY WISH TO CONSIDER:

Focusing on five or six different students each day and give your lecture as if you were talking to them individually.

Many speech teachers encourage people to think of a lecture as an enlarged or public conversation, and several excellent lecturers told us that they lecture to a class in the same way they would talk to a few students. "By focusing on a few students, I am more relaxed and informal; this helps me to concentrate more on the ideas I WANT TO: convey than the impression I might be making," one teacher said. "I think that, as a result, I speak with more expression and conviction."

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None

Mode: Lecture primarily

**Suggestion Number: 147) Exaggerate everything about your presentation**

IF YOU WANT TO::

- Have an interesting style of presentation
- Hold students' attention in a large auditorium

YOU MAY WISH TO CONSIDER:

Exaggerating everything about your presentation in a large auditorium class.

A professor of economics believes that physical exaggeration and even a bit of hyperbole are the keys to success in lecturing in a large auditorium. "You have to remember that 800 students constitutes an audience, not a class in the normal sense," he points out. "When you are in front of a large audience, everything you would normally do in lecturing to a class of 30 or even 100 tends to look small, stiff and formal. You have to exaggerate everything, make it all 'larger than life,' IF YOU WANT TO: capture and hold the audience.

"In the large introductory course, I stride the stage with long steps, I make sweeping gestures, I ask broad rhetorical questions and make ridiculous puns, I pound the lectern and raise and lower my voice, and I make frequent use of simple graph on a movie-size screen.

"In my smaller classes, of course, I do none of these things. A teacher can get away with gross generalisations in a large lecture setting; in fact exaggerations can even enhance student learning in that environment. Students know the difference, and they appreciate a teacher's adaptation of pedagogical style to different settings."

Limitations on Use of Suggestion

Discipline: None

Course Level: Lower division

Course size: Above 200

Mode: Lecture

**Suggestion Number: 148) Begin your lecture with a joke of the week**

IF YOU WANT TO::

- Have an interesting style of presentation
- Create a relaxed informal atmosphere

YOU MAY WISH TO CONSIDER:

Beginning your lecture with a "joke of the week," especially in large early Monday morning courses.

One faculty member admits that his jokes are pretty bad, but finds that the students appreciate his efforts anyway. "I hate Mondays and I hate early mornings even more," he explains. "A joke related to the course content, to education, or to life in general tends to help get everyone awake," he says.

The source of his jokes? "One source is the students themselves," he says. "I encourage students to bring me jokes I can use. In that way my 'bad' jokes are their 'bad' jokes as well."

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 149) Vary course pace and instructional activities**

IF YOU WANT TO::

- Have a more interesting style of presentation
- Capture and sustain students' interest

YOU MAY WISH TO CONSIDER:

Varying the pace and instructional activities of the course.

One excellent teacher says that he conducts each class meeting differently "to keep the students off balance. Students always know what topic will be covered in a given session," he says, "but they don't always know how it will be handled."

An English teacher also believes that his wide variety of teaching strategies accounts for his high ratings on interesting style of presentation. "I read whatever I can find on teaching in my discipline," he says, "and I borrow quite shamelessly from other instructors when it comes to pedagogical strategies."

Some of the variations used by excellent teachers include: student panel discussions and oral presentations, guest speakers, slides, films, overhead transparencies, blackboard work with colored chalk, role-playing and simulations, and a wide variety of group discussion techniques.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 150**

##### IF YOU WANT TO::

- Have an interesting style of presentation
- Vary instructional pace

##### YOU MAY WISH TO CONSIDER:

Inviting guest speakers to your course.

Several excellent teachers believe that guest speakers can be a real plus if they are selected for their expertise or practical experience and carefully informed about what is expected of them. An English professor sometimes invites professional actors to talk about their interpretation of a scene or a role from a play the students are studying. "It's very important to make clear to the guest what you expect of him or her in order to ensure that it is an educational experience for the students," he points out.

"I always take detailed notes during a guest lecture," says a professor in the biological sciences. "In this way I am able to answer student questions about the material during later sessions and may learn something new myself!"

An architecture professor goes even further in preparing his guest speakers well in advance so that they know exactly what is expected of them. "Practicing architects are asked to submit working drawing, models, photos, and publications on one of their buildings so that the students will be well acquainted with their work beforehand," he says.

"Students are required to submit a set of questions to the guest speaker beforehand about his/her work and designated students are assigned responsibility for seeing that these questions are addressed to the speaker." As a courtesy to each guest speaker, he makes a



point to confirm the time and place of the guest's presentation, provide a map of the campus, arrange for campus parking, and promptly send each speaker a thank-you letter.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Section Nineteen: Vary the Speed and Tone of Your Voice (151-158)**

##### **Suggestion Number: 151) Make diagnostic and practice audiotapes**

###### IF YOU WANT TO::

- Vary the speed and tone of your voice
- Diagnose problems of speed, tone, inflection, etc.
- Periodically check improvement on aspects of vocal delivery

###### YOU MAY WISH TO CONSIDER:

Making diagnostic and practice audiotapes.

Although the audio quality of most home tape recordings is not good enough to diagnose fine points of pitch, inflection, articulation, and pronunciation, it can be used effectively to note whether you speak too slowly or too rapidly, whether you vary your tone and inflection sufficiently to hold students' attention and communicate meaning, and whether you articulate clearly and/or forcefully enough to be heard and understood.

Audiotapes can also be used to check the organisation of your lecture presentation and the clarity of your explanations. Repeated audiotaping will also allow you to monitor your improvement on any of these variables.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None, primarily lectures

##### **Suggestion Number: 152) Use the blackboard as a brake**

IF YOU WANT TO::

- Vary the speed and tone of your voice
- Slow down the pace of your lectures
- Give students time to absorb major ideas

YOU MAY WISH TO CONSIDER:

Using the blackboard as a "brake."

One faculty member who uses the black board extensively during her lectures reports that she purposely does so to force herself to slow down. "I have a tendency to speak very rapidly," she says, "and because the course covers many basic concepts, it is imperative that I slow down in order to allow the students to absorb what I am saying and to take reasonable lecture notes.

"One of the best ways I have found to do this is to outline my lectures as I go along. I also write out all important concepts, key words for definitions or important examples, and diagram various relationships at the time I am discussing them. I try to plan my board work ahead so that there will be enough space, and I use colored chalk to differentiate concepts and highlight relationships."

"I find that because it takes me much longer to write than to speak, writing on the blackboard is like an automatic 'brake.' Also, I get fewer student complaints about my lecture pace because the main concepts and processes are on the board, visually reinforcing what I am saying."

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: Lecture

**Suggestion Number: 153) Colour-code your lecture notes**

IF YOU WANT TO::

- Vary the speed and tone of your voice

- Have a more interesting style of presentation
- Speak more slowly when stressing major points

#### YOU MAY WISH TO CONSIDER:

Colour-coding your lecture notes with cues to "slow down," "pause and get attention," "demonstrate with gestures," or other stage directions.

One of several faculty members who does this says, "Because I have a tendency to speak too rapidly, I find these colour-codes helpful as cues to slow down when introducing a new idea, explaining a concept, or summarising major ideas and the relationships between them. This also frees me to speak at my own normal fast clip when making transitions or giving examples," he says.

#### Limitations on Use of Suggestion

Discipline: None  
 Course Level: None  
 Course size: None  
 Mode: Lecture

#### **Suggestion Number: 154) Vary the pitch or inflection of your voice**

##### IF YOU WANT TO::

- Vary the speed and tone of your voice
- Have a more interesting style of presentation
- Overcome a tendency to speak in a monotone

#### YOU MAY WISH TO CONSIDER:

Learning to vary the pitch or inflections of your voice.

If students complain that you lecture in a monotone, you may WANT TO: try one of the following: taking speech lessons, joining an organisation like Toastmasters, taking acting lessons, joining (or organising) a poetry or drama reading group, or simply practicing reading aloud to yourself or members of your family. Each of these methods has been used effectively by one or more Berkeley faculty.

One faculty member combined speech lessons with Bible readings at his church with good effect. Another took an acting class on campus during the summer, and not only improved his vocal delivery in the classroom but had a good time as well.

Several faculty members recommended joining a poetry-reading group. "Reading poetry aloud can be particularly helpful because poetry requires greater vocal inflection for its meaning to become clear," one said. Reading plays aloud with friends or family can also be an enjoyable means of practicing vocal variety.

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

#### **Suggestion Number: 155) Practice communication skills in front of a mirror**

##### IF YOU WANT TO::

- Vary the speed and tone of your voice
- Have a more interesting style of presentation

##### YOU MAY WISH TO CONSIDER:

Practicing your lecture communication skills in front of a mirror.

This recommendation comes from a professor of zoology who was a champion debater in college. "Even today, I frequently rehearse my classroom lectures or research presentations in front of the mirror," he says. "Of course, you WANT TO: do this in private. It makes you very self-conscious at first, but I find it an excellent way to practice communication skills."

