

# IMPORTANT TIPS ON HOW TO SUCCEED

## A Guide to More Effective Study

Mr Jim Akers and Dr Phil Dobney, two emeritus lecturers, put together the following ideas in an effort to assist new students with what appear to be common problems among school leavers, namely their inability to organise their time and to make full use of lectures, tutorials and practicals in gaining new knowledge and skills.

Our records over a period of 15 years indicate that many students who did well at senior school do not necessarily succeed at tertiary education. We believe that attention to personal organisation and study habits can increase the pass rate considerably. We would advise students who are coming into the University for the first time to take this booklet seriously, to heed its advice and to make full use of the advisory services available.

### 1 Introduction

The aim of this booklet is to help you find the most effective techniques of study at tertiary level. Perhaps you have already adopted a method best suited to your particular temperament and will know the effectiveness of your own style from past success or failure. However, the experience of most lecturers indicates a need to establish a pattern of approach to study which has specific relation to a tertiary institution, and which may differ considerably from past secondary experience.

Your Associate Head of Discipline will help you with any problems you are having and give you relevant advice if you need specialist help from people in other sections of the University.

You will still need some good luck - and we hope that it is there when you need it. But you will need less of that elusive stuff if you are well-organised and prepared to work.

### 2 Some General Comments

Educational psychologists agree that there is no one 'best' way of learning. There are many ways of digesting subject material, and the ways are as numerous as the students who attempt the digestion. What may be appropriate and ideally suitable for you as a learning process, may be completely unacceptable to your colleague who learns best in a different sort of way. Despite varying opinions, there is some common ground on which most educationalists agree:

#### 2.1 *Readiness for Learning*

Completion of high school is considered by some people to mean readiness for tertiary study. Academically this is probably so. Even if you lack some of the 'recommended' senior subject background, you should still be able to succeed. However, readiness also includes intellectual maturity. When you are 'ready' to make sacrifices of today's ease for tomorrow's goals, to work to deadlines, to cooperate in your own education instead of waiting to be taught, then you are 'ready' for study at the University of Southern Queensland.

## *2.2 Aptitude*

Aptitude refers to the time taken to grasp a concept. We do not all enjoy the same aptitude for the same courses. But we can all pass the same courses given sufficient time in which to understand the material. Given sufficient time, there is no course in any program at this University which you cannot master if you are determined to succeed.

## *2.3 Motivation*

No learning of any consequence takes place when motivation is lacking. You can take a horse to water, but you cannot make him drink. The lecturer can help by trying to make the subject more 'interesting', but only you can make the important decision that a particular topic is worth the effort of learning it. It might help if you get into the habit of asking yourself 'so what?' Once you see the practical significance of the idea, it will be easier to find the ability to 'learn' it.

## *2.4 Practice*

Whilst some of your learning experience will come to you in a flash and you won't forget it, you will need to practice in order to promote learning. There are two main types of practice: massed practice, which means long sessions; and distributed practice, which means a succession of shorter practice periods with a rest or other activity in between. Research in these two areas indicates an overwhelming vote for distributed practice. Massed practice or sitting down and trying to digest a lot of material in one session tends to bring boredom and fatigue, which reduce attention and cause the practice to deteriorate into mere repetition. The length of time you can keep your attention directed to subject matter will depend on the extent of your motivation.

## *2.5 Retention*

Material which is meaningful to you will be remembered much better than material which is not. You should ask yourself that question 'so what?' at the end of a lecture or at any time in your reading, in order that you have a clear comprehension of what place the subject holds in the overall pattern. It is not good enough to 'think' you know, for when you come to apply the information in different areas you will fall down. Know, and know that you know, so that you can sit down and write confidently about the subject at any time. It will be up to you to make sure that the subject has meaning for you.

We quote a well known educationalist 'If the material is sufficiently meaningful (for you), there may be no forgetting whatsoever. An important governing principle, like the idea of conservation of energy, may so help us organise the rest of our ideas that it stays with us for life.' The extent, to which you set about organising your material into a pattern that makes sense to you, will be the extent of your success in this University.

## *2.6 Perseverance*

Our surveys have shown that the most common complaints of students are 'too many assignments too close together' and 'boring lectures and text books'. There may be some substance in these protests. Discuss the problem with your Head or Associate Head. However, it is true that in the University environment, **you are expected to work**. Perhaps,

up till now, you have found it easy to meet the requirements of your teachers and examiners. Now, real effort is necessary if you are to succeed.

If your goal is to graduate - and not just to enjoy the social life of University - you will need perseverance. Keep that goal in sight. When extra effort is called for, you will succeed if you keep at the task until it is done.

It is easy to withdraw. Just fill in the withdrawal form and that's it. It is a lot less easy to succeed. However, there is one thing that is absolutely certain -you will not succeed unless you are prepared to put in the extra effort when it is necessary - unless you persevere.

