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STUDENT INVOLVEMENT and STUDENT SUCCESS

THE UNIVERSITY COLLEGE OF THE CARIBOO

MEMORANDUM

Date: **February 16, 1996**

From: **Peter Peters**

Nancy Levesque
Director, Library Services

Dear Nancy:

I would appreciate your comments and suggestions.

Please pass the handbook on "Student Involvement and Student Success" to other interested faculty in your area.

STUDENT INVOLVEMENT
and
STUDENT SUCCESS

A Guide to Student Centered Learning

for Instructors at College and Universities

by
Peter Peters
University College of the Cariboo

PREFACE

This handbook contains a number of teaching or, better, learning processes which, when diligently applied, can increase student involvement and raise performance standards. It is my hope that my colleagues will explore one or several of the techniques.

It will give me great satisfaction to receive your comments. Please feel free to write your comments on the left hand side of the pages or forward them to me via E-Mail: "Peter@Cariboo.bc.ca".

If you have already explored similar techniques in your lecture, labs, or seminars I would be very pleased to hear from you.

Sincerely yours,

Peter Peters

ACKNOWLEDGEMENTS

Over the years in which I developed the various processes of student involvement a great number of people, colleagues and students alike, have contributed with their suggestions, comments, and criticism. I would like to acknowledge those who have had a special influence on my work.

Among the faculty at present at the College, **Penny Heaslip**, **Henry Hubert**, **Alastair Watt**, and **Dave Williams** have been most willing to discuss the pros and cons of various approaches to teaching and very generous in sharing their experiences and research with me. From among those who have left the college I like to recognize **Bo Hansen** and **Nelson Riis** for their valuable insights into the intracacies of college teaching.

A special note of appreciation go to: **Richard Olesen** for defending my often unorthodox teaching methods, to **Zéna Seldon** for encouraging me to continue writing, and to **Jim Wright** for inviting for in-service innovative and sometimes controversial proponents of change to Cariboo College. A heartfelt thank you goes to **Carol Costache** for her cooperation and patience in typing the manuscript.

Special thanks go to the many hundreds of students who so willingly served as subjects in the many experiments I have conducted in my lectures and seminars through the last fifteen years. Their tolerance and their feedback allowed me to investigate and improve many versions of student involvements. It is my fervent hope that other students will become the beneficiaries in years to come.

A LETTER TO MY COLLEAGUES

Dear Colleague:

The lack of student involvement and active student participation in the lectures and seminars is of continuing concern to many of us. It is indeed a frustrating experience to stand in front of a class and, inspite of valiant efforts, receive little if any feedback in the form of questions, comments or arguments.

If students participate it is generally the same half a dozen or so that venture to ask questions or make comments. The large majority remains silent. Yet we know that those who remain silent rarely have a good grasp of the material we are discussing.

This handbook describes a number of techniques which when applied correctly can break the silence and involve a surprisingly large number of students actively in the lectures or seminars.

These techniques, which I prefer to call processes are **generic**, that is to say, they can be applied in any discipline. Although they have been developed with first or second year college or university students in mind they can be applied to any group of students. They are effective and enjoyable for instructors and students alike.

It is possible to use one or several of these processes and integrate them into the existing framework of instruction. They can be modified to suit your discipline and your particular style of teaching.

The techniques described in this book are based on three simple premises. The first premise states that **the primary goal of instruction is learning**. The second premise is that **students require a safe environment** to become involved and express themselves freely. The third premise asserts that **small groups interaction** provides that environment.

The proof of the pudding is in the eating. I encourage you to try any one of the techniques in one of your classes. I am sure you and your students will enjoy the experience.

Wishing you much success,

I remain, sincerely

Peter Peters

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Introduction

A variety of techniques of student involvement in lectures and seminars are described in detail in the following chapters. These techniques are easy to implement, improve student participation, raise standards of performance, and are also fun for both, instructor and students. Indeed, they make students and the subject come more alive. Groups of passive and, at times bored students, become a community of active learners.

Overall the generally static environment of the lectures - instructor active, students passive - is transformed into a more dynamic environment in which all students have an opportunity to be active participants in the learning process.

The role of the instructor changes. Rather than concentrating solely on the subject matter the instructor gives attention to his students: facilitating, organizing, answering, adjudicating, challenging. This role may at first feel strange to instructors who in the past have been used to delivering a monologue or interacted with only a few of the more outspoken students.

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By changing the process the instructor can affect the degree of student involvement.

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The conventional process of teaching assumes that student involvement depends on the nature of the subject material and on the personality of the instructor. The premise of the techniques described in the next chapters is that the degree of student involvement is primarily the result of the **process** used in lectures and seminars. By changing the process instructors can easily affect the degree of student involvement as well as other highly important variables such as student interest and student performance. Indeed, relatively minor changes in the process can lead to significant changes in student comprehension, retention, and performance.

The techniques or processes suggested here have been tested over a number of years. They not only lead to a significant increase in student involvement but also lead to a number of highly desirable outcomes including increased feedback from students to instructor, improved performance of students, a reduced workload for instructors, and the acquisition by students of skills highly desirable in later professional life.

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The degree of student involvement is primarily the result of the process used.....

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Any specific technique often has several effects. For example, Active Learning Circles (ALCs) result in active student participation, improved understanding by students, immediate feedback to the instructor, and the acquisition of cooperative skills. The emphasis on note taking skills results in a greater involvement in the lecture, increased understanding and retention of the material, improved performance on examination, and, again, the acquisition of a skill very useful in later professional life.

Although the various techniques explained can be used as package, they are not dependent on one another. Instructors may select only those techniques they feel comfortable with or introduce the techniques over time in any given order.

Indeed, most of these techniques are flexible and leave much room for creativity on part of the instructor to change and improve each process. Improving these techniques implies the pursuit of excellence since excellence may be defined as the search for more effective and elegant processes or solutions.

Instructors at colleges and universities are busy people. The demands of teaching, keeping up with the latest developments in the discipline, and engaging in research require much time and effort. To save time this handbook has been organized in a fashion that allows

the reader to gain maximum results without a sizable investment in time.

The first part of the book contains a description as well as a summary of each technique. Instructors interested in applying any of the techniques may thus read only the relevant section and, with the help of the summary, begin exploring the techniques in the lectures or seminars.

Other parts are in preparation. The second part of the book will contain several essays dealing with the relationship of teaching processes and ideas or events in the world around us. References and sources for additional information will be described in the third part.

PART I

The Techniques

Beginning The Term

For instructors the first two weeks of the term are probably the busiest and most demanding weeks of the semester. Meeting the new students, explaining the logistics and content of the course, and a variety of decisions about rooms, admissions or withdrawals, and other detail occupy the mind and the time of an instructor.

Preparation and organisation is the key not only to a successful first two weeks but a successful semester. In these two weeks instructors set the tone, clarify the logistics, and generally help students to get started.

During the first week, outside of course content, I focus on three aspects. The first is to introduce myself and have students get acquainted with each other. The second is to clarify to students the short and longterm logistics of the course. The third is to learn the names of students.

Getting to Know Each Other

The conventional model pays little attention to the way students get acquainted with each other. This, it is generally assumed, is the responsibility of students presumably done outside the classroom. Customarily the instructor conveys information about office hours, type of examination, grading procedure, etc., and pays no heed to the relationship that students have with each other.

Unfortunately students have few skills and little opportunity to get to know each other. Unless they know each other from high school they remain strangers. As strangers they remain alienated. They are less able to cooperate or take part in discussion inside or outside the classroom. Since conditions are similar in other courses, college or university remains an alienating experience for many.

Fortunately this can be rectified easily. In the beginning of each term instructors can with relative ease assist students to become acquainted with each other thus reducing alienation and increasing cooperation among students. It is best to start this process during the very first lecture of the term. The following procedure may be helpful.

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Students generally have few skills and little opportunity to get to know each other

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After introducing herself briefly at the start of the first lecture, the instructor asks and helps students to form groups of three or four and to introduce themselves to each other by stating their name, where they come from, why they take this course, and what their overall goals are in attending college or university.

From my experience students require and appreciate help with forming groups and with knowing what kind of information to give to other members of their group. It is best to write the information on the board, on an overhead, or give each group a sheet of paper describing the exact procedure.

While this session may be brief it does serve a very important purpose. Strangers become acquaintances and faces have names and personalities. The exercise may be expanded by having students tell each other more details of their lives and later to ask one person from each group to share an aspect of their lives with the whole class.

If the course has seminars, labs or tutorials the same or an expanded exercise can be used to reduce alienation and the process of building a learning community. The exact process may vary depending on the personality of the instructor. One such process is discussed in the following paragraphs.

During the first seminar the instructor assists students in forming teams of three students each and request that they introduce themselves and talk about their recent experiences during the summer. Suggest topics such as:

What kind of job did you have during the summer?
Talk a little about the job. How did you get it?
Was it difficult in what way? Was it profitable?
What was the most memorable experience of the summer?

At the beginning of the winter semester an instructor might ask students to relate their experiences over the Christmas holidays. What kind of presents did they receive, was the Christmas gathering large or small, did they go to parties, etc..

After about twenty minutes of sharing in each group an instructor may ask each group to select one student to share his experiences, especially the most memorable one, with the seminar as a whole. Many experiences are quite humorous and students enjoy getting to know about each other.

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Each group selects one student to share memorable experience with other students in the class

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The topics chosen by the instructor are then basically designed to reduce alienation, to make students feel comfortable in each others company, and to build trust within each group and the class as a whole. Few students have had experience with group work and the exercise serves to introduce students to the practice of team work in a rather enjoyable way.

When chairs and tables are movable, it is very advisable to arrange table and chairs in a triangle formation. This formation is quite crucial since it contributes to effortless communication within the group.

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Introductions reduce alienation, establish a basic trust and make students feel more comfortable....

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In my experience I have found that students in the beginning of the term require and appreciate assistance in all aspects of this exercise. Students possess limited social skill and are not able to converse with each other easily. Thus specific directions on the formation of groups and topics to be discussed are crucial for the success of this exercise.

When the activity is successful there are many rewards. Alienated and passive individuals are transformed into groups of more lively and resourceful participants.

Memorizing the Names of Students

Unless groups are very large it is quite possible and very desirable to memorize the names of students. Calling on students by names is more civilized and more effective. While most instructors have their own method of memorizing names, taking pictures of small groups of students is a very efficient method. This may be done in the following manner:

> Before the end of the first or second hour of the lecture or seminar, immediately after students have formed groups for the first time, an instructor takes pictures of groups of students. Personally I prefer to take these pictures outside with two students sitting on chairs, the other two standing behind them.

The pictures are developed overnight, stapled to an 8 x 11 1/2 sheet of paper and given back to student the following lecture or seminar. Students then print their name corresponding to their position in the picture on the paper.

It is now possible for an instructor to learn or refresh his memory of students' names anytime it is convenient.

Introducing the Format of the Course

Nearly all instructors at colleges and universities provide a course outline for students and the adminstration. In conventional instruction the course outline generally contains only the course content, readings and assessment. Occasionally instructors will indicate when the material will be discussed and tests will be held. I have seen course outlines only half a page long, while others extend to two pages.

Very few course outlines contain comments about the process since the process is very conventional and well understood by students. However, an instructor using team work puts considerable emphasis on the process of teaching and learning in lectures and seminars. It is then appropriate to explain these processes to students in detail. Besides comments on organisation, readings, and assessment, the course outline might contain descriptions of the goals of the course, the logistics of the lectures and the seminars, and the importance of cooperation. In addition, the course outline may contain the specific requirements of the examinations, the importance of note-taking, and a precise description of the meaning of letter grades. This can be followed by the traditional listing of the course content resulting in a course outline of about seven to eight pages. For a sample Course Outline see Appendix, Page 78.

It is effective to distribute the course outline immediately after students have introduced themselves. Each students reads the course outline on his own, then discusses the material with members of his/her group focusing on the following questions:

What is different about this course?
What parts do you find interesting?
What aspect makes you apprehensive?
What else would you like to know?

The goal of this exercise is to focus the attention of students on various aspects of the course as described in the course outline and further to allow students from the safety of their groups to express their approval, concerns, and apprehensions.

After a few minutes of discussion groups are asked to comment on a specific part of the course outline focusing on those aspects that are different, interesting, or appear difficult. Here the instructor has an opportunity to elaborate and clarify, to alleviate fears or to explain his or her particular teaching philosophy and approach.

The formation of groups, the interaction among students in these groups, and the ensuing discussion set the tone for the following lectures. It is also appropriate at this point to select two students to give a review or summary of this lecture at the beginning of the next lecture.

To introduce students to the content of the course and to acquaint students with their textbook an instructor may request that students review their textbook. Here again the stress is on student involvement: the student rather than the instructor explains the dimensions of the course and the topics discussed in the text. The instruction for the review maybe included in the course outline. A more detailed instruction of this, the first assignment, is presented in the next chapter.

SUMMARY OF THINGS TO DO

- After introducing yourself help students to introduce themselves to each other in groups of three or four.

- Assist students in forming groups.

- Distribute the course outline and allow students to discuss the parameters of this course in their groups.

- Ask for feedback from groups and deal with their questions, comments, and concerns.

- Select two students to give a review next class.

- Discuss and assign the textbook review.

The Textbook Review

The beginning of a term is an excellent time to encourage students to become involved with the textbook. But mere encouragement is rarely enough. True, some students will browse in the textbook, others will merely glance at it. Few will study it in a systematic manner that leads to an understanding of the textbook as a whole and its relationship with the course.

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In the beginning of a term students feel invigorated and are eager to do well in the course.....

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Assigning a textbook review with specific instructions as well with assigned marks is a very effective way to have all students look at the textbook within the first week of the course. Since all students receive the same specific instructions they all share a specific knowledge about the broad dimensions of the textbook and, depending on the instructions, about the general dimensions of the course.

Naturally students are not expected to read the entire book or even substantial sections of it. Rather they are instructed to view the overall organisation, makeup, appearance, and, in broad outline, the topics covered by the text. In addition they are asked to compare their text with at least two others which can be found in the library.

It is also possible to direct students to read and/or study specific sections, pages or passages of the book. Having done so they may be asked to answer some specific questions. This approach could be very useful if an instructor wants students to pre-read a certain section or to understand some central message important in the understanding of the course.

In the beginning of the term students feel invigorated and very eager to do well in the course. They thus do well on this assignment. Many however fail to follow all the instructions. To deal with this problem basically two approaches are possible. One, the instructor accepts the incomplete assignment and assigns low marks or, two, the instructor returns the paper asking the student to complete the assignment. The first approach is easier: students expect it and the instructor can simply mark the assignment and be done with it.

But each approach sends a very specific message to students. Accepting incomplete work implies that instructions need not be taken too seriously and standards are flexible. Not accepting or returning an incomplete assignment sends the opposite message: standards are high and instructions must be followed.

Personally I prefer the second approach since it puts responsibility for success on both, instructor and student. The student is responsible for high standards in his work and the instructor ensures that all students adhere to these standards. This approach appears especially important in the first assignment but, in my opinion, should be maintained throughout the course.

The exact details of the instructions for the review will vary depending on the book(s) or textbook(s) used in the course and the intentions of the instructor. I find it efficient to attach the instructions and an example of a book review to the course outline which students receive and discuss during the first day of classes. For a sample Book Review see the Appendix on Page 88.

INSTRUCTIONS TO STUDENTS

You are asked to review your textbook. The review should have a length of approximately 500 to 750 words (2-3 pages) and must be typed. Please present the review in a clear plastic folder one week from today at the end of the lecture.