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

#### **Suggestion Number: 156) Build deliberate pauses into your lectures**

IF YOU WANT TO:

- Vary the speed and tone of your voice
- Have an interesting style of presentation

YOU MAY WISH TO CONSIDER:

Building deliberate and purposeful pauses into your lectures.

A zoology professor stresses the importance of the pause as a rhetorical device. "When I WANT TO: emphasise a point, I always pause until the audience is absolutely silent (it makes students uncomfortable). Then when I have their full attention, I proceed to make the point."

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: Primarily lecture

**Suggestion Number: 157) Use students to monitor your presentation**

IF YOU WANT TO:

- Vary the speed and tone of your voice
- Know if students are hearing and understanding you
- Be reminded to speak more slowly
- Be reminded to speak more loudly

YOU MAY WISH TO CONSIDER:

Using students to monitor your presentation.

If you want an in-class reminder when you are speaking too softly, too rapidly, or without sufficient articulation to be heard and understood, ask one or more students, a TA or colleague to sit in the last row and give you a predetermined signal whenever your voice cannot be heard or your speed, delivery, or articulation makes it difficult to understand what you are saying.

Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: Over 30  
Mode: Lecture

**Suggestion Number: 158) Wear a microphone to talk to the back row**

IF YOU WANT TO:

- Vary the speed and tone of your voice
- Be certain that you are heard in the back room

YOU MAY WISH TO CONSIDER:

Wearing a microphone and remembering to "talk to the back row" if you have a tendency to speak too softly.

By remembering to talk to the back row, you will be more likely to adapt your voice to groups of different sizes. Note, however, that although you WANT TO: project your voice to the back row, your eye contact with students should vary over several sections of the room. If you look at the back row as well as talk to it, you will appear excessively distant and formal.

Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: Large classrooms  
Mode: None

**Section Twenty: Motivate Students to Do Their Best Work (159-172)**

**Identify the Knowledge and Skills Students Bring (159-161)**

**Suggestion Number: 159 Give a nongraded assignment during the first week**

IF YOU WANT TO:

- Motivate students to do their best work

- Get to know your students
- Give students written analyses of their strengths and weaknesses

#### YOU MAY WISH TO CONSIDER:

Giving a nongraded assignment during the first week of class.

A faculty member in history asks students to write a one page paper on the following topic, "What book has had the greatest impact on your thinking and why?"

"I enjoy reading their papers," he says. "It's a way for me to get to know the students and to look at their writing skills. I can identify students who have weak composition skills and refer them right away to appropriate campus resources."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 160 Review student transcripts**

#### IF YOU WANT TO:

- Motivate students to do their best work
- Identify students who may have difficulty in the course
- Give help to students who may have difficulty in the course

#### YOU MAY WISH TO CONSIDER:

Reviewing student transcripts to be sure they have prerequisite knowledge and skills to succeed in the course.

At the beginning of a term, one professor of architecture reviews the transcripts of all students enrolled in his course. "During the first week, I make an appointment with any students I think might have difficulty and discuss their background preparation."

"If students have minor deficiencies," he explains, "I offer to work with them out-of-class and suggest good review materials. If their deficiencies are more extensive, I advise

them about prerequisite courses and other forms of preparation and try to persuade them to enrol in my course the following year."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: Sequential courses

Course size: None

Mode: None

#### **Suggestion Number: 161 Review students' work examples**

##### IF YOU WANT TO:

- Motivate students to do their best work
- Know what knowledge and skills students bring to your course
- Build on previous student performance levels

##### YOU MAY WISH TO CONSIDER:

Reviewing students' work examples (reports, papers, exams, etc.).

Many types of student products can be scanned by the instructor and ta's to give insight into the range of student performance levels represented by the class. A mathematics instructor, for example, requires students to bring their pre-calculus notebooks to class so that he can see what (and how) students had been introduced to prerequisite math concepts. "I find their notebooks invaluable for understanding what will have to be 'undone'," he says.

#### Limitations on Use of Suggestion

Discipline: Courses requiring prerequisite skills or knowledge

Course Level: Lower division

Course size: None

Mode: None

#### **Give Students Skills and Knowledge to Do Well in Class (162-168)**

**Suggestion Number: 162 Orient new students to the University and the course**



IF YOU WANT TO:

- Motivate students to do their best work
- Help students meet performance objectives
- Make new students feel at home at Berkeley (Irvine)

YOU MAY WISH TO CONSIDER:

Orienting new students to the University in terms of faculty expectations for student performance and the resources available to assist them with any problems they may have.

One humanities teacher does this every Fall in his introductory level course taken primarily by freshmen and transfer students. "Because most of the new students feel quite lost at the University," he explains, "I take time at the beginning of a course to explain how courses work at Berkeley and to relate a number of anecdotes that may let them know that any feelings of strangeness they may be experiencing are shared by others.

"I let them know where the major tutorial, counselling, and advising services are and invite them to come see me if they are having any difficulties."

Note: The TIES office produced a Faculty Guide to Instructional Resources, the last section of which describes the various campus resources available to students who need help with academic or personal problems. Contact TIES: 642-6392.

Limitations on Use of Suggestion

Discipline: None

Course Level: Lower division

Course size: None

Mode: None

**Suggestion Number: 163 Give a mini-lecture on how to write a paper**

IF YOU WANT TO:

- Motivate students to do their best work
- Help students improve their writing skills
- Help reinforce high standard of literacy on the campus

YOU MAY WISH TO CONSIDER:

Giving a "mini-lecture" on how to write a paper or respond to an essay question.

Several excellent teachers do this routinely in their courses. "I impress upon the students that history is a literate discipline," says one teacher. "I encourage them to respect their own research and ideas enough to organise them in some logical and coherent fashion before they start to write. I point out that I work hard at organising and outlining my lectures, and I expect them to do the same for me."

A zoology professor says that he gives students his "sermonette" on the importance of good writing. "I give them a twenty-minute essay quiz bi-weekly, and take off a few points for incomplete sentences, poor grammar, etc. Spelling, however, I have to ignore," he concludes, "or no one would have any points left!"

"I emphasise that a good essay, like the design of a good building, goes through several drafts and frequently benefits from critiques by colleagues," says a professor of architecture. "A building, like an essay or poem, withstands the test of time when it is both appropriate and elegant." In his course, students' papers are subjected to peer as well as faculty critiques; students learn both editing and writing skills.

The TIES office has available a guide to composition resources which describes ways of improving students' writing skills. Contact TIES: 642-6392.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 164 "Give a mini-lecture on how to read a book**

##### IF YOU WANT TO:

- Motivate students to do their best work
- Help students meet performance expectations
- Give students tips on effective reading skills

##### YOU MAY WISH TO CONSIDER:

Giving a mini-lecture on how to read a book most efficiently.

Mini-lectures of this kind can be especially helpful in lower division courses and in courses where the readings are difficult classics or works not originally written for students. An English teacher does this in his upper division literature course as well.

"I discovered several years ago," he says, "that most students don't really know how to read a book. It seems like such a simple thing to a faculty member. The sheer volume of our reading forces us to learn a lot of time-saving devices one way or another. Undergraduates, on the other hand, tend to approach a book in a linear fashion, sentence by sentence, paragraph by paragraph from beginning to end."

"Now, in many of my courses I include a mini-lecture on how to read various kinds of books: how to use a table of contents, an index, how to skim the beginning and ends of chapters, how to identify the main points, how to take notes, and how to tell whether a book is worth reading or not."

A professor of ethnic studies spends time explaining the difference between the theme and thesis of a book, between the author's topic and what he or she is trying to prove. He also stresses the difference between fact and interpretation, using examples from course readings.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: Undergraduate

Course size: None

Mode: None

#### **Suggestion Number: 165 Hold an outside review session every two weeks**

##### IF YOU WANT TO:

- Motivate students to do their best work
- Know if the class is understanding you or not
- Get to know your students
- Make large courses more personable

##### YOU MAY WISH TO CONSIDER:

Holding an outside review session once every two weeks.

An ethnic studies professor who teaches a large introductory course holds voluntary discussion sessions on a regular basis to review the material and answer student questions. The session is held in a smaller room immediately following his lecture when students are most likely to have questions. There is no set agenda for the session. The teacher simply fields student questions and stimulates discussion of important concepts and ideas. He has found that between 20 and 50 students attend each session (out of an

enrolment of 350). The sessions, besides being worthwhile for the students, give the professor an opportunity to get to know his students and their concerns.

A professor in anthropology also uses this technique, scheduling a weekly review session after each Friday's lecture. "It's helpful to me," she notes, "because I can identify what students understand and what they don't."

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

#### **Suggestion Number: 166 Devote the last day of class to an overall review**

##### IF YOU WANT TO:

- Motivate students to do their best work
- Summarise major points
- Emphasise conceptual understanding

##### YOU MAY WISH TO CONSIDER:

Devoting the last day of class to an overall review of the course concepts and issues.