## *2.7 General*

The main objective of study in this University is to prepare you for a creatively useful role in Society. Our objective is not to send out a number of 'little libraries' qualified to regurgitate subject matter for which the degree presumably qualifies them; but to equip students with the capacity to think for themselves, act for themselves, and apply their understanding of principles to real life situations.

### **3 Note Taking**

Listen to a morning newscast tomorrow and see if you can remember the main points 12 hours later; you will probably find it difficult to recall much at all. Imagine listening to the news broadcast five or six times per day, with each broadcast on a different set of points. How much would you be likely to remember the next day ... the next week ... the next month?

**N O T E S** is a key word to assist you in note taking in lectures.

**Note** the introduction to the lecture: what is the lecture about? This will help clarify the intentions of the lecturer in your mind.

**Organise** the place that this lecture takes in the series of lectures. Does it stand on its own, or is it part of a large topic? How does it relate to other courses, to laboratory or assignment work? Is there a relevant section in the study book and/or the text book?

**Take** care to note main points as against minor points. A note book full of scribbled writing on everything the lecturer says is a pain to re-read and an agony to be avoided.

**Evaluate** the notes you have made each day to check your comprehension of what you have written, and to add to by further reading if necessary.

**Set** out your notes in a systematic way. You might tabulate - with major headings against the left hand margin, sub headings indented a few centimetres, examples over further. Leave a wide margin for diagrams and your own review comments. This way, you can see at a glance what topics were covered and how much detail was provided on each.

Whichever system you use, it is important that you review your notes as soon as possible. Make sure that you have not confused a new topic with an example of the previous one. This

is only possible while your memory of the lecturer is fresh. During this review, you might tag the topics, sub headings, examples with a code.

eg 1 Topic

1. 1.1 Sub Heading
2. 1.11 Example of 1.1
3. 1.12 Another Example
4. 1.2 Second Sub Heading
5. 1.21 Example 2 Next Topic etc.

When making notes of reading material, many people find it helpful to skim through the article or the chapter or the whole book as the case may be, before commencing to get down to the business of summarising in note form. This method introduces a more relaxed state of mind which in turn will help your overall comprehension.

Always record the author(s), title, publisher, date of the book and the page numbers you have used, in your notes. You may need this information to check on your notes later, or to refer to the information in an assignment.

There is no substitute for systematic organisation and prompt review.

Note taking is an individual activity. Another student's notes would be of little value to you without careful analysis. However, cooperative work comparing notes is a useful exercise. If you missed a point, another student may well have noticed it and noted it.

#### **4 Library**

It is not by chance that the Library occupies a central site on this campus. It is the place where you will spend the majority of your study time. Get to know it. Get to know the librarians. They want to help you. Study the Library web pages for details of the catalogue, index cards, layout, etc.

Sue Dowe is our Faculty Librarian. Contact Sue by email [dowe@usq.edu.au](mailto:dowe@usq.edu.au) as she comes across to the Faculty regularly during the week and you can meet her here in Z Block at that time. You should understand that there are very few courses offered to tertiary students which depend only on lecture presentation. It is of great importance that you should read what others have to say on the matter. Alternative explanations using different examples and from another point of view are essential if you are to develop the intellectual skills and information base expected of our graduates.

#### **5 A Community of Scholars**

In this booklet, we have referred mainly to the way in which you organise your time and to lectures. This is because these are the areas in which most people have problems. However, this is a tertiary institution. It is a community of people with similar goals.

You should learn to live and work in that community. Lecturers use a variety of techniques of presenting ideas. Some incorporate multi-media presentations and other activities. These are not for recreation. They have a part in the overall instructional process. Others use

seminars or problem exercises and assignments. All of these procedures are intended to enable you to develop skills and improve your understanding.

Much of your learning will result from discussion with your lecturer or tutor. A great deal will come from argument with your fellow students. Cooperative work has a lot of benefit. When you are able to defend your ideas, you have shown the sort of development we seek.

## 6 Hints on Solving Problems

One of the major difficulties students have with certain subjects such as mathematics, physics and chemistry, is working problems. Since certain program emphasise problem solving as a means of demonstrating understanding, I am giving you a list of suggestions that may help you in your problem working. These will not help everyone. You will have to find the procedure that works best for you.

### WARNING

The statement 'I really understand the material I just can't work the problems', should be translated to read, 'I've read the material, I know what it says, and I can reproduce all of the formulae in the chapter; but I really don't know what's going on!'. If you can't work most of the problems **you do not understand the material**.

