Edith Cowan University

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INTRODUCTION TO JAPANESE AND HOW TO DO BUSINESS IN JAPAN


9:00 - 9:15am  Introduction of Presenters:  Maxine Grierson
                  Yoko Hosokawa
                  Gary Peters

9:15 - 10:30am  Overview of Japan - geography, demographics, foreign investment and trade. Japan's importance to Australia as a trading partner.

                  Introduction to Japanese sounds. Pronouncing Japanese words correctly.

                  Business etiquette: Business cards, handshaking, bowing and suitable attire.

                  Introducing yourself in Japanese.

10:30 - 11:00am Morning Tea

11:00 - 12:30pm Preparing to enter the Japanese Market.
                  Who can help you? Where can you find information?

                  Meals etiquette: handling chopsticks, alcohol, seating arrangements etc.

12:30 - 2:00pm  Lunch at Tokio Garden.

2:00 - 3:00pm  More strategies for penetrating the Japanese market.

3:00 - 3:30pm  Afternoon Tea.

3:30 - 4:45pm  Visiting a Japanese home.

                  Wind-up session including an explanation of assessment.
Recommended Reading

General information about Japan


Language Textbooks


Business Practices


# CROSS-CULTURAL COMMUNICATION IN VIETNAM ONE DAY INTERACTIVE WORKSHOP

<table>
<thead>
<tr>
<th>Time</th>
<th>Schedule</th>
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</thead>
<tbody>
<tr>
<td>9.00 - 10.00 am</td>
<td>1. Overview of Vietnam geography, politics and foreign investment and trade.</td>
</tr>
<tr>
<td>10.00 - 10.45 am</td>
<td>2. Important relationship between Vietnam and Australia.</td>
</tr>
<tr>
<td>10.45 - 11.15 am</td>
<td>3. Coffee Break</td>
</tr>
<tr>
<td>11.15 - 12.15 am</td>
<td>3. Introduction to Vietnamese culture: Cultural differences between Australia and Vietnamese.</td>
</tr>
<tr>
<td>12.30 - 1.30 pm</td>
<td>4. Lunch at Dalat Restaurant (Vietnamese Restaurant), 270 Victoria Street, North Melbourne, tel: 329 0329.</td>
</tr>
<tr>
<td>2.00 - 3.30 pm</td>
<td>4. Introduction to Vietnamese language: greetings, addressing, introducing...</td>
</tr>
<tr>
<td>4.30 - 4.45 pm</td>
<td>6. Assessment and Evaluation.</td>
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</tbody>
</table>
MASTERS OF INTERNATIONAL ACCOUNTING
BLB6612: International Management and Accounting

CROSS-CULTURAL COMMUNICATION IN VIETNAM
ONE DAY INTERACTIVE WORKSHOP

Date : Saturday September 11, 1993
Time : From 9.00 am to 4.45 pm
Venue : Victoria University of Technology, City Campus

A. TOPICS:

1. Overview of Vietnam geography, politics and foreign investment and trade.

Readings: Asia-Australia Briefing Papers; Vietnam
(Chapter 1, Vol. 1, No 4 - 1992)

Investor’s Guide to Vietnam
(Chapter 1 and Chapter 2)

2. Important relationship between Vietnam and Australia.

Readings: Vietnam: an Economy in Transition
(Chapter 6 and 7)

Business Opportunities in Vietnam
(Chapters 1, 2 and 4)

3. Introduction to Vietnamese Culture: Cultural differences between Australia and Vietnamese.

Readings: Language and Culture in Vietnam
(From page 1 to page 54)

Cultural Background Paper
(From page 7 to page 18)

Introduction to Vietnamese Culture
(Chapters 2, 3 and 4)

Lecture notes (handout)
4. **Introduction to Vietnamese Language: greetings, addressing, introducing...**

Text: *Functional Vietnamese*  
(Lessons 1, 2 and 3)  