"It's hard for students to fit each lecture or assignment into the big picture," says a professor of business administration. "I believe that it's important to give an overall review so that students can compare where they were at the beginning of the course to where they are now.

"By highlighting the main concepts and issues and how they fit together, you give students a conceptual framework for retaining what they have learned in the course as well as for preparing for the final examination."

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

### **Suggestion Number: 167 Correct students' speaking errors**

#### IF YOU WANT TO:

- Motivate students to do their best work
- Give personal help to students having difficulty
- Help students improve their oral communication skills.

#### YOU MAY WISH TO CONSIDER:

Correcting students' diction, grammar, logic, and pronunciation promptly but in a constructive way.

One history teacher says, "Some faculty believe that as long as students talk, a discussion is going well. I believe that poor speaking is like poor writing; it should not be ignored but corrected immediately." She points out that students have few enough opportunities to learn how to argue, to reason, and to discuss issues intelligently. "Seminars should focus on the development of those skills as well as on course content," she says.

"If a student makes an error of fact or logic, mispronounces a word, uses words incorrectly or deals in malapropisms, I immediately correct him or her by rephrasing what they have said. I don't say, 'What you said is wrong,' but I do say something like, 'I think that what you said might be better phrased as...'"

A professor of French also believes in promptly correcting students' errors. "It's important to establish rapport and a good class atmosphere so that the students are not upset by criticism," he notes. "I do this in several ways. I correct them in a joking manner (laughing with them not at them); I correct them in mock outraged fury; I correct them constantly so they see it as a normal function of the class."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Suggestion Number: 168 Emphasise how to learn from one's mistakes**

#### IF YOU WANT TO:

- Motivate students to do their best work
- Help students meet performance objectives
- Give personal help to students having difficulty

## YOU MAY WISH TO CONSIDER:

Emphasising how to learn from one's mistakes.

Several excellent teachers stress the importance of giving students an opportunity to practice (and even to fail) in a nonpunitive environment. A biochemistry professor, for example, points out that the data in student laboratory reports can easily be faked; therefore his main concern is that students understand why their experimental results failed and not that they get the right results. "If students can analyse and explain why their results failed," he says, "I give them full credit for their lab reports. I emphasise that everyone makes mistakes; what is important is to learn how to profit from them."

A professor of English says, "I try to set a tone in which students can readily admit that something went wrong in their bibliographic search. Because the course focuses on mastering a methodology and a range of bibliographic skills, I encourage them to share their mistakes and explore the reasons for them with the group rather than masking those mistakes in favour of a finished, but mediocre, research product."

A professor of dramatic art also stresses the need to provide a non-threatening environment in which students can learn from their mistakes. "I often point out to students that even a bad piece of work is not a complete loss; sometimes you have to go through the bad to get to the good. It's important to learn how to put the bad design behind you, and move on, wiser for the experience."

## Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

## **Part Three: Develop Positive Relationships with Students (169-172)**

**Suggestion Number:** 169

### IF YOU WANT TO:

- Motivate students to do their best work
- Get to know your students

## YOU MAY WISH TO CONSIDER:

Making personal contact with individual students.

"In motivating students to do their best work, I have found no substitute for personal contact with individual students," says a faculty member of business administration. "Such personal contact is a natural part of a small, year-long seminar, but I have had to resort to short-cuts to establish a measure of contact with individual students in large classes." To increase opportunities for personal contact he employs a variety of techniques:

- a voluntary questionnaire on the personal and educational backgrounds of members of the class.

"This survey has proved useful in identifying students with special expertise that can be drawn on in discussions."

- mandatory visit by each student to his office hours. I try to schedule this around approval of their research project."
- thoughtful evaluation of students' written work. "I have come to realise that evaluation of students' written work provides the most direct opportunity for one-to-one communication. I spend a great deal of time commenting on papers, emphasising how to improve their performance."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: Limited to some but not all students in large classes

Mode: None

**Suggestion Number:** 170 Individualise instruction as much as possible

#### IF YOU WANT TO:

- Motivate students to do their best work
- Relate to students as individuals

#### YOU MAY WISH TO CONSIDER:

Individualising instruction as much as possible.

A professor of physics explain that he first gets to know the students as individuals, then he focuses on their weak points (excessive shyness, lack of confidence, aggressive over-confidence, etc.). "Then I begin to draw them out individually to help them overcome those weaknesses," he says.

"For example, I might challenge a smart-aleck student with a question he can't answer, and then help him find a way of researching or solving the problem. With a shy student,

I might start out by asking him to walk back to the office with me to loan him a book I think will be of interest, or I might ask him to go to the library and look up something for me. Once he is in the office, I may ask him to work out a problem on the blackboard and discuss it with me orally, and then gradually convince him to make a presentation in front of the class.

"Most students are either afraid of faculty members or tend to think that we only like A+ students. In fact, some A+ students are a bore and some C students are very interesting and engaging people. More importantly, some C students are really A or B students, if only someone takes the time to work with them, to help them correct bad study habits or faulty problem-solving techniques and gain self-confidence."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number:** 171 Treat students like colleagues

#### IF YOU WANT TO:

- Motivate students to do their best work
- Help students meet your performance expectations

#### YOU MAY WISH TO CONSIDER:

Treating students like colleagues.

A faculty member in a professional school says, "I talk to upper division and graduate students the same way I talk to professional colleagues. I don't talk down to them." This attitude is reflected in his assignments where he typically tells students, "I don't want you to write a paper on something I already know. I want you to teach me something I don't know. Write your paper for professional architects."

He feels that this approach motivates students to select their research topics and to write their papers more carefully.

"Papers should have an audience broader than the teacher," he explains. "IF YOU WANT TO: motivate students to do their best work, assignments should never have a 'make-work' quality. Their chief purpose--for either the students or the teacher--should not be to determine a grade in the course but to provide a meaningful learning experience."



A faculty member in entomology espouses the same general philosophy. "I'm not just teaching," he says. "I'm learning with the students. These graduate students know more about some subjects than I do. I stress a collegial atmosphere."

Limitations on Use of Suggestion

Discipline: None

Course Level: Upper division & graduate

Course size: None

**Suggestion Number: 172 Model your own high standards to students**

IF YOU WANT TO:

- Motivate students to do their best work
- Encourage students to come to class prepared

YOU MAY WISH TO CONSIDER:

Modeling your own high standards for students.

"If you do a sloppy job, you can't expect the students to do a good one," one history professor explains. "I point out to the students that I put in several hours preparation outside of class and I expect them to do the same. After all, I already know the material, and if it takes me several hours to review it in order that I do my best, certainly the students can't expect to do less and still do well in the course."

An economics professor concurs, saying, "If I work hard preparing and am excited about the course, then students will be too."

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Give Students an Opportunity to Do Well on Assignments (173-179)**

**Suggestion Number: 173 Give a brief early assignment**

IF YOU WANT TO:

- Give interesting and stimulating assignments
- Help students improve their performance levels
- Help students to develop self-confidence

YOU MAY WISH TO CONSIDER:

Giving a brief early assignment that allows students to build on knowledge and skills acquired in previous courses.

One professor of architecture does this in his studio courses. "Beginning with a problem that students can easily master increases their self-confidence and creates a relaxed, non-threatening atmosphere for the course," he explains. "My first assignment always calls for the students to use skills learned in prior courses and to apply them to an elementary design problem."

Limitations on Use of Suggestion

Discipline: Sequential course

Course Level: Undergraduate

Course size: None

Mode: None

**Suggestion Number: 174 Require frequent short assignments**

IF YOU WANT TO:

- Give interesting and stimulating assignments
- Motivate students to do their best work
- Develop students analytic and communication skills

YOU MAY WISH TO CONSIDER:

Requiring frequent short assignments.

One professor of English requires students to write a short (500-700 word) paper each week. "Each assignment poses a specific problem about a novel they are reading and asks the student to develop a theory of what the author was trying to do," he explains. "For example, 'Why is such and such character crippled?' or 'What is the function of the narrator?'" Variations for paper topics in other disciplines might pose questions about research design, alternative models, implications for society or further research, etc. based on readings of original research papers.

Frequent short assignments give students a chance to demonstrate what they know and to develop and show improvement in their writing and thinking.

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 175 Replicate assignments covering basic concepts**

IF YOU WANT TO:

- Give interesting and stimulating assignments
- Have students apply concepts to demonstrate understanding - Emphasise conceptual understanding
- Motivate students to do their best work

YOU MAY WISH TO CONSIDER:

Replicating assignments which cover basic concepts until students get them right.

One chemistry professor says, "I believe in stressing the fundamentals of a course. If a portion of the class misses a problem on a homework assignment, quiz or test, I give them the same problem over and over again until they get it right. I turn it inside out and upside down, but it's fundamentally the same problem."

Faculty members who teach self-paced, mastery learning courses inherently apply this technique by requiring students to repeat unit assignments until they have mastered the material before moving on to the next unit or module.

If you are interested in knowing more about these approaches, contact the TIES office (2-6392).