- 1 The best way to learn to work problems, is to work problems. The more you work, generally, the greater your problem working ability.
- 2 Take an organised, consistent approach to problem working.
  - Draw large clear diagrams, and label all quantities.
  - Before you begin to work, think through the complete problem.
  - Try to understand exactly what the problem asks (many students have worked beautiful problems on exams only to find out, when graded, that they were not the problems given on the test). Try to visualise mentally what you will have to find to work the problem.
  - Now try to translate your mental pictures of the problem to the paper. When using any equation or relationship, always write down the general form before plugging in numbers. It is sometimes best to work out a problem symbolically (i.e. in terms of  $v$ ,  $s$ ,  $a$ ,  $F$ , etc) to the final result and then substitute in numerical values. It is much easier to find a mistake by tracing symbols rather than numbers. (Use common sense here!)
- 3 Try to be neat. Sloppy papers often seem to encourage sloppy work
- 4 The order in which the parts of a problem are listed will very often not be the easiest order to which to work the problem.
- 5 Try to work each problem without consulting the text. If you can't then look up what you need to know. Do not use the results of specific problems as general equations to be used to work other problems. It is generally best to work all the problems from first principles, i.e., the most basic relationships presented in each chapter.

- 6 Remember that there are almost always 2, 3, 4 or even more ways to work some problems. If one approach does not seem to work, try another.
- 7 When you finish working a problem and you get the correct answer, stop and see if you understand what you just did. It is possible by manipulating equations back and forth to come up with a correct answer and still have no idea what you have done. It is my experience that students can work problems this way and then get exactly the same problem on an exam and miss it completely.

In many problems it will seem as if there is not enough information to work the problem. In these cases:

Look first to see if it is assumed that you know something not given in the problem (eg in free fall problems, one knows that  $g = 9.8 \text{ m/sec}^2$ ).

Carry along the unknowns in symbol form and then try to obtain additional independent relationships containing the unknowns. When this is done one can often solve the equations or relations simultaneously to eliminate one unknown.

- 9 Some problems are tough! Nothing I can tell you will help on these, you will just have to keep digging at them until you see how to work them.
- 10 If you need help, get it! See your instructor, tutor, or a fellow student. If you have made an honest effort to work a problem, a hint from another person may allow you to see how to work it immediately.
- 11 Finally, if you get hung up on a difficult problem, stop working on it and do something else, then come back later and try again or seek advice.

## 7 Studying and Remembering

Students attending this University are expected to attend classes and practical work for 20 hours per week, over the entire year. We expect them to spend about the same amount of time studying and working assignments. We do not believe that you stand much chance of success in all courses unless you are prepared to devote at least 20 hours per week to study, working problems, doing assignments, etc.

Study is a habit and you should attempt to acquire the habit by allocating definite times during the week for study. You should attempt to sit down at these times, forget about everything else, and concentrate only on your studies, i.e.. convince yourself that you want to remember and study things.

During the year, we will be requiring you to write down definitions, principles, laws, etc, some of which can be expressed in mathematical form. We will also be expecting you to show that you can understand and apply these definitions, principles, laws, etc, by requiring you to solve problems, and answer questions.

You must learn to **remember** these definitions, principles, laws, etc. To remember something, there are three important things you must do.

- 1 You must want to remember it.
- 2 You must carefully read it.

3 You must recall it, as often as is possible.

To remember something, you must first read it. Having read it, you must then **immediately** attempt to **recall** it. Recall means not looking at what you have just read, and then attempting to say it to yourself, or out loud, writing it down on scrap paper, closing your eyes and trying to visualise it (see in your head) what you have read. If you cannot recall it, read it again and then try to recall it again. When you can recall it, move on to the next thing you want to remember. Keep going back over things, attempting to recall them. In any study session in which you are attempting to remember things **you should spend more time attempting to recall things you have read, than you spend actually reading the things you want to remember.**

Every time you sit down to study, start off by recalling what you remembered at the previous study session, and the one before that, and the one before that.

Remembering that recalling things as often as possible, is the way to remember things.

## **8 Forgetting Things**

Suppose you have to remember ten new items of information. Suppose you have sat down, and by reading and recall, you have remembered them by the end of a study session. If you attempt to recall them next morning (say) you may find that you can only remember six of the items, i.e. you have started to forget them. If you attempted to recall them a week later, you may find that you can only remember two or three of the items.

If you revise the work again, and once again can remember it perfectly at the end of the session, then again you may start to forget it again. The rate of forgetting, for a second time, depends, however, on when you did the revision.

If you revise the work shortly after you remembered it for the first time (Case A) you do not forget it as quickly as when you revise it a long time after (Case B). As well, the time taken for revision is less in the first case.

It has been proven that the amount remembered after short revisions, close together and soon after you remembered something for the first time, is greater than the amount remembered following longer revisions, spaced widely apart.

The moral is that if you want to remember more, and spend less time on revision, do lots of short revisions as close together as possible.