You are asked to assess, praise, and/or find fault with various aspects of the text.

Specifically you are asked to address yourself to the following aspects:

Note the facts of publication: author, title, edition, year, publisher. Give a brief introduction to the topic. DO NOT copy the description used in the preface or introduction. State the task the author wants to accomplish and the major topics. What are the topics relevant to this course (check with your course outline).

Next go to the library and search for two first or second year textbooks in economics which you feel are comparable to your textbook. Noting the facts of publication briefly describe one of the texts from the library.

Continue by evaluating the following:

- the use of tables, charts, and footnotes.
- the writing style of the author
- The structure of the text and/or each chapter.

By browsing through the textbook find one topic or chapter that appears interesting to you (explain why) and another area that appears to be complex or difficult (why ?).

Finally give your overall impression of the book. Do not hesitate to criticise various features of the book.

When writing the final draft pay attention to your layout and the appearance of your textbook review. Before handing in the review be convinced that a report such as this, if handed in to your boss at work, would improve your chances of promotion in your job.

I encourage you to work cooperatively with other students by discussing the textbook and the assignment, analyzing each other's work and sharing information. Note however that you may not copy each other's work.

Group discussions about the Review

Having been given detailed instructions as well as an example of a book review and, by working cooperatively with other students, the assignment is generally well done and easy to mark.

If the instructor wishes she/he may discuss with students some aspects of the text she/he and the students find noteworthy. This may take the following form:

Students are asked to form groups and, within each group, to discuss their views about certain aspect of the textbook. In order to avoid a general or trivial discussion it is preferable to give students some guidance.

For example, students may be asked to share with each other the topics or chapters they find most interesting and what they hope to get out of this particular topic or, what aspect of the text they liked or disliked most.

After working in groups for about five minutes the instructor may then ask for feedback from individual groups to the class as a whole, noting particular aspect by writing them on the board and/or responding to the expressions or concerns of the students.

This kind group work with additional feedback is useful for students as well as the instructor. Students begin to understand the particular concerns of other students and feel part of community of learners. In addition, students begin to understand the overall dimensions of the textbook and, by extension, the course.

SUMMARY OF THINGS TO DO

- Give students printed instruction on the format and structure of the textbook review.

- If possible hand out a sample of a review.

- Stress that all requirements of the review have to be fulfilled.

- Briefly explain the main features of the review.

- Set a deadline when completed assignment have to be handed in.

- When students hand in their reviews, reject those that are incomplete or poorly done.

- Engage students in a discussion of some features of the text or course.

The Student Lecture Review

At the beginning of a lecture many instructors review the material that had been presented in the previous lecture. The review reminds students of the content of the previous lecture and thus increases the continuity of the material.

Reviewing the material was, to a greater or lesser extent, a part of my lectures. However, when I began to search for ways of involving students in the learning process I began to experiment by asking students to give a brief review at the beginning of my lecture. The results were mixed: Some did an excellent job while others were careless in their explanations. However, I realized the potential benefit of a student review in the overall learning process.

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A review is for feedback only without evaluating the student.

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After a period of experimentation with the format of the review and the time allowed for the review the presentations improved. Curiously enough my attitude towards students and my response to the presentations played a crucial role in the success of the process.

A review done by students rather than the instructor can become a regular, successful feature of the learning process. This technique has many advantages and can be applied with great success by any lecturer in any discipline provided she is able to give feedback in a friendly manner with a non-judgemental professional attitude.

Advantages of the Technique

Charging students with the responsibility of presenting a review of the previous lecture, has a number of powerful advantages:

- Students rather than the instructor open the lecture. It is an implicit signal which says: "The work and contribution of students is important in this class."

- Students have an opportunity to practice public speaking about a topic of the discipline in a professional manner and in the precise terminology of the discipline.

- All students take part in the exercise and students begin to view themselves implicitly as part of a community of learners.

- By observing many presentations throughout the term students are exposed to a variety of approaches with varying degrees of structure, clarity, precision and completeness.

- The review allows for reciprocal feedback. Students present a summary of their understanding of the material to the instructor. At the same time the instructor has an opportunity to comment on the structure, clarity, and completeness of the information. Normally both kinds of feedback are limited to the examination and involve evaluative and often punitive feedback.

- Most importantly, the review provides a forum of discussion on the one hand and systematically communicates expectations about standards on the other hand.

Presenting the review also teaches students how to prepare for examinations since the basic process is the same in each case. The first step is to compile accurate, complete, and well structured notes and to understand the material. The second step is to summarize these notes. The third step is to rehearse the presentation several times at home. The fourth step is to write the summary on the board. The final step is to talk about the material on the board.

Introducing the Review

It is best to introduce the techniques at the very beginning of the term. The approach I use is the following: At the start of the first lecture in an aside, I ask two students to present a review of this class at the beginning of the next lecture. These students are either former students of mine already familiar with the process or more mature and confident students. Designating two students rather than one to present the review gives the students greater confidence and allows more students to participate in the process.

The purpose of the review has already been explained in the course description. Students have read the description and discussed the highlights during the first lecture. During the second lecture and after the review given by the first two students I again explain the purpose and the logistics of the review emphasizing that this review is for feedback only without evaluation of the performance or judgment of the students presenting the review. A sheet with the dates of the following lectures is circulated among students and pairs of students write their names in the spaces provided (no blank spaces, please).

Students who give the summary lecture are asked to arrive about ten minutes early and write a structured summary of the previous lecture on the board. At the precise hour the students begin their presentation.

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A review provides a unique opportunity for the instructor to provide for honest and immediate feedback.....

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Students are asked to speak freely using the information written on the board rather than reading from prepared notes. However when students appear to feel very insecure or have difficulty with the English language they may give the presentation in whatever manner they feel most comfortable.

Naturally many students are nervous before and during the review. They are afraid to be "shot down" by the instructor or to look foolish in front of other students. To reduce students' anxiety it is helpful to adopt a very friendly yet professional attitude and to assure students again that the focus of the exercise is the review of the material, not the performance of the student.

Correcting Errors

The review presents an excellent and unparalleled opportunity for the instructor to give honest and direct feedback to those presenting the review as well as to the rest of the class. This is a feature that is so sadly lacking in the conventional process in which the only feedback to students occurs after the examination.

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When errors occur... correct the error, not the student.

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In my opinion it is essential to give prompt feedback, i.e., to interrupt the reviewer the moment the error occurs rather than waiting until the end of the review. My interruptions take the general form of "One moment, please. What you just stated is not correct." Frequently neither the reviewer nor the class is aware that an error occurred. In that case I ask the reviewer to repeat the last sentence.

That is more difficult then it appears. Very few students are able to repeat exactly what they said the previous moment. After some confusion and at times with the help of the class we isolate the particular error and, again with some help from the class, select the correct term.

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The focus of attention is always on the accuracy of the review not the performance of the student.

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There are a number of important points to consider. In the first place an error has to be corrected the moment it occurs. In the second place the feedback has to be short, friendly, and matter of fact. Finally the language used must be non-judgmental.

For example, an error is neither "bad" nor "good". These words represent value judgments, that are internalized by students. A statement is "correct" or "incorrect", "appropriate" or "inappropriate". Please note the emphasis on the word "statement". It is the statement that is correct or incorrect, not the student.

It is more difficult for students to internalize this kind of language and attention remains focused on the material rather the performance of the student. By employing this type of value free language students are less fearful, remain open minded and are more willing to learn, to improve, and to be involved in the process.

Generally a review session takes between five and ten minutes although in exceptional cases more time is spent correcting errors and misconceptions. It should be noted that the review provides not only feedback to students but gives also highly valuable feedback to the instructor on the ability of students to understand and handle the material of the previous lecture.

Presenting a Successful Review

The material in a successful review lecture needs to be well structured, clear, precise, and complete. These are also the requirements of efficient note taking and they form at the same time the basic characteristics of a successful examination. There exists therefore a kind of synergy between the three techniques in which the exercise of each enhances the other two.

Students whose turn it is to present the review naturally take especially lengthy and thorough notes of the previous lecture. They must also confer with each other before the review. As a result the written work on the board is generally well structured and organized.

From the point of view of the student the process of preparing for the review maybe summarized in the following manner:

- Take accurate and complete notes.
- Read your notes and make sure you understand the material.
- Read the material again and concentrate on the structure.
- "Chunk" the material and memorize each chunk.
- Rehearse the material aloud and check your timing.
- Continue until you are satisfied.
- If you have a problem please call on me.

When the presentation has been deficient in some aspect I briefly ask the student to tell us which part of his process needs to be corrected or improved. Interestingly enough most students are quite aware of deficiencies in the presentation.

At the end of the review I initiate and encourage a general round of applause acknowledging the efforts of the reviewers. It is appreciated by the reviewers and it is serves as a signal of a job well done and completed.

Potential Problems

A "no show" presents the most awkward situation. Occasionally students forget the date of their review or feel they are ill prepared to present the review. Students need to be reminded that the review is an assignment which students must complete in order to pass the course in spite of the fact that they do not receive a grade.

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The Emphasis is always on the material on the board not the student

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If students are scared it is best to talk to them quietly in private shortly before the review takes place. "It's alright to be nervous. Just know for certain that no one is going to shoot you down, no matter what you do." The instructor may also join the reviewer and involve the student in a discussion about the material. Focusing on the material generally reduces a student's nervousness. While it is necessary to use the precise vocabulary of the discipline, the tone of voice and attitude of the instructor needs to remains very relaxed as if talking about last night's movie or today's lunch.

The emphasis is always on the material on the board, not on the student. It is the accuracy, the structure, the completeness of the material that is discussed, not the performance of the student.

In some rare instances the student is very poorly prepared. The students know it, the instructor knows it, the reviewer knows it. Unacknowledged the process becomes a farce. Again using value free language I make comments appropriate to the situation.

My general belief and attitude which I express to my students is that anyone can learn to give a complete, precise and well structured presentation. The secret is in the process or preparation.

After some initial apprehension and occasional confusion during the first two weeks of lectures, the reviews become an important part of the teaching-learning process.

SUMMARY OF THINGS TO DO

- Explain the function and process of the review in the course outline and during the first lectures.

- Have students select a date for their presentation by circulating a sheet with upcoming lecture dates.

- Through your attitude and in words provide a secure environment in which students present the review.

- Help students when they are nervous or lose their train of thought.

- Stop the review when errors occur. Correct the problem, not the student.

- Concentrate on the material not the student.

- Be honest, be kind, Applaud at the end.

Enhancing Note-Taking Skills of Students

Overall, lecturers in colleges and universities pay little if any attention to the note-taking skills of their students. Whether or not a students can or does take notes is considered outside the domain of responsibilities of the instructor. Some institutions, it is true, offer special skills courses which often include note-taking skills. Occasionally students receive credit for taking a course in study skills but most often they do not.

While special courses teach a basic level of skills these skills need to be incorporated into the actual lectures. I understand that Princeton University integrates note-taking into the lecture process: the lecturer will stop periodically to give students an opportunity to check their notes.

My experience as a student and, later, as an instructor, has shown me without doubt that well organized and detailed notes are a prerequisite for a thorough understanding of the subject and for obtaining high grades. It is true, that a good textbook diminishes the importance of in-class notes. Even then, the process of taking notes is by itself a powerful catalyst in the learning process.

The Advantages of Note-taking

Keeping an accurate and structured record of the lectures benefits students in a number of ways:

First of all, the student participates actively in the learning process. Rather than sitting back and listening passively, often daydreaming, a student must listen actively and attentively in order to record the material accurately.

Secondly, in the process of writing the material, a student is able to check his or her understanding of the material. This is important since students generally overestimate their ability to understand and retain the material.

Thirdly, by writing the information down the student employs the specialized terminology of the discipline in the appropriate context.

Fourthly, by organizing the information on paper, the structure of knowledge becomes more easily appearance. This is most important since many students tend to see a subject as an assortment of facts, rules, and theories. The visible structure helps the student to understand and integrate the information more readily and permanently.

Moreover, the ability to establish a visible structure becomes useful when the student writes an examination. Her writing will be better organized and more complete than without that structure. This is also of benefit to the instructor since marking a well organized answer is considerably easier than marking an answer without organisation.

Furthermore, in addition to the auditory sense (listening), a student taking notes also uses the kinaesthetic sense (writing) and the visual sense (seeing his own writing). The purposeful intent of taking accurate notes, combined with the use of the three senses, imprints the material more solidly in the student's mind.

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Taking accurate, well structured notes involves students more deeply in the material.

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In addition, the notes can become an important source of examples, of 'by the way' and 'that reminds me of' as well as the personal views of the instructor, and of questions and comments by other students.

Finally, notes are indispensable in studying for examinations. They give important clues as to the bias of the instructor and the relative importance of various parts of the curriculum.

Introducing Note-taking to Students

Several years ago, after I started to pay greater attention to the abilities of my students to learn, rather than my ability to teach, I noticed that the vast majority of first and second year students took few, if any notes. Most however, like well trained monkeys, copied exactly what I had written on the blackboard, no more no less.

After doing a number of experiments it became painfully obvious that nearly all students were unable to recall important concepts of a lecture accurately. As a result, I began to educate my students on the importance and desirability of taking accurate notes.

At first I simply stressed the fact that good notes would lead to good grades and that they needed to record details not contained in the text but required in the examination. Unfortunately in spite of repeated suggestions to record more information, students responded only marginally.

A closer examination of the notes that students were taking during a typical lecture revealed that they indeed lacked any meaningful note-taking skills. Their 'notes' consisted of a hyphen or dash at the beginning of each line followed by a few words.

For example:

- economics is about scarcity
- there is always scarcity
- we always want more
- human wants are unlimited
- resources are limited
- etc., etc.

Questioned about this method of note-taking students replied that they had used this system throughout high school. Needless to say, this methods of recording information was entirely unsatisfactory at the college or university level.

It became obvious that students required more than simple encouragement, they needed instruction in the basics of note-taking. These basics are described at the end of this section. Although they can be taught within approximately 20 minutes they form a solid foundation for recording information in most disciplines. Many students are using this method in other subjects and report significant increases in comprehension, ability to commit the material to memory, and of course, grades.

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Most students increase their efforts if they are later rewarded with marks.

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However, contrary to the widely held belief that people will adopt behaviours which are in their best interest, students were very reluctant to adopt this new system. Indeed, they basically continued writing notes in their old pattern. Established habits are sometimes difficult to break.

It is a well known fact that most students respond well if they are rewarded with marks. I thus decided to make note-taking an on-going assignment to be graded at the end of the term. As one would predict students changed their minds about and attitude towards note-taking at once. At present students record most - but not all - material discussed in the lectures. They still need to be reminded to "Write It Down" and they still omit to record questions or casual comments on matters peripherally related to the discipline.

To emphasize the importance of note-taking and to encourage students to record the maximum amount of material it is helpful to use the following process:

1. Acquaint students with the new system of note-taking only after the first or even second week of classes. This means that students have used their old style of taking notes for several lectures. Students cannot help but notice the significant difference between the two systems and are more inclined the adopt the new system.

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The quality of any assignment can be improved considerably through direct and personal feedback.

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2. After about four weeks have students exchange notebooks and discuss ways of improving their notes. This process, usually done in the seminars, takes about 15 minutes. The exchange is important for two reasons. Firstly, it emphasizes the importance of notes, and secondly, it leads to an improvement in note-taking skills.