Limitations on Use of Suggestion

Discipline: Sciences primarily

Course Level: Undergraduate

Course size: None

Mode: None

**Suggestion Number: 176 Give students options in selecting assignments**

IF YOU WANT TO:

- Give interesting and stimulating assignments
- Motivate students by relating assignments to students' interests

YOU MAY WISH TO CONSIDER:

Giving students at least one assignment which consists of five or six options.

One professor of English requires every student to write two essays on assigned topics. His third assignment, however, sets forth five or six options from which students may choose the one which sounds interesting and most allows them to do their best. Examples of the options which he offers include: a piece of creative writing, a dramatic representation to be performed in front of the class (which can be a small group or team

project); an original videotape to be shown to the class (which can also be a team effort); or a third essay (a "safe" option generally selected by the most conventional students). In addition, with the permission of the instructor, students can create their own option if they wish. "More than five or six options tends to confuse many students; it makes it too difficult to decide," he believes. "Too few options, on the other hand tends to restrict unduly the more creative and daring students." Although the optional assignments must be related to the subject matter of the course, he encourages students to take an interdisciplinary approach and to link content and skills from other courses.

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

#### **Suggestion Number: 177 Give students a choice of substituting a paper**

##### IF YOU WANT TO:

- Give interesting and stimulating assignments
- Give students options to show what they know
- Minimise student test anxiety

##### YOU MAY WISH TO CONSIDER:

Giving the students the choice of substituting a paper for one of the midterms.

A professor of classics gives two midterms and one final exam. He has found it useful to give students the option of writing a paper (from an approved list of topics) for either of the midterms.

"I haven't really noticed any pattern of who takes the midterm and who writes a paper," he comments. "Good and poor students do both. In general about 25% of the class chooses to write a paper." He finds that giving students options increases their motivation and makes them more active learners.

#### Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course Size: None  
Mode: None

#### **Suggestion Number: 178 Schedule individual appointments with students**

IF YOU WANT TO:

- Give interesting and stimulating assignments
- Improve students' writing
- Get to know students

YOU MAY WISH TO CONSIDER:

Scheduling individual appointments with students to discuss their major assignments both before and after they are due.

"I make a point of meeting with each student several weeks before a project or paper is due to discuss how students might approach the task," says a professor of civil engineering. "I also schedule individual appointments after I have read their reports to give students more detailed feedback than is possible in written comments."

These appointments are valuable in several respects: the professor gets an opportunity to know students personally; students get individual attention regarding their work; appointments at the beginning of the term seem to break the ice and students are more inclined to attend office hours on their own to discuss the work.

A professor of political science also discusses outlines of papers with students before they begin writing. "These discussions give me a good feel for the students' reasoning and sense of organisation. Frequently students will revise their outlines in light of our discussion." Meeting with students at each phase of their writing process (selecting a topic, outline, problem statement, first draft) can strengthen substantially their final product and gives them the kind of tutorial which can greatly benefit their subsequent writing.

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None, if Ta's are trained to help in very large classes

Mode: None

**Suggestion Number: 179 Use a structured process to help students**

IF YOU WANT TO:

- Give interesting and stimulating assignments
- Help students generate project topics
- Help students form groups

YOU MAY WISH TO CONSIDER:

Using a structured process to help students choose topics and groups.

In one public health class, students work in small groups on a major project throughout the term. The professor has developed procedures to help students choose topics and groups. First, all possible project ideas are listed on the board using a brainstorming technique. The question posed to students is "What topics or areas would you like to explore?"

Enough topics are generated so that each is taken on by a group of four to six students. The small groups meet around their selected topic of interest and the students explore in more detail the nature of their project. At the end of the period, students indicate on an index card their name, address, phone number, group and whether their decision is firm. This list is typed and shared at the next class meeting when any necessary changes are made.

This procedure gives students a chance to identify appropriate topics and explore in a preliminary fashion how they might proceed. It gets the students working on their term projects earlier and has the added benefit of providing each student with a list of everyone in the class and their project interests.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: No more than 100

### **Part Two: Challenge Students with Stimulating Activities (180-184)**

#### **Suggestion Number: 180 Set up student panels**

##### IF YOU WANT TO:

- Give interesting and stimulating assignments
- Create opportunities for students to learn from one another

##### YOU MAY WISH TO CONSIDER:

Setting up student panels.

One faculty member in the social sciences organises the term as a series of student-led discussions. "I believe students can teach themselves a great deal; therefore I do not play an active role in the student-led discussions. My role should be to serve as organizer and facilitator." In the first week students select the topic and the date of their presentation. Generally there are three to four students per topic. Outside class, the students meet as a group with the faculty member to discuss how they might organise their topic for presentation and discussion. It is up to the students to select whatever format they wish for their presentation.

"In the past, students have conducted a debate, performed a skit, or simply led a discussion about the topic," he says. "They not only learn a lot about the topic; the students really get to know one another in the course of preparing their presentations."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: Under 50-60

Mode: None

#### **Suggestion Number: 181 Use classroom debates**

##### IF YOU WANT TO:

- Give interesting and stimulating assignments
- Encourage class discussion

##### YOU MAY WISH TO CONSIDER:

Using classroom debates.

One way to introduce discussion into the class is through an interesting assignment. An example is to ask students to prepare brief remarks or short talks taking a pro or con position on a particular issue. The debate format shows students that there are no pat answers to complex issues and that contrasting views can form the basis for further discussion and reflection.

An education professor uses the debate format frequently in his seminar. All students are instructed to prepare a pro or con position for the next class meeting. In class a few students are selected to present their arguments. Other members of the class contribute new ideas after the formal presentations and criticise the arguments and strategies used in the debate, suggesting how the two positions may have been strengthened.

A variation of this format involves using the prepared pro and con arguments as a basis for group discussion. The instructor asks students for their major points and lists each pro and con position as a "matched pair" on the board. Discussion focuses on each pair sequentially.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: Upper division or graduate

Course size: Under 50-60

Mode: None

**Suggestion Number: 182 Create opportunities for role playing**

IF YOU WANT TO:

- Give interesting and stimulating assignments
- Encourage discussion
- Have students apply concepts to demonstrate understanding

YOU MAY WISH TO CONSIDER:

Creating opportunities for role playing.

An education professor has found that having students role play professional situations is an effective strategy for involving them in the course material. He poses a situation typical of some aspect of professional practice and assigns a few students to take various roles. Sometimes students are told in advance that they will be responsible for a certain role; other times assignments are made spontaneously at the beginning of class.

An engineering professor makes use of role playing to encourage students to develop skills they will need in their careers. "I give students copies of an engineering report, for example. Then one half of the class is asked to assume the role of the authors of that report and prepare an oral presentation for the client or funding agency. The other half of the class is assigned to act as representatives of the client or funding agency and to prepare questions to be asked of the engineers.

"About a week later, during class time, I select certain students to actually enact these roles in front of the class. The students do not know ahead of time whether they will be called, so everyone has to be prepared. Those not called join me in the role of the observer. When the students have enacted the meeting, the rest of us give a critique of each side's performance."

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 183 Ask students to give oral presentations**

IF YOU WANT TO:

- Give interesting and stimulating assignments
- Help students develop oral communication skills

YOU MAY WISH TO CONSIDER:



Asking students to give oral presentations on their research papers or lab projects.

A professor of nutritional science does this in a large survey course by asking for volunteers. "Because they become so involved in the research on their papers, I have more students volunteering to present their topics than there is time for. Still, those who do get the opportunity benefit from that exposure and the students in general seem to enjoy hearing what the other students have studied."

A professor of chemistry has students give a ten minute presentation on a lab experiment they have conducted. He encourages students to learn how to analyse a problem, how to synthesise an attack on that problem, and - most importantly - how to communicate the results of their analysis and synthesis to the class.

A physiology professor requires his students to spend the first five minutes of their oral presentation explaining to the group why their research should be of interest to the others. "This helps them to see their own research - no matter how esoteric it appears on the surface - in the context of the discipline and of the biological science generally."

A professor of education points out that student presentations are generally uninspired and poorly delivered. "I meet with each student beforehand," he says. "I try to get them to present their topic in a way which will interest and challenge their peers." He also suggests that students limit their presentations to 10 minutes and that they make use of audio-visual equipment.

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Suggestion Number: 184 Use case studies and simulation techniques**

IF YOU WANT TO:

- Give students interesting and stimulating assignments
- Have students apply concepts to demonstrate understanding
- Help students develop problem-solving skills

YOU MAY WISH TO CONSIDER:

Using case studies and simulation techniques.

An engineering professor presents students with problems based on real case studies. "For example," he says, "students are told that a ball bearing failure has occurred in an

airplane. They are asked to outline what steps they would take in determining the cause and correcting it.

"They tell me what tests they would make and, using simulation techniques, I tell them what the results of those tests would be and ask what they would do next. This continues until the students have either solved the problem or are stumped. Then their results are compared with those from the actual case study.

"The value of this approach is to give students experience solving the type of practical problems they will encounter as professionals," he explains. "Also, because the problems are based on actual cases, it gives students a chance to measure their own problem-solving skills with those of practicing engineers."

A professor of anthropology also carefully prepares case study assignments to give her lower division students exposure to primary research techniques and strategies. Students are presented with a collection of photos, maps, and narrative information which depict a site as an archaeologist would see it. Students must answer a series of questions, e.g., "what changes in eating habits can you infer from the artefacts found at two different levels?"

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

Part Three:

### **Challenge Students with Stimulating Assignments (185-192)**

#### **Suggestion Number: 185 Give provocative assignments**

IF YOU WANT TO:

- Give interesting and stimulating assignments

YOU MAY WISH TO CONSIDER:

Assigning provocative or controversial topics for papers.

"I find that the quality of the papers I get often depends on the quality of the assignment I give," says a professor of business administration. He tries to give provocative topics as paper assignments.

For example, a recent assignment asked students to respond to the question, "If you were working in a company that illegally pollutes the environment what would you do and why?" Giving provocative assignments not only challenges the students and makes for more interesting reading but also diminishes the chances that the papers will be plagiarised.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Suggestion Number: 186 Do assignments for "real world" clients**

#### IF YOU WANT TO:

- Give students interesting and stimulating assignments
- Motivate students by giving "real world" assignments
- Help students improve their research and writing skills

#### YOU MAY WISH TO CONSIDER:

Having students do research and write papers or reports for specific "real world" clients or audiences.

Some teachers select or simulate a problem in their field and then have students design a research project, gather the relevant data, and write up the results in a form appropriate for the "client."

Still other teachers find real clients for their students. For example, a teacher of natural resources has students participate in all phases of the research, report writing, and oral presentation to client agencies for environmental impact studies in the Bay Area. Similarly, a social welfare teacher has students help agencies define their needs and write grant proposals for submission to foundations and federal agencies.

An education professor frequently has students meet with top level University administrators to define current evaluation or information needs on the campus. Each student then designs and conducts a small-scale evaluation project on the campus and writes a report for the client-administrator in lieu of a standard term paper. He notes, "You get better results from students if they feel there is a real audience for their ideas."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 187 Give students field experience assignments**

IF YOU WANT TO:

- Give interesting and stimulating assignments
- Have students apply concepts to demonstrate understanding
- Motivate students to do their best work

YOU MAY WISH TO CONSIDER:

Making assignments which give students field experience.

A political science professor always includes at least one experiential assignment in his courses. A recent example was to require students to interview a Bay Area politician as well as his or her spouse, children, staff members, and several constituents in order to get a better understanding of daily life of a politician and the issues and problems he or she faces.

"Students were then asked to share their experiences with the class so that some generalisations could be drawn. They compared their own conclusions with those presented by both the theoretical and the popular conceptions of politicians represented in their reading assignments.

"Students are so experience-poor and theory-rich," he explains, "that I find as many ways as possible to get them to use the Bay Area as a laboratory for enriching their understanding of the course concepts and theories. Students are also so competitive, that I try to give them a few non- competitive assignments where each student has his or her own unique experience which can be pooled with those of others in the class in a way that enriches everyone's understanding."

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 188 Give assignments typical of the field**

IF YOU WANT TO:

- Give interesting and stimulating assignments
- Develop students' analytic problem-solving skills

YOU MAY WISH TO CONSIDER:

Assigning "thought problems" which are typical of the problems faced by professionals in the field.

A forestry professor assigns weekly "thought problems" which are of the same type he includes on his two midterms and final examination. "These thought problems," he explains, "serve two functions: to expose students to my kind of exam and to get them to really think through the material covered each week. They are not graded, but every Monday I go over them in class so that students can see how well they are doing."

He goes on to say, "I can best define 'thought problems' in terms of the type of questions professional foresters are asked, such as, 'What is killing that tree?'; not 'Name six factors which can kill trees.'"

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Suggestion Number: 189 Assign independent research projects**

IF YOU WANT TO:

- Give interesting and stimulating assignments
- Motivate students to do their best work
- Have students apply concepts to demonstrate understanding - Encourage independent thinking and research

YOU MAY WISH TO CONSIDER:

Having undergraduates carry out independent research projects.

A forestry professor who uses this approach believes that too many laboratory courses follow a "recipe" approach and thus do not really introduce students to sciences. "I want students to get a feel for real scientific research," he explains. "Therefore, I require them to develop the questions, select the methods by which they are going to carry out their investigations, review the relevant research literature, and report their findings in both written and oral form."

The TIES office has a publication on strategies for promoting undergraduate research. Contact TIES (2-6392).

Limitations on Use of Suggestion

Discipline: Sciences

Course Level: Upper division

Course size: Less than 50

Mode: None

**Suggestion Number: 190 Assign analysis of an essay or article**

IF YOU WANT TO:

- Give students interesting and stimulating assignments
- Motivate students to do their best work
- Develop students' analytic and communication skills

YOU MAY WISH TO CONSIDER:

Assigning students to analyse an essay or journal article and to write a critique of it.

One professor of English assigns the work of a literary critic and then asks students to write an essay taking an adversary position. "If your assignments are provocative," he says, "you get better results. I stress the importance of their presenting a personal point of view. They should enjoy doing the paper; it should provide them with a personal learning experience."

A psychology professor also assigns students to write an evaluation or critique of a paper by a professional psychologist. "The process of analysis and evaluation captures what I am trying to do in the course," he explains.

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 191 Give role-playing assignments**

IF YOU WANT TO:

- Give interesting and stimulating assignments
- Motivate students to do their best work
- Have students apply concepts to demonstrate understanding

YOU MAY WISH TO CONSIDER:

Giving assignments which put students in the role of another.

A history professor reports that she used to give rather standard writing assignments, e.g., "compare author X and Y's views on A," where the two authors tended to be professional historians. "Most undergraduates, however, find the arguments of current historians somewhat arcane," she says. "Therefore, most recently I have asked students to read a collection of 18th century speeches on why Louis XVI should be killed and assigned

them the task of writing their own speech as if they had been living during the French Revolution."

"Undergraduates really are enthusiastic about this kind of assignment and do an incredibly good job. It helps them to identify with the issues of the time; in fact many students went to great lengths to research the authenticity of their own empathic interpretations. Next year I intend to take this assignment a step further by dividing the students into small groups and having them actually deliver their speeches to the group."

Limitations on Use of Suggestion

Discipline: Humanities & Social Sciences

Course Level: Undergraduate

Course size: None

Mode: None

### **Suggestion Number: 192 Give exercises for problem visualisation**

IF YOU WANT TO:

- Give interesting and stimulating assignments
- Have students apply concepts to demonstrate understanding - Emphasise conceptual understanding
- Develop students problem-solving skills

YOU MAY WISH TO CONSIDER:

Giving assignments which require students to visualise problems and make approximations.

"I try to get students to see things visually," one engineering teacher says. "I try to get them to understand that there is more than one way to solve a problem."

He notes that with the advent of computers, students are inclined to take even very poor data to five decimal places. "They have little feel for approximation, little experience using a rule of thumb. Without taxing them mathematically, I give them assignments which require them to think visually and to make approximations without resort to a computer."

Limitations on Use of Suggestion

Discipline: Science and Engineering

Course Level: None

Course size: None

Mode: None

### **Give Exams Demonstrating Student Understanding (193-203)**

**Suggestion Number: 193 Use test questions similar to those used in homework**

IF YOU WANT TO:

- Give exams permitting students to show understanding

YOU MAY WISH TO CONSIDER:

Preparing test questions which are similar to those used in quizzes, homework, or discussion.

"I try to generate exam problems that are similar to homework problems so there are no surprises," comments a math professor. "I also try to include problems everyone should be able to do (some very easy ones) as well as questions that require more thought and really make students go beyond the material."

Questions on midterms and final exams should not take a form radically different from those which you use in quizzes, homework assignments, lecture or discussion. For example, if you emphasise higher order questions throughout the course, your midterm and final should not focus narrowly on memorisation or simple multiple choice. Students should have the opportunity to demonstrate their mastery of the material in the same ways you have emphasised in your presentation of it.

Several faculty members stress the importance of showing exam questions to the ta's before the tests are administered. "The ta's are very helpful in identifying test questions which may be too difficult for students. They often see things that I don't when I make up the exams," he says.

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 194) Prepare students for challenging test questions**

IF YOU WANT TO:

- Give exams permitting students to show understanding
- Stimulate students' thinking

YOU MAY WISH TO CONSIDER:

Preparing students for challenging test questions.