3. If during a lecture students are only listening but not recording the information, encourage them by saying: "Write it down, write it down, it's economics!" This reminder although effective would not be necessary if the practice of note-taking were encouraged by all instructors. Unfortunately this is not the case at most colleges or universities.

4. Give direct and personal feedback to each students after about six or seven weeks. Evaluate the notes by glancing at them briefly and make suggestions for improvements. Alternately request that students bring their notebooks to your office for feedback.

5. Collect the students' note books approximately two weeks before the end of classes. Note books are heavy and not easily handled. To facilitate the process ask small groups of students to deliver their note books to your office at a specific hour and pick them up a day later. This process requires some organisation unless the office becomes overloaded with too many note books.

Concluding Remarks

The notes are generally well executed and are graded according to the customary standard of grading assignments or tests with first, second, pass, and failure or A, B, C, D, or F. Allocating 15 per cent of total term marks to note-taking appears to be give students the necessary incentives.

When grading notes look for structure, clarity, readability. Encourage individual styles as long as there is a considerable degree of visible organisation. Expect students to do well by giving feedback and reminders throughout the term. As a result most students succeed in writing precise, well organized notes by the end of the term. For a Sample of Student Lecture Notes see the Appendix on Page 91.

The following points should be stressed:

- Proper note-taking involves students actively in the learning process and significantly increases his/her ability to understand and integrate the material.

- Good note-taking skills requires consistent practice on part of the student and much encouragement on the part of the instructor.

- The skill of note-taking is transferrable to most other courses and useful throughout the professional lives of students.

INSTRUCTIONS FOR STUDENTS

A. General Comments

1. Begin each lecture with a **new page** and write the date in the upper right hand corner. Always number your pages.

2. Write only on **every second** line. This makes your notes more readable and allows you to correct your notes or add additional information.

3. Write only on the **right hand pages** of your loose leaf note book. Use the left hand page for additional information, for diagrams, or for summary comments.

4. **Draw your diagrams large**, on the top half of the page. Explain the diagram on the bottom half of the page. Alternately draw the diagram on the left hand page and describe it on the right hand page.

5. Do not try to save paper by squeezing large amounts of information into a small space. In order to produce a quality product sufficient inputs are required. I assure students who wish to save the forests by saving paper that the quantity of paper they use during a whole term is less than the paper contained in the weekend edition of a single small town newspaper.

B. Organisation and Structure

1. Use **headings** and **subheading** to indicate different topics, themes, points, or propositions.

2. **Underline**, **encircle**, or **use arrows** to indicate important concepts, terms, definitions. Use a coloured highlighter for additional emphasis.

3. **Number points** such as: 1., 2., 3., or a), b), c). For larger sections use A., B., C, or roman numerals I, II, and III.

4. **Use abbreviations** specific to the material. Use Ex. for example, Def. for definition, or Ms for money supply.

5. Always use the proper and exact terminology.

6. **Write down examples**, refer to previous pages, and **explain, explain, explain....**

7. **Don't worry about 'messy' notes**. Notes need not necessarily be tidy. Rather notes should be precise and well structured and aid you in understanding, committing to memory, and later, reproducing the subject matter.

After instructing the students on these fundamentals I show students examples of different techniques. The examples are shown on the overhead and/or actual notes done by previous students are circulated.

Instructions on note-taking, occasional feedback, and regular reminders during the lecture lead to improved and often dramatic changes in the way student view their notes and the purpose of the lecture.

SUMMARY OF THINGS TO DO

- Explain to students the advantages of taking accurate notes in the course outline and when introducing students to the basics in the second week of lectures.

- Assign a portion of the total marks to the assignment.

- Encourage students repeatedly in whatever way you feel comfortable to continue taking accurate, structured, and complete notes during the lecture.

- At least once during the term look briefly at students' notes and make suggestions for improvement. Similarly, take time to have students exchange their notes and suggest improvements to each other.

- Collect and grade the students' notes about two weeks before the end of the term. Collect only as many as you can comfortably evaluate until the next lecture.

- By taking these steps you will find a significant improvement in the attention paid by students in your lectures, as well as an increased ability of students to take accurate, well structured, and complete notes.

- Encourage students to use the same accuracy, type of structure, and completeness when writing their examination.

ACTIVE LEARNING CIRCLES

- A Technique for Student Involvement, Participation, and Feedback.

I developed the technique of Active Learning Circles (ALC) during the early 1980's in response to a deep sense of frustration about the degree of student involvement in my lectures and seminars. Standing in front of a class again after a year of sabbatical leave, I sensed vividly the lack of student interest and participation. Students had few questions, even fewer comments. Yet checks revealed that many, often the majority of students did not fully understand the material I presented.

Consequently I attempted to involve students more deeply in the learning process by asking for questions from students, asking questions of students, or posing problems to students, i.e., the whole class.

The major drawback of this conventional method of generating student participation is that only a very limited number of students (the 'good' students) respond. Generally, less than twenty percent of students participate. The remaining students are reluctant to get involved, being either too fearful or too ignorant to participate actively.

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In the conventional lecture only a handful of students participate actively.....

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So I began to experiment with a variety of approaches. Some of these were obvious failures. Others, such as feedback from small groups of students seemed to generate a much larger degree of student involvement and participation. I termed these small, ad hoc groups "buzz groups". Over the years my ability to manage group processes has improved and so has the effectiveness of these groups which are now commonly referred to in the literature as Active Learning Circles (ALCs).

ALCs are easily introduced in both lectures and seminars and are immensely powerful in generating student involvement, participation, and feedback. This relatively simple technique allows instructors to actively involve all students in the learning process. Generally well received by students ALCs can be used in large lectures of up to seventy-five students and in small seminars with as few as six students.

The next pages contain suggestions on the formation of ALCs, the setting of time limits, working with groups, and finally the many powerful advantages of using ALCs.

Forming ALCs

The concept of ALCs is best introduced in the very first lecture. With the help and direction of the instructor students are directed to form small groups first to get to know each other and later to discuss the particulars of the course outline concentrating on the logistics and general requirements of the course rather than the course content.

After students have been introduced to ALCs the technique can be used regularly during subsequent lectures. Rather than having only one student respond to a question while all other students sit in silence with most minds in neutral it is now feasible to phrase a question or pose a problem and immediately involve all students in the discussion. To assure maximum involvement groups need to be small with three or at most four students.

The choice of a three person ALC is based on an understanding of group dynamics. In a three-person group generally all students become involved: talking, explaining, debating with each other. In a four-person group one or maybe two students become passive listeners. The number of passive students increase as the size of the group increases.

If ALCs are used frequently during a lecture it is efficient to ask groups to select a secretary or spokesperson for the day. This reduces the time required when individual groups report their findings to the whole class. It is important to note that groups should be encouraged to report or speak to the class as a whole rather than to the instructor. This fosters an environment of inquiry and debate among students with the instructor acting as a facilitator.

Another viable and often very appropriate method of involving students is the "Pair and Share" technique. Rather than asking students to deliberate a question in groups of three or four, the instructor asks students to share their thoughts with their neighbour(s). This technique is quick and effective and involves all students.

Seating Arrangements

Seating arrangements are critical in establishing and fostering discussion among students. Students need to sit as close to each other as is comfortable either in the form of a triangle or a square (three person or four person group) with a minimum of props, i.e., tables between them. To achieve this it is often necessary to rearrange chairs and tables. Although this takes a few moments of lecture time, the enhanced communication is worth the effort. Left to themselves students have a tendency of keeping a considerable distance from each other thus reducing involvement and interaction. In a sense students must be given permission to sit close to each other so they can 'stick their heads together'.

Proper seating arrangements increase student interaction, reduce the noise level, and the time required for completion of the task.

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Students must be given permission - instructed - to sit close to each other

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Membership in Groups

Some groups form naturally others require help. After checking on the composition of the class I help students to form groups with different characteristics: male, female, mature, native, foreign, etc. With some exceptions I avoid homogeneous groups such as all female or all male groups or groups with only foreign students. Integration begins at the level of the group.

Left to themselves students tend to associate with their own kind. In one experiment I left the choice entirely to students. After three weeks all foreign students with a few mature students were sitting on one side of the room, all Canadian male and some female students on the other side of the room. After discussing this tendency with the class students voluntarily regrouped and integrated.

It is important to understand the crucial role of the instructor in the formation of groups. Students who in the past had only limited exposure to group work find it often difficult to form groups on their own initiative. In order to assure the proper configuration of groups and to save time the direction of the instructor is crucial.

Setting Time Limits

Setting time limits speeds up deliberations within groups. Having posed a question or problem to the class and having ascertained that the question has been clearly understood the instructor announces the time limit and give the go ahead signal. The usual time limit ranges between thirty second and three minutes although occasionally a longer time period may be appropriate. Time limits are crucial to encourage students to address the question without hesitation. Time limits create pressure to start immediately. If at the end of the time most groups are still actively involved in debating the problem the time can easily be extended. If the original time limit is set too generously students often drift into irrelevant topics (such as the latest hockey or football scores).

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Time limits are crucial to encourage students to start immediately.

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Working with Groups

How instructors work with groups depends to a large degree on their personal style of teaching and relating to students. Over the years I have developed a style that for me and my student is efficient as well as enjoyable.

When groups are deliberating I observe the interaction of groups and either help those that appear to be lost or those that request help. When the time limit has been reached I ask different groups to report to the class as a whole. After listening to the reports of several groups I decide on the next step in the learning process. Several options exist.

When all groups arrive at basically the same correct solution I may return to lecturing or, alternately, ask one or two groups how they arrived at the answer. When their response is satisfactory I remark on similar problems and continue with the lecture.

When groups arrive at different answers I ask individual groups to tell us (or, better, show on the blackboard) how they arrived at their conclusions. Frequently, students from different groups begin to discuss which solution is appropriate and why. I allow students to debate the issue on their level of understanding, and interfere only to correct errors which are crucial to the understanding of the issue.

When asking a group to report I make sure to mention the names of all members of the group ("Lea, Corinne, and Jonathan what can your group tell us?") or mention the name of at least one member of the group ("What can the group around Lea tell us?"). Most often the person chosen by the group will respond. If I find overall that the same students speak repeatedly for their groups, I requests that next time other students be given an opportunity to report for their group.

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In a learning situations all contributions have equal value.
Some lead to the correct solution, others don't.
That's all.

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Within the framework of any lecture I find it most important not to judge or evaluate the contributions offered by students. I do this by employing a value free language discussed previously. In my opinion all attempts at a solution are appropriate in a learning situation and are of equal value. Some lead to the correct answer, others will not. That's all.

If none of the groups are able to solve the problem, I determine the obstacle and/or emphasize certain crucial variables or approaches. I then encourage students to solve the problem now (try again) or I assign the problem as homework.
Occasionally some groups immediately arrive at the correct solution while others experience difficulties. Sometimes the latter ask for help. However, rather than helping them personally I direct them to confer with one of the groups that have already completed the problem. Or, better still, I request that those who are finished help those that are not.

Most of the request occur on the personal level: "Jonathan, would your group help Bev, Mike and Tasha?" In this, as many other instances. my goal is to encourage students to work cooperatively on solutions within their own group and between groups.

Students, as a group, possess among them sufficient resources to solve most problems. Unfortunately conventional teaching pays little attention to this important fact and assumes that the instructor is the appropriate source of information.

When a problem has several parts I assign roles to each student. I request that students designate members of their group as either A, B, or C. In the first part of the problem A explains the problem to B, in the second part B explains the problem to C, and in the final part C explains the problem to A. In this way all students play an active role in the discussion of the problem.

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Students as a group possess sufficient resources to solve most problems

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Group sessions - group work and class discussion - last between one and ten minutes. The time spent in these sessions is high-quality time with often intense active involvement of the vast majority of students.

Advantages of ALCs

The small group technique has many powerful advantages over the conventional method of lecturing.

Firstly, ALL students become actively involved in the process. This allows ALL students to make an immediate rough check on their understanding of the material presented. This is most desirable since students habitually overestimate their grasp of the material.

Secondly, students have a chance to talk to each other employing the language of the discipline. As future professionals students must be able to converse fluently in the proper terminology of the discipline. Yet very rarely are they able to do so since very rarely do they have an opportunity to practice that skill under conventional circumstances, where most students are loners cramming in solitude for the examinations.

Thirdly, students learn teamwork and cooperation. This is of utmost importance in today's world where, as a caption of a cartoon in the New Yorker Magazine explained, "there are no more great men, only great committees". Naturally, groups will also compete with each other to a certain degree. That type of competition is usually friendlier, more open, and better accepted than competition among individuals.

Fourthly, it is easier for students to be incorrect as a group than as individuals. Unfortunately most students have a very fragile self-image. They hate to be 'wrong' as individuals but feel less exposed when their group arrives at an incorrect conclusion. Thus groups provide a safe environment for discussion and feedback if the lecturer asks for feedback from the group rather than from an individual.

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Students learn team work and cooperation.... of great importance in todays world.

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In addition, groups of students are more likely to concentrate on the topic and the interaction among themselves than to consider and focus on 'what the teacher wants.' The latter tendency is quite common even among upper level students. Individual students often begin their comment by: "I don't know if this is what you want.....", rather than expressing freely their own ideas or conclusions.

Finally, small groups are enjoyable for both students and instructor. The slight trance into which both instructor and students fall during the lecture is broken. Students physically turn to each other (turn their bodies in their seats) and the lecturer momentarily interrupts his monologue; both get a break.

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Small group work is enjoyable for all, students and instructor.

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Problems with ALCs

From my experience there are basically three types of problems encountered with small groups.

The first difficulty arises when several students are absent or have dropped the course. In that cases the existing groups are incomplete and I assist students in forming new groups. The integration of the new groups may be slow, since students are also creatures of habit. For instance students may move reluctantly across the room to join an existing group. Experience and friendly relationship with students help to reduce this particular difficulty.

Groups which do not work well together because of personal characteristics do represent a problem that is more difficult to solve. One option is to reform this particular group which also implies splitting other groups. Another option is to help these students by actively participating or giving advice. A third option is to let students find their own solution. I have used all three approaches depending on the specific situation.

A third problem exists when students are physically removed from each other or sit in a configuration which makes group work more difficult. For example, students moving from the lecture situation into group work may remain seated in a row or they may sit at a less than optimal distance to each other.

I have found that the most efficient configuration for a group of three or four students exist when students are seated in a triangle or square pattern at a distance in which they literally can "stick their heads together". Whenever possible I encourage students to sit as close as possible in a triangle pattern. Since the tables and chairs are movable in most lecture rooms that is generally possible. If the tables are mounted to the floor I direct one or two students to turn around in their chair and face the other two students in the row behind them.

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The arrangement of tables and chairs is crucial in small group activity.

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While all these difficulties may occur at any time, I have, with more experience, found it easier and easier to meet these and other unusual situations. Since students enjoy working in small groups, they are generally most willing to cooperate when changes need to be implemented.

Additional Comments:

The use of ALCs make the lectures more interesting and lively. The lecture becomes an active, highly valuable learning experience. Instructors need to experiment with the small group technique according to the needs of the students, their own personal style, and the requirements of the particular discipline.

Active Learning Circles can be adapted to many situations, age groups or topics. With very few exceptions, students enjoy a situation in which they immediately can check and re-enforce their understanding of the material.

SUMMARY OF THINGS TO DO

The small group technique of Active Learning Circles can be used anytime to generate student feedback, involvement, or participation. It is rewarding for both, students and instructor.

- It is advantageous to introduce ALC's in the beginning of the term.

- Help students to form groups and seating arrangements.

- Make sure students understand the question or problem before the start of group activity.

- Announce a time limit to make group work more efficient.

- Use a value-free language and non-judgemental attitude when providing feedback

The goal of small group work is to involve all students in the learning process. The spirit of small group work is that of an inquiry. The attitude is that of pleasure.

Student Participation in Seminars

Seminars, because of their small size, present instructors with some very special opportunities:

- To get to know the characteristics and names of individual students.
- To have students work cooperatively to exchange ideas or solve problems.
- To act as a tutor or coach to individuals or groups.
- To introduce peripheral topics or deal with topics in greater depth.

These objectives can be achieved in a number of ways. Some instructors use seminars as problem solving sessions. Others allow and organize debates about specific issues in their field. The presentation of student papers with appropriate feedback from other students as well as the instructor is a technique preferred by a colleague of mine. Some instructors answer questions from students. This approach by itself, however, often turns the seminar into mini-lectures given by the instructor.

Seminars maybe voluntary or compulsory, given by the instructor or by upper level students. Each case will lead to a different kind of dynamic with widely different results in the amount of learning, seminar interaction, and the degree of active participation of students in the seminar process.

The Objectives of the Seminar

After many years of experimentation with a variety of methods I have opted for a process with a high degree of active student involvement in a safe environment within a well defined structure.

In organizing my seminars I intend to achieve the following objectives:

- To give all students the opportunity to debate an issue related to the field.
- To train student to be able to extract the essentials of an article or news item.
- To allow students to practice team work with and without instructor supervision.
- To hold a plenary session with debate and with feedback from the instructor.
- To assure that time spent in the seminars is high quality time.

To achieve these goals students are given specific assignments (mostly reading) before the seminar. They discuss the assignment in small unsupervised groups for the first twenty minutes of the seminars. The instructors rejoins the seminar for the remaining thirty minutes for additional debate, explanation, and feedback.

The same process can be employed when the instructor wishes to have students solve problems or discuss concepts or ideas previously explained in the lectures. In each case students should do some preparatory work before the seminars, work in small groups in the first half of the seminar and together with the instructor address and debate the issues, concepts, problems in the second half of the seminar.

The central idea of this process is to design a safe environment in which all students are actively involved and, using their own resources, learn cooperatively rather than competitively. This system allows students to gain confidence with the material in an atmosphere of trust and cooperation. The role of the instructor in the second half of the seminar is bring the various groups together, to facilitate further discussion and to provide feedback on the work accomplished.

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The central idea is to design an environment in which students feel free to express themselves.

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In the following pages the specifics of the organisation, the ground rules, the process, and the problems are discussed.

Organizing the Seminar

In the beginning of the first seminar students are divided into groups of three seated in a triangle pattern with an appropriate mix of gender, age, and nationality. What is deemed "appropriate" depends naturally on the situation as well as the preferences of instructor and students. The instructor explains the logistics of the seminars and allows students in each group to get acquainted. For example, I suggest to students to swap stories about their life during the summer holidays and relate their most memorable experience.

The majority of students have rarely worked in small group and possess only limited social skills. There is always a need for specific, detailed instruction about the content and goal of the group activity.

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Students need detailed, specific instructions about the content and goal of a group activity.

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The following instructions may be appropriate:

> During the next twenty minutes get to know the members of your group. The following topics may be helpful:
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> Your name, where you are from and why you are here.
>
> Your hobbies, the kind of music you like, and the kind of food you like to eat.

What kind of physical exercise did you do, do now, or would you like to do if you had the chance, money or time?

Why do you take this course and what are your job goals?

What kind of job did you have during the summer and are you working now?

What is your most memorable experience, enjoyable or not, of the last summer?

The instructor now leaves the room and after about fifteen to twenty minutes returns and joins the seminar as a facilitator. He asks each group to select one member to relate her most memorable experience to the whole seminar. Some very interesting and at times strange stories are told allowing students to get to know each other further by sharing these experiences.

I participate freely when these stories are told. I ask the occasional question, make comments, or relate incidents from my own life. Occasionally students ask me to relate some aspects of my life. If time permits I gladly oblige.

The free flowing participation of students and the casual comments of the instructor establish the general format and tenor of the seminars that follow: the task, the unsupervised group work, the easy going but also very specific discussion of the plenary session with contributions from students and the instructor.

To memorize the names of students pictures of each group of students are taken during the first seminar. These are developed within days and stapled on the 11 x 8½ pieces of paper. Students print their names on the lower part of the paper during the next seminar. It is now easy to memorize the names of individuals during the next two weeks at a time when students are engaged in group work.

Establishing Ground Rules

Generally students are required to read specific articles from magazines or journals. My students subscribe for ten weeks to the weekly magazine Macleans at a special rate. These arrangements are made en block directly with Macleans during the first week of classes.

Students must read specific articles prior to each weekly seminar. By highlighting important words or passages, students must show they have read the article and have immediate access to the significant points of the articles. Students determine what is significant.

If some students are not prepared, which is quite common in the beginning of the term, they are asked to leave and maybe go for a cup of coffee. They are obviously unprepared and are thus an impediment to the seminar process.

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Unprepared students impede learning of other students..... that is unacceptable.

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This procedure works extremely well. The news spreads very speedily among other students leading to a decisive change in attitude. Students are well prepared or do not attend. Since students are not allowed to be absent from the seminar more than once a term without a valid excuse, satisfactory preparation and attendance are the rule. It is important to point out that the instructor must always remain relaxed and show respect for his students. Even when asking students to leave I do so in a friendly manner and in a tone of slight regret. I make it clear that I hold no ill will towards students who are asked to leave. Rather, that the process of the seminar requires preparation of all students. Students accept that decision generally very graciously. No hard feelings on either side. The rules and the consequences of breaking the rules are now clearly understood.

The Seminar Process

In the beginning of each seminar students move immediately into teams, discuss the article(s), address themselves to a number of specific questions, or summarize the important aspects of the article. The instructor then leaves the room and does not return until after a specified time period usually fifteen to twenty minutes. During that period groups discuss the readings, extract the appropriate information or conclusions and write a summary on the black i.e., green board.

Returning at the prearranged time the instructor briefly looks at the summaries and begins a general discussion involving as many students as possible. The discussion lasts for the remainder of the hour, in which various points are clarified, conclusions are drawn, inferences made, questions raised and/or answered.

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Encourage students to reach their own conclusions and understand their own reasoning.....

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Occasionally groups are instructed to solve problems or teach previously discussed economic concepts to each other. Student A explains the first part to student B with student C as an observer and assistant. Then the roles are changed with student C explaining the second part of the problem to student A, etc.

Generally students are encouraged to reach their own conclusions. Occasionally it is appropriate for the instructor to join each group briefly: coaching, assisting, correcting.

In my experience students appear pleased when I join a group to help or to give feedback. They especially appreciate immediate feedback concerning language, terminology and errors. When giving feedback I make a special effort to avoid value judgements such as good, bad, wrong, right. Rather I use terms such as 'that's not correct', 'you can't say that','that does not make sense', and immediately suggest alternatives in a-matter-of-fact tone of voice. Naturally I sit with students rather than stand and "talk down" to them.

This type of seminar structure allows for considerable student interaction and participation. It promotes discussions among students and between students and the instructor. The structure is well defined, easily understood but also flexible. A variety of topics can be investigated and ideas tossed around in a non-judgemental atmosphere. This type of safe environment encourages students to express themselves freely.

To assure the continuity of groups seminar attendance is compulsory. All students must do their homework to be able to participate in the group and plenary discussions. Examinations contain questions on material discussed in the seminars. Students understand that seminars are a vital and important part of their education in the discipline.

The dynamics of the process and the different composition and biases of each team make each seminar very unique, alive, and interesting. Homemade cookies supplied by one or two students for each seminar make the sessions even more enjoyable.

Underlying my approach to seminars is the realization that an important part of learning involves the active participation and interaction of all students. To use seminars simply as mini lectures or solely as problem solving session means foregoing a most valuable opportunity to allow all students to participate actively and interact freely with each other while learning at the same time.

It needs to be emphasized that seminars are working sessions with clearly defined goals. The process of student involvement is designed to improve knowledge and understanding of the content. Students are expected to understand the material be and able to reproduce the main features of each topic or article. For example, they must be able to see clearly the relationship of the events discussed in Macleans with particular aspects of economic thinking.

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Seminars are working sessions with clearly defined goals.... they present high quality time.

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Potential Problems

An appropriate response to students who are not prepared for the seminar has already been discussed. A certain amount of tardiness may be tolerated but students must come to the seminars well prepared and willing to learn.

A further problem may arise when some groups fail to interact freely. In that case it is necessary to regroup some students.

Differences in student involvement do occur and students are expected to take a certain degree of responsibility for themselves and maybe even for other members of the group. I communicate these expectations to students at the relevant time.

A particular aspect of group work in seminars is the existence of a "critical mass" of students. Seminars with four or more groups appear to generate a higher amount of energy than smaller seminars. Students appear to be more alive, i.e., interact more freely and are more creative in their work. Personally I prefer to work with high energy seminars.

It should come as no surprise that compulsory attendance, insistence on preparation, and examination questions on seminar topics are crucial to assure that students provide a continuous high quality performance. The absence of any of these requisites tends to reduce sharply the standards of performance.

SUMMARY OF THINGS TO DO

- Acquaint students with the seminar process during the first seminar.
- Memorize the names of students.
- Assign readings a week before the seminar.
- In the beginning of each seminar:

  have students form groups,
  check their home work,
  assign topics to groups,
  leave the room.

- Upon returning:

  Focus on topic summaries,
  Initiate a general discussion,
  Involve all students

- Be clear about your goals

  Be aware of time (it flies)
  Be cheerful and enjoy yourself.

Writing Multiple Choice Tests

Multiple Choice Tests (MC tests) are a popular method of testing the understanding of students about a particular topic. They are easy to administer and easy to mark. Test banks of MC questions are often provided by the authors/publishers of the textbook used in the course.

Some students prefer MC tests over written examinations. Others hate them and get confused by the number of choices. Personally I believe that most subjects as well as life in general is more complex than indicated by MC tests. Thus I am restricting the use of MC test to two small tests during the term. These tests carry little weight and are basically designed to force students to study the textbook more regularly than they otherwise would.

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Professionals in the real world cannot afford to guess an answer. If they do it is at their own peril.

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However, rather than allowing students to guess at answers during the test and later to provide students with the answer key after the test, it is possible to allow students to become more actively involved in searching for the correct solution both, during and after the test. This can be accomplished in the following manner.

To Know When One Does No Know

Students are trained in a subject area or discipline but they are also trained to become professionals: lawyers, microbiologists, engineers. Professionals working in the real world cannot afford to guess. If they do it is at their own peril. An incorrect advice or report to clients carries negative consequences: loss of a customer, damage suits, or loss of a job.

Thus to allow or even to encourage students to guess and later to ignore a wrong answer without penalty is in conflict with good professional practice and conduct. Consequently I deduct half a point for incorrect answers. No marks are assigned for blanks, i.e, questions not answered.

This method of marking ensures that students have to involve themselves more deeply into each question. They must know what they know and recognize what they do not know. This implies a higher level of understanding and conforms more closely with the practices and experiences of the real world.

Cooperative Learning after the Test

Most instructors provide students with the correct answer either immediately after the test or discuss the test at a later date. In both cases the instructor informs students. However, students can also be given the opportunity to work cooperatively in finding the correct solution to the problems. The emphasis is shifted from teaching to learning. This can be achieved in the following manner:

At the beginning of the test students are instructed to mark their answers first on the sheets containing the questions and later to transfer their answers to a special answer sheet to be handed in. The answer sheet is collected by the instructor after thirty minutes of a fifty minute test period.

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Immediately after the test students are eager to find the correct answers.

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Students are then instructed to form groups of three or four students and cooperatively compare their answers and determine the correct answers to the question. At this point the energy level of students is very high and they are eager to discuss their solutions with the solutions of other students.

The instructor limits her involvement by helping only those groups who are at a loss or cannot agree upon the answer to a specific question. The important point here is to let students do the learning, let students do the work. Rather then seeking help from the instructor groups are also encouraged to compare their solutions with the solutions of other groups. They may also use the textbook or their notes.

An alternative method is to ask students as before to form groups and attempt to find as a group the correct answer. This answer is then transferred to a second group answer sheet which is handed in and graded by the instructor. Additional marks are given to all members of the group using the same grading procedures as before.

The latter approach combines cooperation with competition. By cooperating students compete for higher marks. It does however change the nature of the whole exercise. Depending on the number of marks at stake students may become more interested in marks than in the process of learning from each other. Rather than discussing the problem they may be inclined to use majority rule to determine the 'correct' answer. In any case it is advisable to instruct students not to find the correct answer by a majority vote.

In a recent experiment with three different sections of students, when allowed to work in groups after they had handed in their individual answers, improved their scores by an average of slightly more than 5 points.

The Reaction of Students

Although students do not cherish the idea of losing half a mark for a an incorrect answer, they, although sometimes grudgingly, accept the rationale behind that method. They definitely enjoy working in groups immediately following the test to determine the correct solutions. In a very real sense they are rewriting the test through a cooperative effort, marking their own test and taking responsibility for their mistakes.

Although I help groups of students to arrive at the correct answer by explaining aspects of the problem or by providing additional facts, in the case of MC test I often refuse to provide the correct answer even if asked to do so.

I do this in an attempt to wean students from the authority of the instructor. Some students become very upset when an instructor refuses to provide the authoritative, definitive answer. Over the years they have become very dependent on the instructor and have little trust in their own ability to find the correct solution.

The vast majority of instructors see it as one of their duties to provide students with answers. Here I beg to differ: surely one of the goals of education must be to encourage students to use the acquired knowledge with confidence, and to trust their ability to find the correct solution.

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One of the goals of education must be to wean students from the authority of the instructor.

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SUMMARY OF THINGS TO DO

- Explain to students why incorrect answers are penalized well before the date of test.
- Inform students about the time frame and the number of questions on the test.
- Hand out the test and a separate answer sheet.
- Collect answer sheets and have students form groups to find the correct answer.
- Mingle among groups to help students arrive at the correct solution.

Writing Essays/Papers*

The General Process

The process of writing papers or essays consists of several steps, many of which involve group work or, at least the input of other students. The focus is on **learning** to write essays either by actively writing or by commenting on or correcting other papers. Students learn a lot through personal interaction, especially when all are involved in the same activity. Most **students learn by doing** rather than by **listen to a lecture**, especially when the learning involves a highly complex cognitive activity such as writing a term paper. No hockey player learns the game by reading the rule book; similarly, no student learns to write essays by studying grammar or by listening a prof tell her or him how to write a paper.

The general process of writing a paper may include these steps:

A. The Proposal. After receiving instructions about the process and the scope of the paper, each student writes a proposal which is handed to the instructor for comments and approval.

*I would like to acknowledge the help and advice received from my colleague Prof. **Henry Hubert** of the English Department. Since my students generally do not write term papers Prof. Hubert's comments and suggestions for this section have been invalueable.

B. The First Full Draft. Each student reads the paper to a group of other students who comment on the paper. The feedback is noted without discussion.

C. The Revised Draft. The revised draft receives written feedback in the form of written comments and corrections from at least two other students.