In counselling students about her exams, a history professor tells them a week or two ahead of time that the best kind of preparation they can make is to compare  $x$  with  $y$ ,



where x and y may be two playwrights, two orators, and so on whose major works were a century apart. By identifying the x and y and informing them of the comparative nature of the examination, she alerts students to what to prepare for, what to get down "cold." She also lets students know that her exams are "open book" where they can bring in x and y and any notes they have made or anything else they think will be useful. Although her actual midterm and final examination questions are not at all the standard "compare x's view with those of y's regarding z," a student who is prepared to make such a comparison should be able to do very well. The actual questions are more creative, e.g., "Suppose the main character in Moliere's play were to appear in Beaumarchais'

The Marriage of Figaro. How would A (Beaumarchais' main character) react to B (Moliere's main character)?" or "If x and y (from the 17th or early 18th century) had met Rousseau, how would they react to his theories?"

Questions of this type not only require students to understand two historical periods and the major changes which took place between them, but to creatively use that knowledge.

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

### **Suggestion Number: 195) Ask specific questions**

IF YOU WANT TO:

- Give exams permitting students to show understanding

YOU MAY WISH TO CONSIDER:

Being very specific in the questions you ask.

"As beginning essay writers, undergraduates need focused test questions," one history teacher explains. Problem oriented exams can elicit more meaningful responses than broad, vaguely worded questions. For example, it is difficult for a student to respond to a question like, Discuss the implications of the Monroe Doctrine." Students have no sense of boundaries or when they have completed the topic. On the other hand, a question such as, "Illustrate how the Monroe Doctrine might be involved in a Russian-American incident," is likely to generate good responses from students.

The TIES office (2-6392) has available a composition resource guide in which there are tips on writing good essay questions.

Limitations on Use of Suggestion

Discipline: None

Course Level: None  
Course size: None  
Mode: None

**Suggestion Number: 196) Balance the difficulty of test items**

IF YOU WANT TO:

- Give exams permitting students to show understanding

YOU MAY WISH TO CONSIDER:

Balancing the difficulty of test items.

A professor of business administration distributes test items as follows: about 25% are reasonably easy questions that nearly everyone should get correct. About 50% of the questions require a little more sophistication but should be able to be answered by students who have kept up with the course material. About 25% of the items are quite challenging and generally will be answered correctly only by the top 5-10% of the class. "A balanced test with easy, moderate and difficult items gives students an opportunity to show that they have mastered the fundamentals of the course or have gone beyond the minimum," explains this faculty member. "I try to give students a feeling of Satisfaction at the end of the course by providing them with an opportunity to express what they have learned, rather than frustrating them because what they have studied does Not appear on the exam."

A faculty member in civil engineering also balances his test items. "On my exams, 2/3 of the items test whether students have absorbed the material and 1/3 tests how well they can apply the concepts to new situations," he says.

Limitations on Use of Suggestion

Discipline: None  
Course Level: None  
Course size: None  
Mode: None

**Suggestion Number: 197) Include an extra credit problem to write a question**

IF YOU WANT TO:

- Give exams permitting students to show understanding
- Find out what students think was most important in the course - Develop a source of good exam questions

YOU MAY WISH TO CONSIDER:

Including an "extra credit" question on your midterms and final exams which asks the students to write an exam question rather than an exam answer.

One version of this approach has found its way onto the Berkeley campus via a visiting Penn State professor and is used by several faculty members. The original extra credit question is worded: "Almost inevitably instructors fail to ask you in an exam all those things for which you so carefully prepared. As it happens, writing good questions is almost as difficult as writing adequate answers. Thus, to give you your turn on the pitcher's mound, if you have the time and the inclination, write an original exam question. You will receive between 0 and 10 points depending upon the quality of your question. JUST THE QUESTION PLEASE, DON'T SUPPLY THE ANSWER."

This technique helps establish a good rapport with students, gives you additional information on their sense of what is important in the course, and can become an excellent source of possible future exam, quiz, or discussion questions for the course.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 198) Hand out study and review questions before the exam**

##### IF YOU WANT TO::

- Give exams permitting students to show understanding
- Give exams requiring synthesis of parts of the course
- Motivate students to do their best work
- Help relieve student anxiety about tests

##### YOU MAY WISH TO CONSIDER:

Handing out study and review questions before the midterm and final.

Several excellent teachers report that they always hand out study and review questions before exams in their undergraduate courses. A professor of Near Eastern studies says, "This helps relieve test anxiety, especially in a lower division course where Students are less sure what to expect.

"I organise my study questions so that it is apparent not only what is most important, but how the parts of the course fit together. I think this helps students synthesise the material which is what most of my actual exam questions require them to do."

A social science professor hands out a list of 20-25 possible essay exam questions, from which the actual exam questions will be selected. "I find this greatly aids the students' review of the course," he says. "If they prepare to answer each question, they will have

done a major review and there is no reason they should not do exceptionally well in the exam. Of course, there are always students who prefer to play Russian roulette, preparing for only a few of the questions. Still, I get no complaints about the fairness of the tests, and I think it helps most of the students really do their best."

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 199) Hold review sessions before the exam**

IF YOU WANT TO:

- Give exams permitting students to show understanding
- Help relieve student anxiety about tests
- Help prepare students for your kind of examination

YOU MAY WISH TO CONSIDER:

Holding review sessions both before the midterm and the final exam.

Many excellent teachers hold reviews in all of their undergraduate courses, but it is especially important in lower-division courses where many students are still unsure about the performance levels expected of them.

"Many freshmen and transfer students have not really developed good study skills," says one humanities teacher. "Furthermore, because many of them realise or suspect this, their anxiety level is especially high when they enter the University. I try to help them by giving them advanced study questions for reviewing the content of the course and by reviewing these materials in the last class session."

Limitations on Use of Suggestion

Discipline: None

Course Level: Undergraduate

Course size: None

Mode: None

**Suggestion Number: 200) Permit students to bring in one page of notes**

IF YOU WANT TO:

- Give exams permitting students to show understanding
- Help students prepare for tests

- Relieve student test anxiety

#### YOU MAY WISH TO CONSIDER:

Permitting students to bring in one page of notes to be used during an exam.

Several faculty members have found it useful to allow Students to take an 8 1/2 x 11 sheet of notes or index cards into the midterm or final examinations. This strategy decreases students' inevitable anxiety about having to memorise formulas, and the preparation of these crib sheets are thought to help the students focus their studying. Restricting them to one page of notes forces them to synthesise the most important aspects of the course.

"My exams are quasi-open book," explains a faculty member in engineering. "Students prefer open-book, but I don't because they spend too much time looking up things they already know just to be sure. Letting them bring in condensed notes not only gives them a crutch against anxiety, it also provides them with an excellent form of review."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 201 Give two or more midterms and have the first one early**

#### IF YOU WANT TO:

- Give exams permitting students to show understanding
- Identify students having difficulties in the course
- Give students with problems an opportunity to seek help or drop the class

#### YOU MAY WISH TO CONSIDER:

Giving two or more midterms and schedule the first one at the end of the first two or three weeks of class.

A professor of physics makes a point of giving a midterm early enough in the course so that students who are having difficulty can drop the class without penalty. "I consciously make the first midterm rather difficult," he says, "so that students get a realistic picture of the course and their performance." Students who score low are encouraged to see the professor and either seek tutorial help or drop the class. "If they are really having difficulty at the beginning of the course, I counsel them to drop it and to take it at a later date when they are better prepared," he explains.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 202) Distribute sample answers to past exams**

##### IF YOU WANT TO:

- Give exams permitting students to show understanding
- Motivate students to do their best work
- Make your own grading standards more explicit

##### YOU MAY WISH TO CONSIDER:

Giving two midterms, and after the first exam, distributing copies of five sample answers to one of your essay questions.

A political science professor who does this tells the students that one of the five answers received an "A," one a "B," and so on. "Students are asked to decide which response received which grade," he explains. Their guesses are tallied on the board and compared with the actual grade each response received. I then ask students why they gave an 'A' to what was actually a 'C' response, or a 'D' to a 'B' response. Finally, I explain what I am looking for in a response to an essay exam and why I assigned each sample response the grade I did. "I am much more interested in helping students learn how to do well in the course than I am in grading them," he explains. "As a result of this discussion, student improvement of the second midterm is often quite remarkable. I am convinced that the value of spending a small amount of class time this way far outweighs any loss of coverage of additional content." A variation is to use sample responses from a previous semester before the midterm. It is likely to be somewhat less effective, however, because the students will not have the same vested interest in the essay questions and answers.

#### Limitations on Use of Suggestion

Discipline: None

Course Level: Undergraduate

Course size: None  
Mode: None

**Suggestion Number: 203) Give more quizzes than count**

IF YOU WANT TO:

- Give exams permitting students to show understanding
- Decrease student test anxiety
- Eliminate problems with make-up quizzes

YOU MAY WISH TO CONSIDER:

Giving more quizzes than count.

Several faculty members, in grappling with the problems of test-giving, have decided that it is best not to offer make-up exams. "I give weekly quizzes," says a professor in forestry, "but only 14 of the 15 count. This means that students can either 'miss' one quiz or have their lowest score dropped." This is an effective way to eliminate the need for make-up exams.