D. The Final Draft. Students write their final draft and an evaluation of their learning from the whole process.

Proposal, all drafts, and evaluation are presented to the instructor for final evaluation. The evaluation may concentrate only on the final draft or may include other parts of the process. The various part of the process can now be described in greater detail.

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The emphasis is on learning to write rather than on writing to be evaluated.

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The Proposal

1. The instructor gives specific instructions about the topic or choice of topics as well as about source material: where to find it, the type acceptable, and the minimum number of references required. She also discusses the required length, structure, and depth of the essay/paper.

2. In addition, the instructor circulates examples of comparable proposals and essays done previously by students. This gives students a reference point and an idea of the standards expected by the instructor.

3. The instructions are either handed to the student and discussed by the instructor or they are developed in class with students taking accurate and precise notes. These instructions could form the first part of the overall work to be handed in.

4. Students are now given a week or two to source the essay and prepare a proposal of about two pages. The appendix includes the various sources the student wishes to use including a short description of relevant material from each source.

5. Some proposals might include the thesis that is to be proven; some might include the main argument and supporting evidence; others might include an analysis of the difficulties of writing such a paper (especially a research paper) with a discussion of how those difficulties will be met. In any case, the student must know exactly what the proposal is to contain.

6. If the proposal involves a research paper, this segment of the assignment might include a review of how the research will be conducted: interview, field work of some kind, library research? To ensure that the project is feasible, especially if library research is involved, the proposal might require an initial bibliography of the sources.

7. The instructor collects and reads the proposals, makes suggestions for improvement or alternately rejects the proposal. It is important that students whose proposal have been rejected have a few days to hand in a second proposal. After the proposal has been accepted students prepare the first full draft of their essay.

First Full Draft

The instructor helps students to form groups consisting of three or four students. Each student in turn reads her essay to the group. At the end of each reading each students in the group make comments and/or suggestions. There is no discussion among the students. The reader makes detailed notes of the comments. Students take these comments into consideration when writing the Revised Draft.

This exercise needs to done in class. The instructor mingles among the groups helping and suggesting changes in the way students relate to each other within the group. Generally the instructor does not comment on individual papers, only on the process. After receiving the feedback students prepare the revised draft of their essay.

Depending on the length of the draft, reading aloud to others might take a lot of time. Reading aloud to others gives the student a sense of authority and a sense of audience. However, the problem of time may be a strong deterrent to reading aloud in groups, especially if the papers are long.

For longer works than c. 600-750 words, students can read silently each others' work in groups of up to four, with the group then discussing each paper in turn after every group member has read the paper. There may be some overlap between suggestions for the first draft and the revised draft.

The Revised Draft

The same group of students meet again. This time at least two students read the paper of a third student. This exercise can be done outside of class. Each reader corrects the paper, makes comments, and suggests further improvements. All suggestions, comments, and corrections are made in writing on the margin.

Each reader uses a different colour of pen and signs the paper. After the readers have finished their task each student prepares the final draft of the paper/essay.

In addition to the final draft each students writes an evaluation of the process and the effect other students have had on his own learning and the overall development of the paper. This evaluation may include a self-evaluation of the student as a writer: strong and weak points, improvements required and a celebration of achievements.

Some instructors may object to the use of teamwork. Shouldn't each student be responsible for improving the paper on his/her own? Individual responsibility requires.....etc.

My reply is that the main focus in writing the essay, especially in the first two years of college, is on the learning experience, not the evaluation of individuals. Students are being taught how to write essays/papers. In this part of the process all students are learning, both as writers and as proof readers.

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The main focus in writing papers or essays is on the learning experience not the evaluation of the student.

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Because of our focus on evaluation of individuals we neglect to give students the opportunity and responsibility to teach and learn from each other. We treat them as children who are dependent on our expertise and judgment. And we are surprised that so few learn so little.

Final Draft

Students hand in the preliminary instructions, the proposal, the first draft, the revised draft, the final draft, and the self-evaluation. Each part is separated by a coloured, blank, sheet of paper all bound in a clean lose-leaf folder.

The message of this arrangement is clear: essay writing is a process in which all steps are important. Students can cooperate with each other and, by doing so, learn from each other.

It is now the instructor's turn to evaluate the package. She may concentrate on the final draft or comment on other sections of the process as well. This may prove useful if students encounter difficulties in a specific section and need training in that particular area.

The grading of the final draft should be relatively easy. As a result of several revisions and the input of the readers the essays should conform to relatively high standards.

Here the emphasis of writing an essay has been on the whole process. Taking this into account an instructor may select to give marks not only for the final draft but for other sections as well. This procedure would encourage students to spend more time and effort on other sections of the complete process.

A possible grade distribution may include the following:

Proposal	10%
First Draft	20%
Revised Draft	5%
Final Draft	60%
Evaluation	5%
TOTAL	100%

SUMMARY OF THINGS TO DO

- Be clear about the process students ought to follow in writing the paper.
- Design a timetable and clearly communicate the process and time constraints to the students.
- Be ready to help students at each stage of the process.
- Insist that students execute all steps in a satisfactory manner on time.

The Midterm Examination

The preparation for and writing of examinations is a skill which can be learned through precise information and preparation. Contrary to conventional wisdom these factors are largely under the control of the instructor. In the following pages a number of techniques are discussed which, when applied diligently, can significantly raise the overall performance of students. The techniques are initiated and directed by the instructor at various times in the course.

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Writing successful examinations is a skill acquired through information and preparation.

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Doing well in examinations involves a knowledge of content, of format, and of the specific expectations of the instructor with respect to detail, accuracy and completeness. This knowledge can be available to every students: it can be explicitly stated, shown by example, and rehearsed. All students can be given the opportunity and training to do well.

The training of students to write examinations well involves any one or all of the following techniques:

* **The Skill of Taking Notes**
* **Review Questions and Format of the Examination**
* **Forming Study Groups**
* **Communicating Standards**
* **Writing the Examination**
* **Debriefing: Learning from Others.**

All of these techniques lead to greater student involvement in the learning process. At the same time they train students in the knowledge and skills necessary when writing examinations.

The Skill of Taking Notes

The fundamentals of taking notes have been discussed previously. Briefly, they involve structure, clarity, precision, accuracy, appearance, and completeness. These, however, are also the fundamental skills required in the writing of examinations.

It is clear that training in note-taking enhances the students' ability to do well in examination. Encouraging or insisting that students take accurate, complete, and well structured notes during the lecture is one of the opportunities an instructor has to help his students to perform well. Instructors in their lectures generally place special emphasis on material which later appears on the examination. Thus, by taking proper notes, students are actually pre-writing parts of their examination.

The specifics of teaching students to take appropriate notes and ensuring that they indeed take proper notes have been discussed previously under the heading of "Enhancing the Note-Taking Skills of Students" and will not be repeated here.

However, I would like to emphasize that, in my experience, the skills and understanding that students gain by taking proper notes are crucial in their success in writing examinations.

Review Questions and General Format of Exam

Students are generally very nervous at the beginning of an examination and become easily confused. An unexpected question or an awkward phrase may blank their mind and lead to a poor performance. This situation can largely be avoided by providing students with a set of review questions.

Providing review questions allows students to focus more clearly on the material to be studied and prevents at least partially the usual guessing game about the content of the examination. Providing review questions is simply more efficient and potentially leads to improved performances of all students.

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During examinations students are nervous and become easily confused.

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Providing review questions can either be done at the end of each chapter, topic, or section, or it can be done just prior to the examination. The former methods allows students a greater degree of freedom with respect to time of study and is especially appreciated by those students who are well organized. They are able to study regularly throughout the term.

The extent of the review questions will vary among instructors and between courses. I provide my students with a very extensive list of questions which cover a very considerable amount of material.

Since students often have difficulty perceiving the degree of analysis associated with certain parts of the course, the review questions may be organized according to the degree or depth of analysis required. I found it useful to employ a three-fold division:

A. Definition of terms with examples (25 - 40)

B. Short descriptions of several paragraphs (15 - 25)

C. Descriptions or analysis of several pages (10 - 20).

The number in the brackets indicate the usual number of review questions in each category.

In addition, it is very helpful and efficient for student to indicate the number of questions and the degree of choice available on the examination. Since even with a solid preparation students will be better prepared in some parts than in others, I offer a limited number of choices such as:

A. Define <u>five</u> terms out of seven (part A),

B. Answer <u>two</u> questions out of three (part B),

C. Do <u>one</u> out of three (part C).

It is also helpful to suggest to students the time they may want to devote to each part of the examination and the maximum number of points available for each part.

Finally, in order to enhance the appearance of the examination and the ease by which it can be marked it is profitable to request that students write only on every second line of their examination booklet, only on the right hand pages, and to leave the left hand pages for diagrams or additional last minute comments.

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Study groups reduce mistakes and enhance the confidence of students.

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The Formation of Study Groups

Approximately a week to ten days before the day of the midterm exam I encourage and sometimes insist that students form study groups. The myth of the lone scholar who burns the midnight oil wrestling with age old question probably always has been a myth. Today successful people cooperate and work in teams. Cooperation reduces mistakes and enhances quality of performance.

Giving students an opportunity to form groups is most effectively done during class time since after class students disperse to attend other classes, catch the bus, etc. Since most students are unaccustomed to form ad hoc study groups, I assist students to find partners and to organize their first meeting. For example, I suggest that they need to write down the names and phone numbers of the other members of the group, the date and place of their meeting, and the kind of work they intend to do prior to and at their meeting.

Students, with few exceptions, respond favourably and find study groups enjoyable and productive. The use of study groups has, in my experience, several advantages:

In the first place, students learn from and teach each other content as well as approach. In the second place, by comparing their work with the work of others unfortunate errors such as misreading the question are avoided. Finally, students learn to work in teams, an ability very much in demand in the interdependent world of today.

Setting and Communicating Standards

Although most instructors agree in principle that standards have to be kept high, there are in fact significant differences between the standards set or applied by different instructors. Since instructors rarely communicate their expectations in a precise manner most students have only a vague understanding - often gained from previous students - about the expectations of a particular instructor.

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In order to do well a student must be familiar with the expectations of the instructor and standards of the course.

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It is, however, difficult to do well if one does not precisely know what is expected. Therefore it is most important that an instructor clarifies to students the standards of the course and, more specifically, his standards and expectations with respect to the examination.

While it maybe difficult to set and explain the precise standard of grading it is very possible to convey the general principles. With the help of an example from the review questions I develop three versions. A version that corresponds to a bare pass, a very acceptable version and version that could be called excellent. Using the same example I explain the importance of structure, precision and completeness as well as other variables such as the importance of terminology and diagrams.

Since high grades are extremely important for many students they follow the explanations with great interest and attempt to apply these principles on their examinations.

Writing the Midterm Examination

The training in note-taking, the review questions, the study groups and the thorough explanation of standards imply that students are generally well prepared for the examination.

Each student receives three examination booklets, one for each part of the examination. This arrangement in addition to double spacing and structuring simplifies marking considerably. Marking only one part at a time is also more efficient and leads to greater consistency in applying standards. Compared with papers written under the conventional system I have found these papers a pleasure to mark. They show a much higher level of understanding, structure, and completeness and are visually much easier to read.

****

During examinations students often make silly mistakes.
It is quite appropriate for the instructor to be helpful.

****

Since even with diligent preparation students are still apt to make silly mistakes, I allow my students to call on me if they are unsure about their approach or their answers. I will then help by briefly informing the student about the nature of her error, if any. Occasional I will suggest an alternate approach. Naturally students still have to provide the logical development of the question or problem.

It is also useful to remind students of certain general or specific requirements such as double spacing, time elapsed, or diagrams and data required. Using this kind of approach students have the feeling that the instructor is helpful and approachable even during the examination.

Debriefing: Learning from Others

A further methods of student involvement relates to reading the examination of other students after they have been written and graded. I have only recently introduced this method in one of my classes. The privacy of grades received is generally held sacrosanct. Some instructors go to great lengths to maintain the privacy of grades received by each student. Students themselves often are much more relaxed and frequently exchange their grade but do not read each others' papers.

In my opinion a student benefits considerably by reading the graded papers of other students. For example, students use very different approaches in writing a paper, answering a question, solving a problem. According to some feedback I have received students are very surprised at the diversity and validity of different approaches. In addition, students begin to understand what differentiates a very good from a mediocre from a poorly written examination.

The process of involving students can be handled this way: After handing out the midterm examinations at the beginning of a class students have several minutes in which to peruse their own papers. I then help students to form teams of three to four students making sure that each group contains papers with different levels of performance. Thus a student who has failed is able to read the paper of a student with average and another with above average performance. Students are fascinated with that particular exercise and study the papers of other students with great concentration.

A further elaboration of that exercise is to ask teams to discuss how a paper could be improved and to have students rewrite a particular part or a whole paper in a team effort. Under certain circumstances it might be possible to grade that paper and allocate marks to each member of the team.

A number of variations of that exercises would be possible. The important point is that students begin to develop an understanding of how to write and structure a satisfactory or an excellent paper using actual and very relevant examples. All members of the team will improve their ability to write an examination although they may improve by different degrees.

SUMMARY OF THINGS TO DO

- Ascertain that students take accurate, complete, and well structured notes.
- With the help of examples explain to students the standards expected on the examination.
- Provide students with review questions similar or identical to those on the examination.
- Explain to students the precise format of the examination and marks allocated to each part or question.
- Help students to form study groups.
- At the beginning of the examination instruct students on the precise format to be followed.
- Grade and return the examination as soon as possible.
- Give students time to peruse their own paper. Then form study groups and allow students to read each others' papers.

The Process of Final Examinations

Approximately twenty-five years ago when I attended the University of British Columbia three-hour final examinations were common in all courses. The examination usually covered eight months of instruction. Generally the professors were extremely secretive about the content and the structure of the examinations. "What do you think is going to be on the exam?" became a big guessing game on our part.

When we finally wrote the exam in a large room with hundreds of other students there was often insufficient time to complete the examination. Since the final examination weighted heavily in the calculation of the final grade we were under tremendous pressure and sweated profusely for three solid hours. At the time we viewed this process as a sign of high standards: only the toughest could survive.

Looking back at the experience after nearly three decades of teaching and setting examinations my perception has changed somewhat. Today I consider this method of writing final examination as an example of cruel and unusual punishment. Nevertheless, this approach to writing final exams is still rather common and thus accepted as normal.

Yet this method of examining students is entirely unnecessary. A number of changes in the preparation for and the writing of the final exam can greatly reduce the sweatshop atmosphere and stress that students experience and improve the structure, clarity, and completeness of their examination leading to greater achievement and improved grades. The changes suggested and discussed below are similar to those introduced for the midterm examination and thus will only be explained briefly. The reader may refer to the section on midterm examinations.

Here is a brief summary of the processes used:

* **The Skill of Taking Notes**
* **Review Questions**
* **The Format of the Examination**
* **Communicating Standards**
* **Forming Study Groups**
* **Writing the Examination**

The Skill of Taking Notes

By now students have had about three months of practice in improving their note-taking skills. They have received formative and summative feedback and are able in varying degrees to apply structure and achieve clarity, precision, and completeness in their notes. These skills will help them immensely in the preparation for and writing of the final examination.

The Review Questions

As in the case of the midterm exam students are supplied with review questions. The structure of the review corresponds closely to the format of the final exam. The questions are handed to students about ten days before the date of the final examination. The review contains questions on basically all aspects of the course: the lectures, the textbook, and the material discussed in the seminars. Particular emphasis is placed on issues discussed in depth or concepts which are central to the course.

Compared to the midterm examination, the review questions contain additional material dealing with issues debated in the seminars as well as questions on educational films or TV documentaries. Generally these topics had been discussed previously in detail by the students in Active Learning Circles with additional input from the instructor.

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The goal of any examination should be a zero failure rate.

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The Format of the Final Examination

Except for some additional sections the overall format of the final examination is identical to that of the midterm exam and contains the following parts:

A - definition of terms

B - short descriptions of several paragraphs

C - detailed analysis of several pages

D - a well structured "essay"

E - a well organized report written as a cooperative group effort

Section A, B, and C are identical to those written by students in the midterm examination. Section D deals with special topics from the seminars or is taken from educational films or TV documentaries. The term "essay" indicates to students that they may write in a style that allows for brief descriptions partially written in point form.

Section E requires a cooperative group effort during the examination. Because of time constraints neither section D nor section E were part of the midterm exam. Both section contain topics with which students are quite familiar since they had been discussed in detail by the students either in the lecture or, more likely, in the seminars.

I have used part E, which requires a cooperative group effort only once. Since I allowed students to form their own groups the groups tended to be too large, about five to eight students. About ten groups did their work in five different classrooms. The exercise lasted about 45 minutes, 15 minutes more than expected. The results were favourable.

The main difference between the midterm and the final examination is the duration of the examination. Because of the length of time available - usually three hours - instructors can be more creative. They can allow for breaks and/or apply different rules for different parts of the examination.

A variety of options exist. I have successfully experimented with an open book section and a section which required a cooperative effort (group work) on the part of students. In another instance I distributed the topics for the next section before the break and allowed students to discuss the topic(s) without the use of books or notes during the break in another classroom.

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The overriding objective of an examination is to have students achieve high standards.....

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It is obvious that a great number of choices are open to an innovative instructor. What to chose depends on the goals the instructor wishes to achieve. My objectives have been threefold:

To include questions on a wide variety of topics executed in different styles, to allow students to use group work in a setting that matters to each member of the group, and to make the examination itself an interesting experience to students.

The overriding objective of the examination is to have students achieve high standards of performance. Appropriate feedback from the instructor, intense preparation by students individually and in groups, and a well structured and well known examination process with sufficient time helps students to achieve these goals.

Forming Study Groups

I encourage students and sometimes insist that students form study groups. This is best done during the lecture when all students of the course are together. In addition it is useful to give students guidance by reminding them to consider the time, place and topics for the first meeting and assign responsibilities to each student in the group. Forming the groups is effortless since students have now had three months of experience in cooperative groupwork and understand the advantage of study groups.

I also encourage students to phone me at work or at home should they encounter difficulties in studying the material and require help. If requested by students I occasionally do give special group tutorials at the university or in any coffee shop in town. A small number of students take advantage of these tutorials which usually last for approximately one hour.

Communicating Standards

As a result of the midterm and other assignments students by now understand the standards of work expected in the course. However, if special topics are involved, it is desirable to communicate carefully the precise standards, detail, and completeness expected in the final examination.

Writing the Examination

Students are generally well prepared for the final examination. They have had experience in the midterm, studied the review questions, and met in study groups. They understand the general format of the examination and the importance of structure, clarity, precision, and completeness. Two additional techniques can help improve the performance of students during the final examination.

The first technique allows students to take a break during the examination. The second gives students additional time to collect, organize and clarify their thoughts.

Taking a Break. The original idea for a twenty minute break came to me when I observed the blank eyes and dazed countenance of students who had just finished writing a forty-five minutes multiple choice test and had to continue writing the exam for another two hours. It was obvious that many of the students were in a daze, and that this would lead to a less than optimal performance.

Thus I arranged for a break after the first part of the examination. During the break students have to leave the examination room and are encouraged to go for a walk, have a coffee, or just gossip. Once outside the examination room students can be heard dissipate much nervous energy and enter the examination room in a calmer and clearer state of mind.

The Rough Draft. When students re-enter the room they are given the topics for the last two or three sections and an especially marked exam booklet which can only be used for rough work. Students have now about twenty minutes in which they can gather ideas, clarify their thoughts, and build a structure for the second part of the examination.

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A rough draft helps students to clarify and organize their thoughts..... It also helps the instructor to understand and evaluate the final draft.

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When the majority of students have finished their rough work two additional booklets are given to each student, one for each remaining part of the examination. Students may however ask for additional booklets. Students are now ready to begin writing the final two parts of their examination.

During the examination I invite students to ask for help by raising their hand when they are uncertain about the material they have written or when their mind draws a blank. I tell students when their analysis or description is incorrect and will attempt to jump-start a blank mind. While some instructors may not agree with me, I am interested in having students achieve rather than fail by making silly mistakes.

When students hand in their booklets they put each section into a separate bundle. I evaluate each bundle in turn. As a result, the grading is more efficient and more consistent.

Student Acceptance

The vast majority of my students favour these arrangements. The students appear more relaxed and the papers show greater organisation, clarity, and precision. Students, at the end of the examination often feel a sense of achievement and of completion. It is a bonus for the instructor that the examinations are relatively easy to read and to evaluate. Examples of student papers are shown on Page 92 in the Appendix.

SUMMARY OF THINGS TO DO

- Make certain that students take accurate, detailed, complete, and well structured notes throughout the term.
- Present students with review questions about ten days before the final exam.
- Acquaint students with the format of the final examination.
- Communicate in detail the specific standards students are expected to achieve.
- Assist students in forming study groups.
- During the examination remain relaxed and help students in whichever way is appropriate.

APPENDICES

SAMPLE COURSE OUTLINE

University College of the Cariboo
Department of Economics & Finance
Fall Semester, 1995

Economics 190-03
Instructor: J.E. Peters
Office: FAA34
E-Mail: peter

PRINCIPLES OF MICROECONOMICS

Organization:

Lectures: Three one-hour lectures per week.
Seminars: One one-hour seminar per week.

Readings:

Lipsey, et. al., *Microeconomics*, 8th Can. Edition.
Study Guide for Microeconomics to accompany textbook.
Ten Editions of *Macleans*.
Handouts and your lecture notes.

Course Assessment:

Textbook Review	5%
2 Multiple Choice Tests	20%
Midterm	20%
Notebook	15%
Final Exam	40%
Total Marks	100%

General Guidelines:

Economics is a very interesting and, at times, challenging field. It plays a part in most of your daily activities. Attending this college, spending your income, watching the hockey game on T.V., looking for a job - all these activities have an economic component. Studying economics will enable you to understand better the world in which you live. The study of economics is powerful and interesting but it is also demanding in time and effort. You must expect to spend at least **two hours of study for every hour of lecture or seminar.** The structure of the course requires that you pursue your studies **regularly.** You will improve your understanding of economics **and your marks** if you read each chapter before it is discussed in the lecture.

Objectives:

The course is designed for university transfer students who wish to gain an understanding of the Canadian economic system. By taking the course, students will:

1. understand the significance of current news as reported on radio, television and in the newspapers;
2. gain a measure of professional competence and responsibility in their approach to economic issues.
3. become familiar with the assumption, variables, models, and theories in economics.

There are no pre-requisites for taking the course. The course carries full credits at the universities and is a prerequisite to the intermediate economics course (Economics 201/202).

General Principles:

In this course students often **work in teams, cooperate with partners,** and generally **help each other.**

Thus **every** student must first of all be **reliable:** to be on time, to come prepared, to do one's best.

Secondly, a student must be **responsible** (able to respond): to look after the needs of a partner as well as the needs of the group.

Lecture:

The lecture begins precisely on time. One or two students open the lecture by presenting a summary of the last lecture. The summary lecture achieves several goals:

1. Students presenting the lecture have an opportunity **to learn the material in depth** and to **speak about economics** in front of other students.
2. Students listening to the presentation **review the material** and are better prepared for the following lecture.
3. Give you **important feedback** on the structure, accuracy, and appearance of the presentation. This helps you to write better examinations with higher grades.

After the presentation I begin to lecture on the **central theme** of the material. You are welcome to ask questions during the lecture.

I invite you regularly to become actively involved in the lecture by forming buzzgroups, small discussion groups with three or four students. Each group or team participates by doing an exercise or solving a problem in a short time period. When you are finished I will ask each group to report to the class as a whole.

Seminar:

The seminar is less formal than the lecture. The small size of the seminar allows us to speak directly to each other. We discuss topics related to the lecture, the assignments, or the readings. During the first fifteen minutes **students work in teams** of three to four students each. Later the teams reports to the seminar as a whole.

I encourage you to participate freely in the discussions in the seminar. Please be aware that the final examination contains questions on topics discussed in the seminars worth 15 per cent of your total mark. **Regular attendance in the seminars is required in order to achieve credit for the course.**

Teamwork and Partnerships:

I encourage you to work and study in teams. The ability to work in teams is especially important in the world of business. You are also required to **form a partnership** with at least one other student. Your partner represents your interests when you are not present: take notes, collect handouts, and informs you about important dates.

Questions:

I welcome questions during the lecture and seminar. For me **all questions have a value. There are no dumb questions.** I encourage you to ask questions when you are uncertain, are lost, or want more information.

Note-taking:

Taking complete, accurate, well structured, and easily readable notes is important both in the lectures and seminars. Like driving a car, it is a valuable and necessary skill. This skill can be learned like any other skill: instruction, practice, and testing.

In the beginning of the term **I instruct you** in the fundamentals of competent note-taking. The notes are evaluated at the end of the term. Please consider note-taking as an ongoing assignment. Your task is to study your notes after every lecture and to fill in details, structure, and organization.

Readings:

There are several types of material you are asked to read during the term. They vary greatly in the degree of difficulty.

The **textbook** contains no doubt the most difficult material. You must realize that the text contains much economic theory in a condensed from. Studying the text will frequently require a couple of hours for just a few pages. Yet the textbook forms the foundation upon which your understanding of economics rests. Thus **study it carefully.**

The well known Canadian magazine **Macleans,** which you will receive for ten consecutive weeks, informs you about economic events in Canada and the world. The magazine is easy to read. The articles are informative and a great many deal with present economic problems and issues. Every week I will assign some articles for you to read. We often discuss these articles in the seminars.

Handouts from a variety of sources vary in degree of complexity. Some we will discuss in the seminars, others you will be asked to read only.

Assignments:

Frequently you are asked to do short assignments (homework). These assignments **must be completed on time.**

Examinations:

There are four examinations throughout the term, two multiple choice exams, the midterm and the final exam. The **multiple choice exams** last for thirty minutes each consisting of thirty questions. The **midterm** (one hour) and the **final examination** (three hours) consist of written work only. You must be able to describe and analyze economic phenomena clearly and accurately. It is important that you **use the exact terms and phrases used by economists** and **include all relevant aspects** of the problem or exercise.

Marks:

The grading procedures in this course follows the grading system established at Cariboo College for the Academic Division. The Cariboo College system is similar to that followed at most North American colleges and universities. It may profit you to study the **meaning** of the grades as shown on the next page. You will notice, for example, that a 'B' letter grade (65 to 75 percent) requires a "clearly **above average**" performance and requires generally a considerable amount of effort on the part of the student. A complete description of the grading system at Cariboo College follows on the next page.

*Note that **I do not grade on a curve**. Thus it is quite possible for a large percentage of students to obtain high grades (or low grades). It follows that you need not compete against each other. Thus teamwork, helping others, etc., will improve your performance **and** your standing.

This concludes the explanation of the logistics of this course. The economics topics discussed in this course are listed on the following pages. They may be changed slightly during the term. I hope you will enjoy the course. If you have any questions or problems, please do not hesitate to see me after the lectures or seminars, or during my office hours. I will be pleased to assist you.

You are never given a wish
without also being given the power
to make it come true.
You may have to work for it,
however.

Richard Bach, *Illusions*

CARIBOO COLLEGE
THE LETTER GRAD SYSTEM: ACADEMIC DIVISION

The system of student evaluation is based on the following letter grades:

Letter Grade	Grade Point Value	Classes of Achievement
A+, A, A-	4	First Class
B+, B, B-	3	Second Class
C+, C	2	Pass
D	1	Lowest Pass Standing
F	0	Failure
W		Withdrawal from a Course

The following description and notes may help clarify the system which is in use within the Academic Division of the College.

A description of the letter grades is as follows:

A+, A, A-
90, 85, 80 — Excellent, Superior performance showing comprehensive understanding of subject matter in depth, initiative and fluency of expression. These grades are equivalent to first-class marks at the provincial universities.

B+, B, B-
75, 70, 65 — Good. Clearly above-average performance with knowledge of principles and facts generally complete, and with no serious deficiencies. These grades are equivalent to second-class marks at the provincial universities.

C+, C
60, 55 — Satisfactory. Basic understanding with knowledge of principles and facts at least adequate to communicate intelligently in the discipline, but with definite deficiencies. These grades are equivalent to clear pass marks at the provincial universities.

D
50 — Minimal pass for which standing is granted. A passing grade which indicates only marginal performance. In the instructor's opinion the student is unlikely to succeed in subsequent courses in the same subject. A student who obtains a "D" grade in a subject may be allowed to take the next course in that subject at Cariboo College only if it is a similar year level. Normally a "D" grade in a First Year course will not permit entry to a Second Year course in that subject.

F — Fail. Unsatisfactory performance with knowledge of principles and facts fragmentary; or **failure to complete course requirements.**

COURSE CONTENT

1. **Economics and Society**

   What is Economics?; Alternative Economic Systems; Aspects of a Modern Economy

2. **An Overview of the Market Economy**

   The Decision Makers; Markets and Economics; Microeconomics and Macroeconomics

3. **Demand, Supply, and Price**

   Demand; Supply; Determination of Price

4. **Elasticity**

   Price Elasticity of Demand; Other Demand Elasticities

5. **Supply and Demand in Action**

   Who Pays Sales Taxes?; Government-Controlled Prices; Rent Controls: A Case Study of Price Ceilings; The Problems or Agriculture

6. **The Role of the Firm**

   The Organization of Production; The Firm in Economic Theory; The Meaning and Significance of Profits

7. **Production and Cost in the Short Run**

   Choices Open to the Firm; Short-Run Choices and Short-Run Variations in Cost; The Long Run

8. **Competitive Markets**

   Market Structure and Firm Behaviour; Elements of the Theory of Perfect Competition; Short-Run Equilibrium; Long-Run Equilibrium; The Appeal of Perfect Competition

9. Monopoly

A Single-Price Monopolist; Cartels as Monopolies; A Multiprice Monopolist: Price Discrimination

10. Patterns of Imperfect Competition

The Structure of the Canadian Economy; Imperfectly Competitive Market Structures Monopolistic Competition; Oligopoly

11. Public Policy Toward Monopoly and Competition

Economic Efficiency; Canadian Public Policy Toward Monopoly

12. Takeovers, Mergers, and Foreign Direct Investment

Takeovers, Mergers, and Buyouts; Foreign Investment; The Goals of Firms

13. Benefits and Costs of Government Intervention

How Markets Coordinate; The Case for the Market System; The Case for Intervention; Government Intervention

14. Social and Environmental Regulation

The Economics of Pollution and Pollution Control; Regulations for Health and Safety Benefit-Cost Analysis of Social Regulation

15. Taxation and Public Expenditure (optional)

Taxation; Evaluating the Tax System; Public Expenditure; Evaluating the Role of Government

16. Canadian Social Policy (optional)

Canada's Social Programs in Perspective; An Outline of Selected Programs

ECONOMICS - IMPORTANT DATES

Multiple Choice Test #1	January 23
Midterm Exam	February 14
Mid-Semester Break	February 19-23
Multiple Choice Test #2	March 13
Review #1	
Review #2	
Final Exam	

Partner's Name: _____

Phone Number: _____

COMMITMENT

1. To attend all lectures and seminars.

2. To complete all assignments on time.

3. To participate actively in any group work.

4. To cooperate with my partner.

5. To seek help from my instructor whenever I have difficulties understanding the material.

6. To take accurate notes during the lectures and correct/study the notes after each lecture.

7. To be cheerful, polite and cooperative.

Signature: _____

EXAMPLE FOR STUDENTS

BOOK REVIEW

Department of Economics & Finance
University College of the Cariboo

Fall, 1995

Book Review of:

Lester C. Thurlow,
The Zero-Sum Society
(New York, N.Y.: Basic Books, Inc., 1980), 220 pages

Lester C. Thurlow is a Professor of Management and Economics at the Massachusetts Institute of Technology and the author of, among others, Poverty and Discrimination (1969), Investment in Human Capital (1970), and Generating Inequality (Basic Books, 1975).