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Section Twenty-three: Keep Students Informed of Their Progress (204-210)**

**Suggestion Number: 204) Return tests and assignments at the next class meeting**

IF YOU WANT TO:

- Keep students informed of their progress
- Emphasise the learning experience of exams and assignments

YOU MAY WISH TO CONSIDER:

Returning tests and assignments at the next class meeting.

Several excellent teachers stressed the importance of giving students prompt feedback on their performance. "When I schedule student assignments, I block out my own time for grading them immediately following class," one engineering professor says. "This is important for two reasons. First, the quick turn around time ensures that students are still thinking about the assignment. Thus any criticism or feedback is likely to have a stronger impact than if it were delayed a week or more. Second, prompt feedback

indicates to the students the importance of what they are doing and my interest and concern for their learning the material." An English professor agrees. "The impact is enormous when you return assignments at the next class session. The students are still anxious to know how they have done. That's a tremendous advantage in maximising the impact of feedback on their learning."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 205) Discuss solutions or answers to tests and assignments**

##### IF YOU WANT TO:

- Keep students informed of their progress

##### YOU MAY WISH TO CONSIDER:

Discussing the solutions or answers to exams, quizzes, or homework assignments at the next class meeting.

One engineering teacher says that even if he cannot return graded assignments or exams, he always discusses the answers at the next class meeting. "I WANT TO: correct any misunderstandings and reinforce their learning as soon as possible," he says. "Students are much more receptive to this right after completing an assignment."

#### Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

#### **Suggestion Number: 206) Hand out or post solutions as soon as work is turned in**

##### IF YOU WANT TO:

- Keep students informed of their progress

##### YOU MAY WISH TO CONSIDER:

Handing out or posting solutions to exams, quizzes, and assignments as soon as students turn in their work. One chemistry professor does this in all his courses. "There is no point in making students wait several days or weeks to find out how they did," this



professor explains. "They are most interested in the results at the time of the examinations, and it is at the time of examination that the greatest reinforcement of the learning can take place." Note that this method gives the students immediate feedback even though it may be a week or more before the assignments can be returned with comments or grades.

Limitations on Use of Suggestion

Discipline: Math, Science, and Engineering primarily

Course Level: None

Course size: None

Mode: None

### **207) Return a "perfect" exam along with the corrected exam**

### **Suggestion Number: 208) Make extensive constructive comments on student work**

IF YOU WANT TO:

- Keep students informed of their progress
- Motivate students to do their best work

YOU MAY WISH TO CONSIDER:

Making extensive, constructive comments on student work.

Several excellent teachers stressed the need to give students positive as well as negative feedback and to suggest ways in which they might have strengthened their responses. "Students need to know what they are doing well," in addition to what they need to improve," says one professor

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### **Suggestion Number: 209) Have students peer-edit each other's work**

IF YOU WANT TO::

- Keep students informed of their progress
- Motivate students to do their best work
- Have students apply concepts to demonstrate understanding

YOU MAY WISH TO CONSIDER:

Including peer-editing of student assignments (papers, computer programs, or design projects) in your course.

"In my upper division courses, I have students submit two copies of each computer program they write," one faculty member explains. "One copy goes to me and the

readers and the other copy is assigned to another student in the class to evaluate and edit." He believes that learning to program is like learning to write short stories; you learn not only by doing it but by reading programs other people have written. He has students read and analyse exemplary programs, much as they might read excellent short stories. He believes that peer-editing also gives students yet another opportunity to demonstrate understanding. A professor of architecture uses the same strategy with student papers. He has students exchange papers to take home and edit. "The final paper is submitted along with a copy of the first draft with its edited corrections in red," he explains. "Each paper then receives two grades, one for the author and one for the editor." In this way students receive prompt informal feedback from a peer, followed by a grade and a formal critique by the faculty member. This technique helps students acquire good editing as well as good writing skills.

Limitations on Use of Suggestion

Discipline: None

Course Level: None

Course size: None

Mode: None

**Suggestion Number: 210) Have students keep a logbook of their progress**

IF YOU WANT TO:

- Keep the students informed of their progress
- Motivate students to do their best work
- Know if the class is understanding you or not

YOU MAY WISH TO CONSIDER:

Having the students keep a logbook of their work.

The logbook should not be graded on its aesthetics or its organisations as it is intended to be a work in progress, not a final document. Following is an excerpt from a faculty member's course syllabus explaining the procedures to be followed in keeping the logbook. "This term you are being requested to maintain a 'Logbook'. Your logbook should be organised along the following principles: 1) Include notes and thoughts on all design problems, lectures, readings - or anything that bears on this course. 2) After each project is complete, include a photograph or sketch of it in the book. 3) After each review, comment on what was said about your project and indicate how you would modify your scheme if you were continue to work on it. 4) At the end of the term, reread all the material in the book, making new comments from your advanced perspective. 5) The logbook will be reviewed at mid-semester and will be due on the last day of class."

Limitations on Use of Suggestion

Discipline: Arts, Lab sciences

Course Level: None  
Course size: None  
Mode: Studio, Lab

## **Section Twenty-four: Make Effective Use of Teaching Assistants (211)**

### **211 Guide, train and supervise Teaching Assistants**

#### **IF YOU WANT TO:**

- Make the most effective use of teaching assistants
- Improve the quality of large undergraduate courses
- Provide valuable learning opportunities for graduate students

#### **YOU MAY WISH TO CONSIDER:**

Implementing good practices in teaching assistant guidance, training and supervision.

In an important sense, the teaching of large undergraduate courses with Teaching Assistants is a special form of team-teaching. As is any team-teaching effort, the success of the course depends on the quality of two-way communication both in the planning and the conduct of the course. In recent surveys and TA training conferences, Berkeley Teaching Assistant have repeatedly complained that they do not receive the kind of guidance and support from faculty members that allow them to do their best and to develop as teachers. The following list of good practices is recommended to faculty members for enhancing both undergraduate instruction at Berkeley and the development of future college and university teachers.

- + Set up a meeting to discuss the course and the ta's role thoroughly before the semester begins (covering such topics as procedures, responsibilities, grading, and best ways of spending time in sections).
- + Give ta's a copy of the course syllabus and readings at least a week before class begins.
- + Recommend additional readings on course topics unfamiliar to the ta's so that ta's feel comfortable with the material.
- + Get ta's together with those who have been ta's for the course in previous years, so that new ta's can benefit from the experience of their predecessors regarding best ways of spending time in sections, chief problems students may experience, ways of stimulating discussion, etc.

- + Let ta's know that instructors are available to provide supervision and guidance to make the life of the TA as a novice teacher more rewarding and to see that the learning experience of the undergraduates is the most effective.
- + Share anecdotes with ta's about the problems they experienced when they began to teach and pass along whatever "tips" they might have so ta's do not think that their own anxieties are unique.
- + Require ta's to attend course lectures, so that ta's know what material has been covered and how, so that they may be better prepared in sections to fill gaps, correct misunderstanding, etc.
- + Schedule their own office hours at different times than the ta's' in order to maximise students' opportunities to consult with the course staff.
- + Ask ta's to give them brief weekly written reports on any problems the students may be having in the course (e.g. "List the 1 or 2 things that caused students the most difficulty in class last week.").
- + Get together with ta's once a week to discuss how the course is going, and what improvements could be made based on their individual observations.
- + Get together with ta's to design course assignments and exams and to develop common criteria for grading, both to improve the course and to give guidance and practical experience to the ta's.
- + Review ta's comments and/or grades on at least the first set of essays, problem sets, quizzes or lab reports and discuss criteria for grading and the best ways to give students feedback.
- + Ask ta's weekly to help identify students having difficulty and to give individual help where possible, referring more difficult problems to the instructor.
- + Inform ta's about campus resources for referring students who need tutorial assistance, advice, or counsel beyond that which the TA is qualified to give.
- + Encourage ta's to give the instructor constructive feedback on ways of improving his or her lecture presentation by identifying specific areas to focus on which the faculty member suspects might be weak, e.g. explanations, summaries, blackboard work, speed and tone of voice.
- + Give ta's an opportunity to prepare and deliver a lecture or "mini lecture" on a course topic they know well, and then give them constructive feedback on aspects of their presentation, e.g. organisation, explanations or examples, speed and tone of voice, use of blackboard, handling of questions, etc.

- + Arrange for ta's to be evaluated by their students (mid- quarter and/or at the end of the quarter) and discuss the results of these evaluations in ways that will help the TAs improve their teaching, e.g. giving them concrete suggestions about how they might improve.
- + Visit TA sections at least once during the term and talk with each TA constructively about his/her strengths and make suggestions for improvement based on the faculty members own teaching experience.
- + Set up a schedule of classroom visits so that each TA is visited by two other ta's to give each other feedback and "tips" for improving specific aspects of their teaching based on their observations and their own experiences. (TIES has guidelines for classroom visits).
- + Contact the Educational TV office and arrange to have someone talk to the ta's about the opportunities for having their sections videotaped to give them additional feedback on their teaching (the person to contact is Ann Juell and the number is 642-2535).
- + Inform ta's of other resources to help them improve their teaching, e.g. departmental orientations, workshops/ colloquia, 300 courses, the Graduate Assembly, TIES, TA handbooks, disciplinary journals concerned with teaching, exemplary teachers or experienced ta's in or outside the library or files of materials on teaching in the discipline, other courses on teaching given on the campus.
- + Treat the ta's as junior colleagues who are hired to help undergraduates get the best possible educations as well as to improve their own teaching skills.

## **Section Twenty-five: Develop an Impressive Introductory Course**

### **Suggestion Number: 212) Implement good practices in teaching lecture courses**

#### IF YOU WANT TO:

- Develop and teach an impressive introductory course
- Handle large classes with ease and pleasure

#### YOU MAY WISH TO CONSIDER:

Implementing good practices in teaching large lecture courses.

The following list of good practices describes ways of improving the instruction of freshmen and sophomores in traditional lecture and discussion courses.

- + Meet with your ta's before the term begins to discuss course procedures, their responsibilities, grading and the most effective ways for them to spend time in sections; continue to meet weekly to discuss how the course is going and ways of improving it.

- + Get to know your students by learning their names and something about their backgrounds and interests.
- + Discover and build on what students already know by giving diagnostic tests or brief questionnaires.
- + Give the students a good detailed syllabus and refer to it frequently.
- + Focus on just a few main concepts, themes, or points rather than going into all the complexities of a topic.
- + Plan the beginnings and endings of your lectures so that you "open with gusto" and "finish strong."
- + Begin each lecture by letting the students know what you are going to talk about and why.
- + Use the blackboard to outline lecture topics or to list questions students should be asking themselves during lecture and refer to it when making transitions.
- + Take a look at your blackboard work. Can it be seen from the back of the room? Is it legible?
- + Give students an early assignment or diagnostic test and develop remedial or review materials for those who will need them.
- + Organise your lectures carefully, but try to deliver them without detailed notes so that you can maintain eye contact and get cues from students as to their understanding.
- + Give students frequent short assignments and quizzes so that you and they will know whether they are understanding the material.
- + Don't make assumptions. Write out and define not only technical terms but other words or expressions with which the students may not be familiar.
- + Try to refrain from such comments as, "Now, I know you all know this" (many of them don't). Or "You don't know this?"(which makes them feel stupid).
- + Try to empathise with the students confronting this material for the first time; slow down and acknowledge the difficulty and importance of certain concepts or operations.
- + Intersperse your lectures with questions to students; this makes them active participants in learning.

- + Leave the last 0 or 5 minutes for student questions; try taking several questions at once and responding to them with a mini-lecture.
- + Encourage the students to form small study groups; help them get to know one another by giving short team assignments.
- + Write "See me" on any assignments which would receive a grade of C-minus or below so that you can give early assistance to students having difficulty.
- + Drop in on section meetings regularly to see how things are going and to get to know the students.
- + Ask ta's to give you periodic written reports on any problems students may be having, e.g., "List the one or two things that caused students the most difficulty in sections last week."
- + Give mini-lectures on such topics as "how to study," "how to read a difficult text," "how to prepare for an exam," or invite someone from the Student Learning or Counselling Center to give such a presentation in your class.
- + Relate your subject matter to current events or research which may be of interest to students and give them assignments for which there may be "real world" audiences whenever possible.
- + Give students advance study questions to help them prepare for tests and hold review sessions before examinations.
- + Have the students write exam questions as part of the review.
- + Give two or more midterms rather than one so that students have every opportunity to do well in your course.
- + Return papers and exams promptly and review them at the next class meeting.
- + Keep a journal or log of what explanations, techniques, or assignments worked well and share these with colleagues teaching the same or similar courses.
- + Get feedback from students once or twice during the quarter by asking them to write on two or three questions, such as "What is the most significant thing you have learned in this course so far?" "What, if anything, is still unclear?" or "What Suggestions do you have for improving the course?"
- + Acknowledge student feedback at the next class meeting and indicate which changes you can and which you cannot make and why.

+ Sit in on courses taught by those of your colleagues you know to be especially effective teachers to see what other ideas or techniques you can pick up.



## Appendix A

### Student Description of Teaching

Department \_\_\_\_\_ Course Number \_\_\_\_\_

Instructor \_\_\_\_\_ Semester \_\_\_\_\_ 19\_\_\_\_

The following items reflect some of the ways teachers can be described. For the instructor named above, please circle the number which indicates the degree to which you feel each item is descriptive of him or her. In some cases, the statement may not apply. In these cases, check "Doesn't apply or don't know."

Responses will not be returned to the instructor until after final grades have been given.

Not at all Descriptive  
Very Doesn't apply or  
Don't know

1. Discusses point of view other than his/her own 1 2 3 4 5 ( )
2. Discusses recent developments in the field 1 2 3 4 5 ( )
3. Gives reference for more interesting & involved points 1 2 3 4 5 ( )
4. Emphasises conceptual understanding 1 2 3 4 5 ( )
5. Explains clearly 1 2 3 4 5 ( )
6. Is well prepared 1 2 3 4 5 ( )
7. Gives lectures that are easy to outline 1 2 3 4 5 ( )
8. Summarises major points 1 2 3 4 5 ( )
9. Identifies what he/she considers important 1 2 3 4 5 ( )
10. Encourages class discussion 1 2 3 4 5 ( )
11. Invites students to share their knowledge and experiences 1 2 3 4 5 ( )
12. Invites criticism of his/her own ideas 1 2 3 4 5 ( )
13. Knows if the class is understanding him/her or not 1 2 3 4 5 ( )
14. Has students apply concepts to demonstrate understanding 1 2 3 4 5 ( )
15. Gives personal help to students having difficulties in course 1 2 3 4 5 ( )
16. Relates to students as individuals 1 2 3 4 5 ( )
17. Is accessible to students

outside of class 1 2 3 4 5 ( )

18. Has an interesting style of presentation 1 2 3 4 5 ( )

19. Varies the speed and tone of his/her voice 1 2 3 4 5 ( )

20. Motivates students to do their best work 1 2 3 4 5 ( )

21. Gives interesting and stimulating assignments 1 2 3 4 5 ( )

22. Gives examinations permitting students to show understanding 1 2 3 4 5 ( )

23. Keeps students informed of their progress 1 2 3 4 5 ( )

## Appendix B

### Faculty Self-Description of Teaching

Department \_\_\_\_\_ Course Number \_\_\_\_\_

Instructor \_\_\_\_\_ Semester \_\_\_\_\_ 19\_\_\_\_

The following items reflect some of the ways teachers can be described. Please circle the number which indicates the degree to which you feel each item is descriptive of your teaching in this course. In some cases, the statement may not apply. In these cases, check "Doesn't apply or don't know."

Not at Very Doesn't  
all Des- Descrip- apply  
or  
criptive tive don't  
know

In teaching this course, I:

1. Discuss points of view other than my own (see Section One) 1 2 3 4 5 ( )
2. Discuss recent developments in the field (see Section Two) 1 2 3 4 5 ( )
3. Give references for more interesting & involved points (see Section Three) 1 2 3 4 5 ( )
4. Emphasise conceptual understanding (see Section Four) 1 2 3 4 5 ( )
5. Explain clearly (see Section Five) 1 2 3 4 5 ( )
6. Am well prepared (see Section Six) 1 2 3 4 5 ( )
7. Give lectures that are easy to outline (see Section Seven) 1 2 3 4 5 ( )
8. Summarise major points (see Section Eight) 1 2 3 4 5 ( )
9. Identify what I consider important (see Section Nine) 1 2 3 4 5 ( )
10. Encourage class discussion (see Section Ten) 1 2 3 4 5 ( )
11. Invite students to share their knowledge and experience (see Section Eleven) 1 2 3 4 5 ( )
12. Invite criticism of my own ideas (see Section Twelve) 1 2 3 4 5 ( )
13. Know if the class is understanding me or not (see Section Thirteen) 1 2 3 4 5 ( )
14. Have students apply concepts to

- demonstrate understanding  
(see Section Fourteen) 1 2 3 4 5 ()
15. Give personal help to students having difficulties in course  
(see Section Fifteen) 1 2 3 4 5 ()
16. Relate to students as individuals  
(see Section Sixteen) 1 2 3 4 5 ()
17. Am accessible to students outside of class (see Section Seventeen) 1 2 3 4 5 ()
18. Have an interesting style of presentation (see Section Eighteen) 1 2 3 4 5 ()
19. Vary the speed and tone of my voice  
(see Section Nineteen) 1 2 3 4 5 ()
20. Motivate students to do their best work (see Section Twenty) 1 2 3 4 5 ()
21. Give interesting and stimulating assignments (see Section Twenty-One) 1 2 3 4 5 ()
22. Give examinations permitting students to show understanding  
(see Section Twenty-Two) 1 2 3 4 5 ()
23. Keep students informed of their progress (see Section Twenty-Three) 1 2 3 4 5 ()

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