Summary of Content

The subtitle of the Zero-Sum Society is Distribution and the Possibilities for Economic Change. It states the central thesis of the book: a change in economic conditions is only possible if we are able to accept changes in the income distribution.

All present economic problems such as inflation, energy shortages, persistent poverty and others do have an economic solution. The solution does, however, involve changes in the structure of taxation and thus creates winners and losers. The income of some groups in society is reduced, that of others increased. As a result of the political and legal structure in our society potential losers are able to delay the required changes and frequently veto any solution to the problem.

The book discusses in detail the most important problems of today, inflation, slow economic growth and environmental problems. In each case the author explains the changes required to overcome the problems. In addition, the author shows what groups in society would benefit and which groups would suffer from the proposed changes.

In Chapter 1 the author gives an overview of the problems of the American economy. In Chapter 2 to 6 he discusses individual problems. Chapter 7 is devoted to a discussions of the income distribution in the U.S. In Chapter 8 Professor Thurlow proposes some specific solutions to the specific problems of the U.S. economy.

Evaluation

The book is fluently written: each topic is well explained and can easily be understood by most second year or third year college students. In order to comprehend the ideas thoroughly a basic knowledge or economics or a further discussion of the topic within a group would be advantageous. The book has a few tables, no charts. The print is large and easily readable.

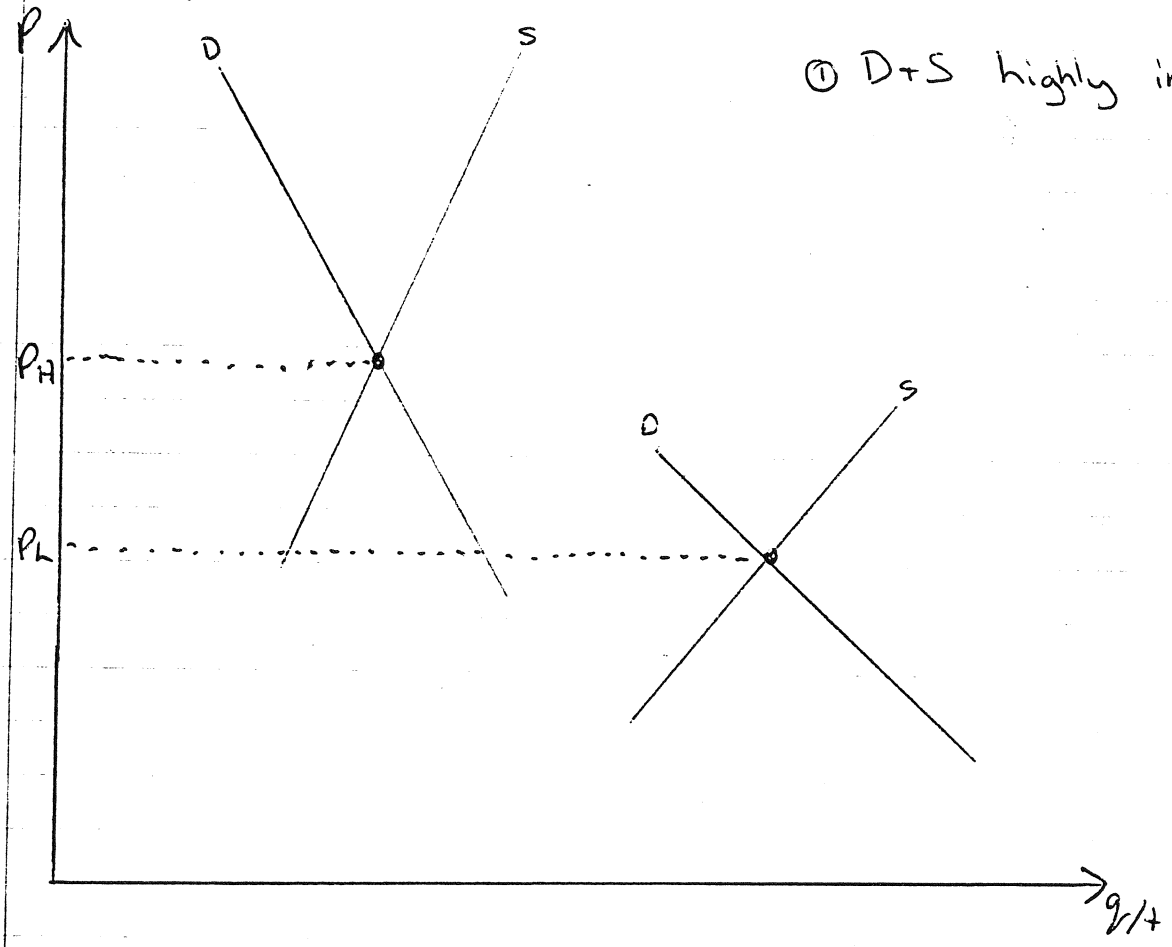
Books on current economic problems are certainly not new. This book does, however, break new ground by relating the difficulty of solving the problems to the difficulty of changing the income distribution of society. I, personally, would recommend the book highly to anyone interested in the economic problems today.

SAMPLE OF

STUDENT LECTURE NOTES

Oct 15

I. Agricultural Products



① D+S highly inelastic

a. D -> because increase population

b. S -> mechanization, chemicals, selective breeding
(i) income of farmers ↓; other peoples income ↑

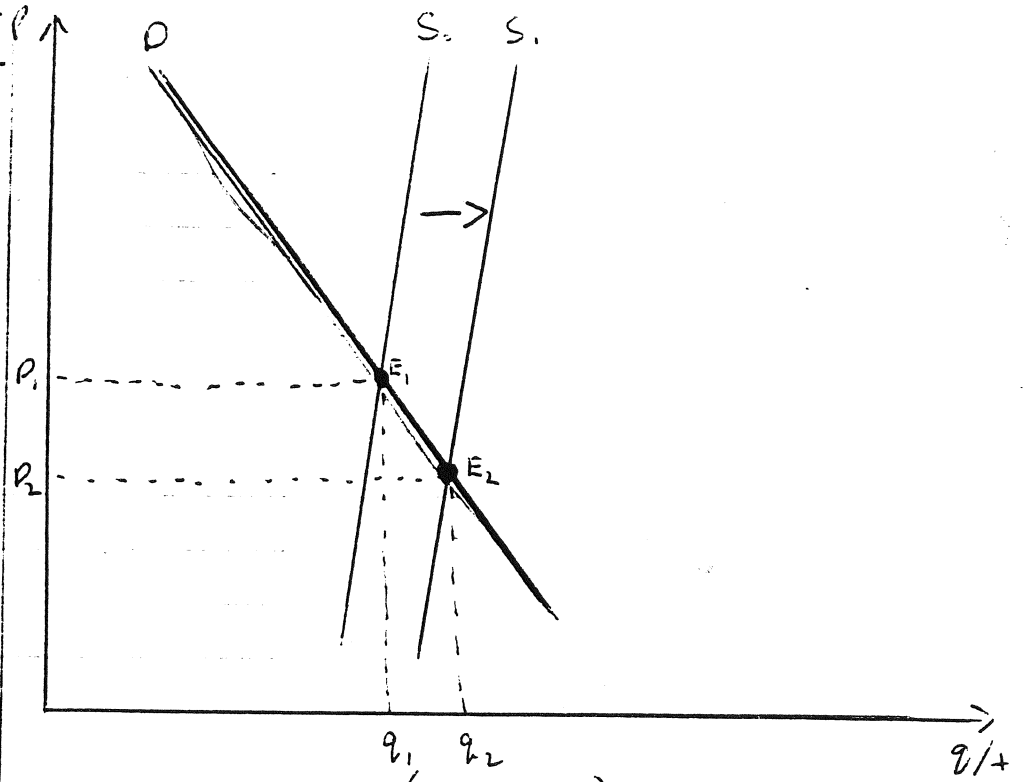
① argument -> farmers should be subsidized (income added)

② fluctuation (boom, bust periods)
(i) exist because of bumpercrops

③ political powers
(i) farmers voting power

Oct 15 Con't

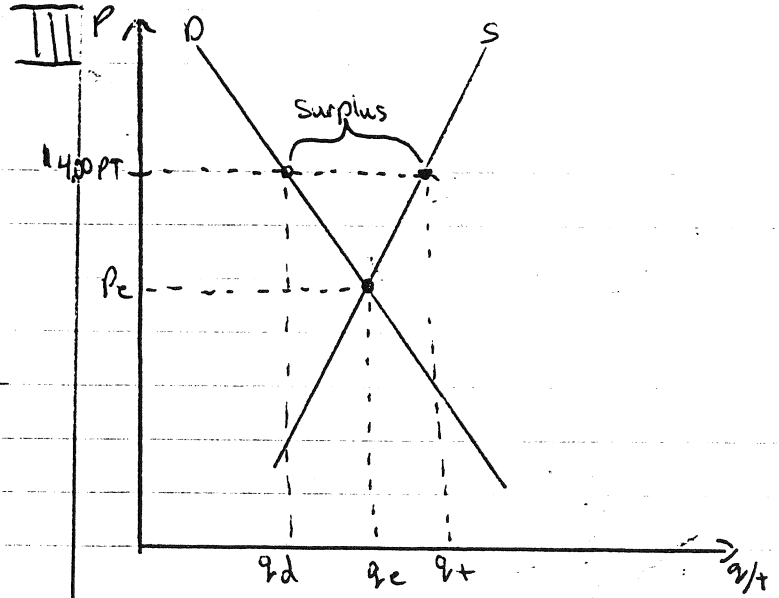
II



(i) $S_0 \rightarrow S_1$ (bumpercrop)

(ii) Total revenue $E_2 \rightarrow$ Jr E_1 ; TR ↓ at new $E_1 \rightarrow E_2$

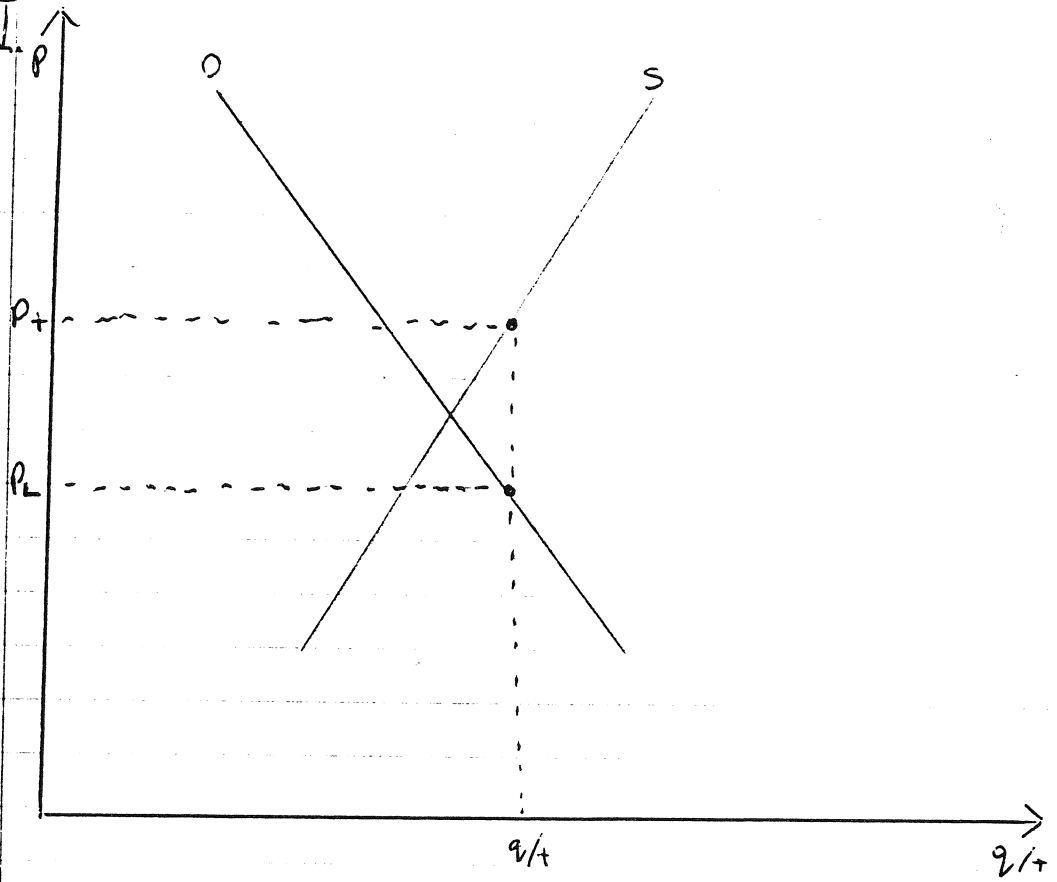
III



① PT = target price ; qt = target quantity
② qt - qd = surplus
③ distorts incentive system in recipient country (if give away surplus)
④ gov't purchases surplus → cost would (qt - qd) × Pt = cost

Qst 15 Con't

III.



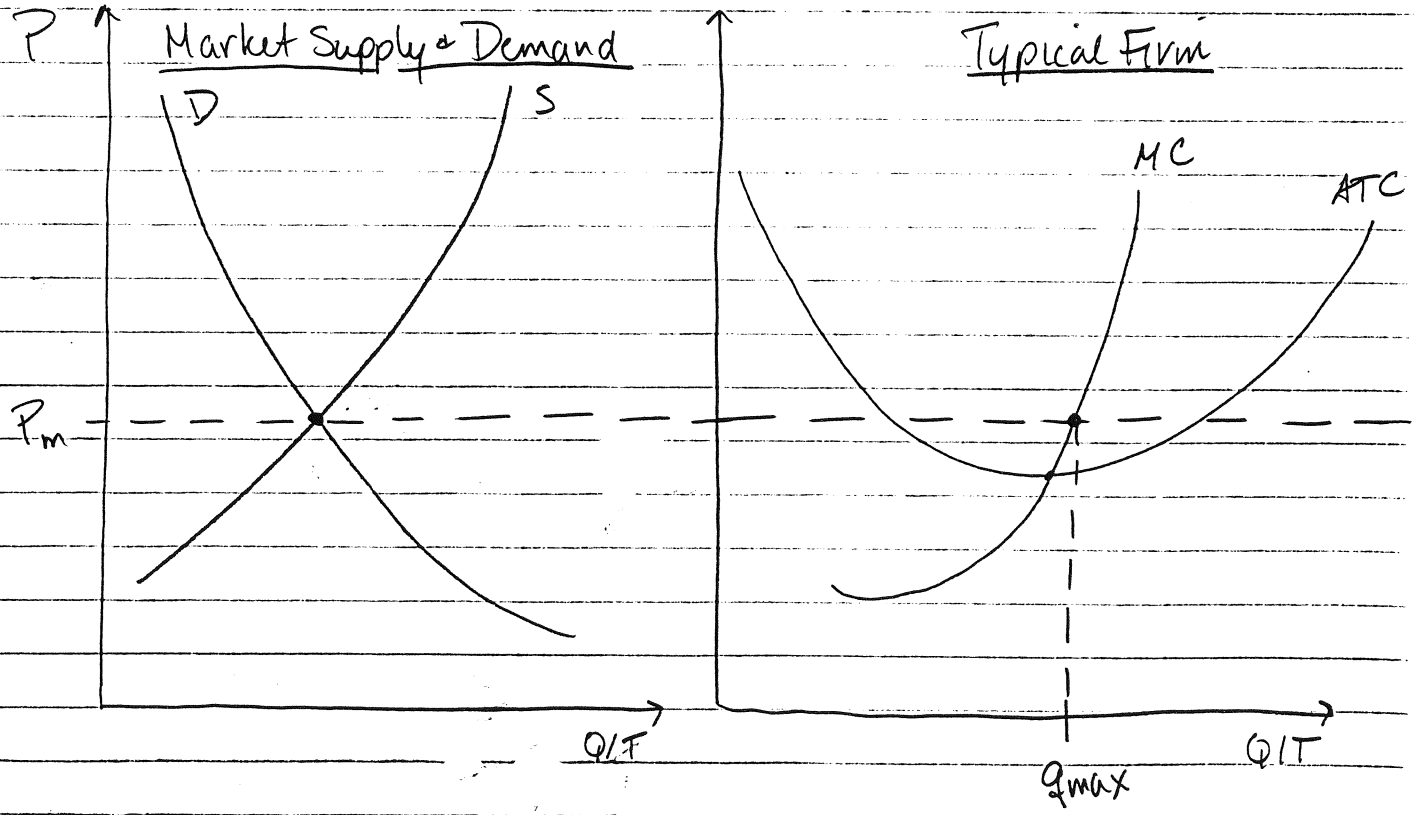
(i) subsidy is = $P_T - P_L$

(ii) government will make up difference if surplus sold below P_T

Lecture 24 Mar. 20/95

Perfect Competition:

- many firms with easy entry & exit
- perfect knowledge between firms
- homogeneous products produced by firm
- firms are price takers
- P_m is the price the firm is able to sell their product.

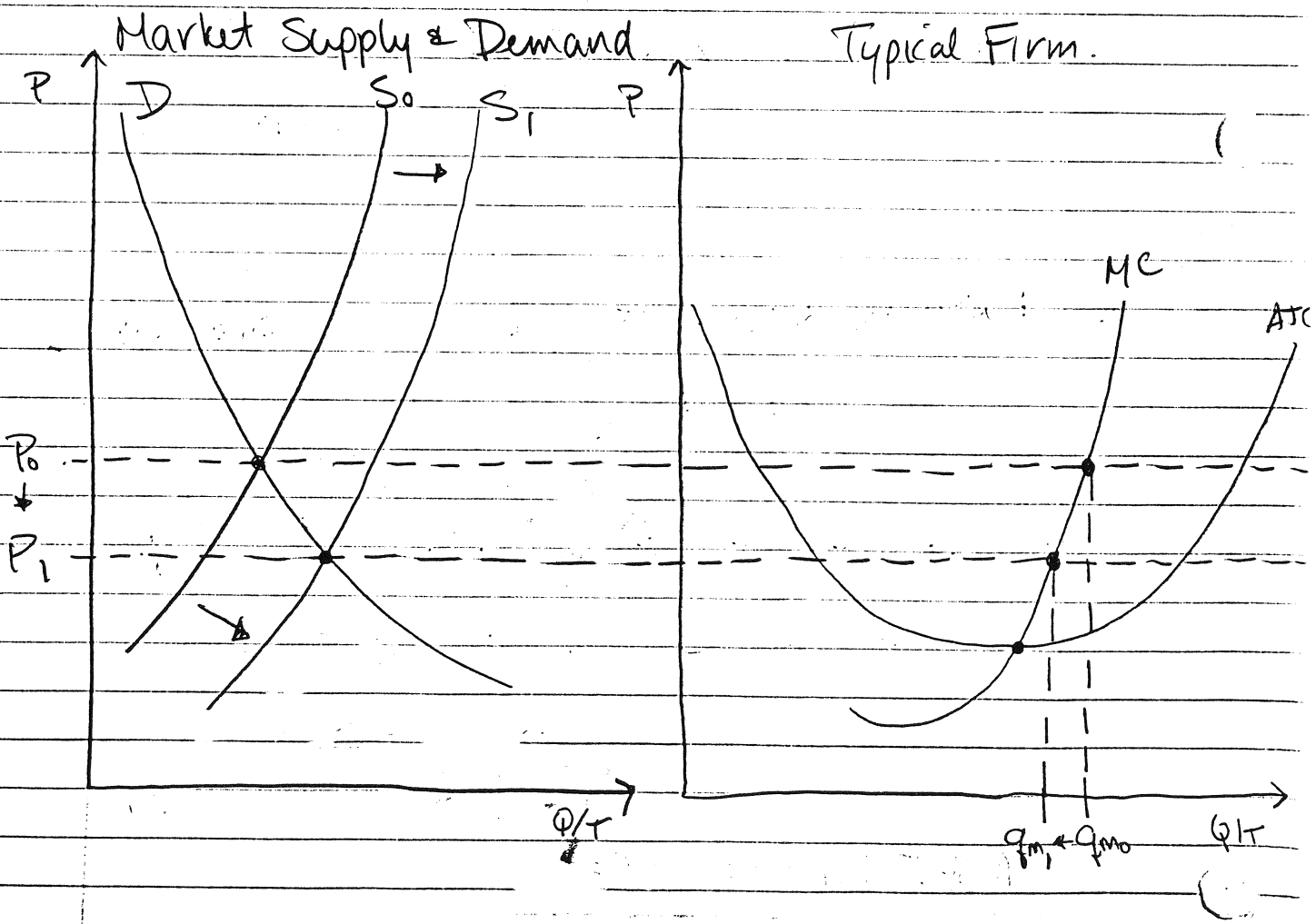


PROFIT MAX ⇒ MC = MR

- What would happen if new firms enter the market?

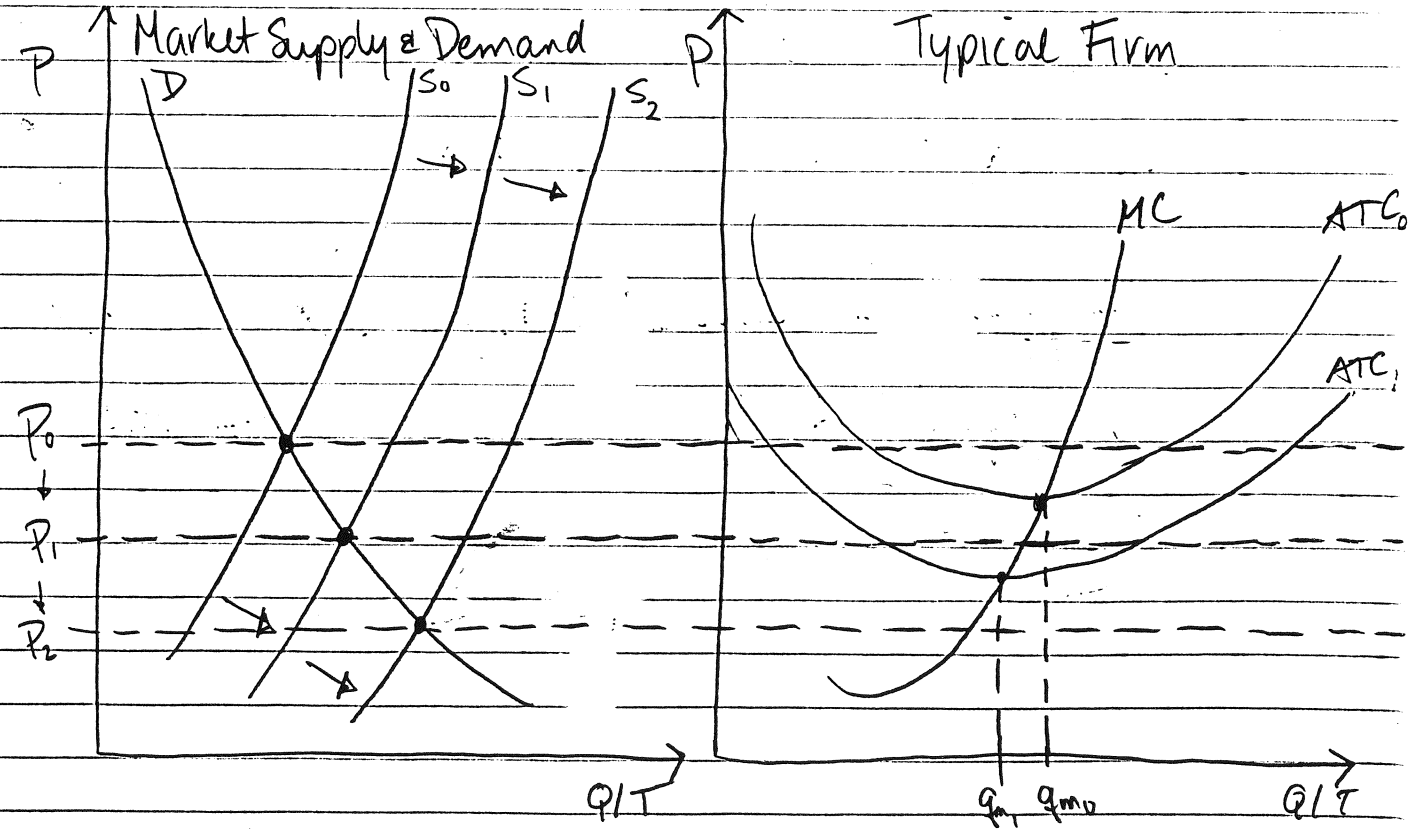
In <u>perfect competition</u>, new firms that enter the market would cause some market changes:

↓ PRICE, ↓ REVENUE, ↓ QUANTITY PRODUCED, ↓ MAX PROFITS



• What would happen if there was a change in technology, allowing the firm to produce more product?

Change in technology will lower the ATC curve since the firm is able to produce more product at a lower cost. Thus, supply of the product will ↑ which will lower the price. As price ↓, some firms will leave the market.



Hilroy

This is also known as "Resources are Released." This would include the businessmen & land.

Long-run Equilibrium

1. no profits (zero or small) · all factors paid for.
2. production at min. average total cost

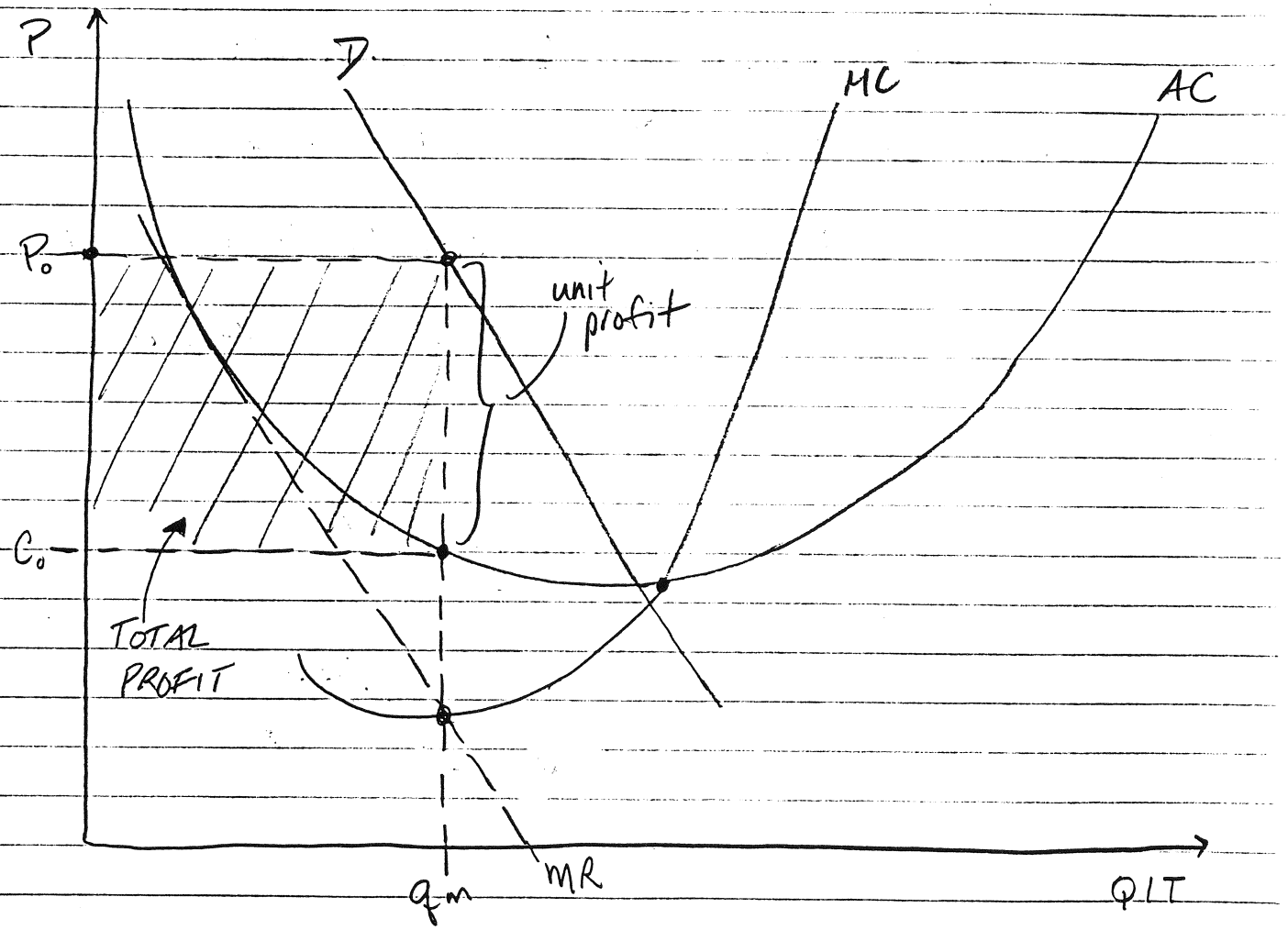
∴ in perfect competition, in the long run firms will produce at the break even point. Thus profits don't exist or are very small.

The perfect competition model is:

1. efficient – operates at min ATC.
2. have no power.

Monopoly:

- one firm
- firm's demand curve is the market demand curve.



How much would this firm have to produce in order to maximize profits? q_m

PROFIT MAX ⇒ MC = MR

These profits will continue since no other firm can enter the market.

1. Monopolists can earn profits over a long period of time since:

Barriers to Entry exist:

1. patent (medical drug)
2. government regulation (pub)
3. control of raw materials
4. advertising
5. natural monopoly. ie. water, electricity