*Vietnamese for Beginners*  
(Modules 3 and 4)

5. **Communication styles for inter-cultural business interactions in Vietnam.**

Readings:  
"*Power Maps*" *Essential for Asian Deals*  
(Part 2, pages 24-28)  

*Doing Business in Vietnam*  
(Chapter 3, Investor's Guide to Vietnam)  

Foreign Investment in Vietnam  
(Chapters II and VII)

B. **ASSESSMENT:** Participation and one written exercise in the workshop.

C. **RECOMMENDED READINGS:**

Số liệu Tổng Kế CHXHCN Việt Nam  
General Statistics Office,  

2. *Foreign Investment in Vietnam*  
State Committee for Co-operation and Investment,  
Philip Cox, Melbourne, Australia, 1992.

3. *Decree on Customs Service*  
Pháp Lệnh Hải Quan  

4. *Legal Writings on Foreign Investment in Vietnam*  
Office of State Committee for co-operation and Investment,  

5. *S.R.V. Banking Decree-Laws, Monetary and Credit Research Institute*  
Foreign Language Publishing House.
6. *Vietnam: An Economy in Transition*
   Adam Fforse, Stefan de Vylder, 

7. *Asia-Australia Briefing Papers: Vietnam*
   Carlyle A. Thayer, 

   Kinh tế và Tài chính Việt Nam 
   General Statistics Office, 

   Saigon Công Thương

10. *Foreign Investment Laws of Vietnam*
    State Committee for Co-Operation and Investment 
    and Philip Cox, Melbourne, Australia, 1992.


12. *Vietnam Transforming a State Owned Financial System*
    A Financial Sector Study of Vietnam 


14. *Introduction to Vietnamese Culture*
    Huỳnh Đình Tệ, 
    Multifunctional Resource Center, USA, 1987.

15. *Language and Culture: Vietnam*
    AMES, NSW Adult Migrant Education Service, Australia, 1984.

16. *Cultural Background Paper: Vietnam*
    Department of Education and Youth Affairs, 
JOURNALS:

1. *Vietnam Today*

2. *Vietnam Investment Review*

3. *Vietnam Economic Bulletin Asia Trade*

4. *Asian Studies Review*
   Asian Studies of Australia

5. *Journal of Vietnamese Studies*
   Australian Association of Vietnamese Studies
How to do business in China - Introduction to Chinese language and business culture

Date: 2 October, 1993
Venue: Conference Room (6th level), 326 William Street, Melbourne

9.00-9.10am
MA Aiying
Welcome of students and introduction of staff

9.10-10.00
Li Yuping
General introduction to Chinese culture
- country specific
- economic geography
- culture
- history
- tradition
- customs

10.00-10.30
Morning Tea

10.30-11.15
MA Aiying
General introduction to Chinese language
- history and evolution
- survival Chinese and related cultural issues

11.15-12.00
ZHU Ying
China's ten-year economic reform
The environment for foreign investments in China

12.00-12.30
LI Yuping
Cultural issues at the dinner table
- seat arrangement
- table setting
- use of chopsticks
- Chinese cuisine and alcoholic drinks
- proper behaviours and common topics

12.30-2.00pm
Lunch in a Chinese restaurant

2.00-2.30pm
LI Yuping
Sino-Australian business relations and Communication skills
- protocols
- dining out
- visiting families
- sightseeing
2.30 - 3.00pm  Chris Groom
3.00 - 3.30pm  Afternoon Tea
3.30 - 4.15pm  ZHY Ying
               Business negotiation skills
4.15 - 4.45    MA Aiying
               Language session - computer-aided Chinese learning program

Towards the end of each major topic, time will be allotted to students for their questions if any or for a general discussion or a case study related to the topic.
The following four scenarios are all to be considered as if you were enacting answers in Vietnam. You have 10 minutes to answer the questions in spaces provided.

**SCENARIO 1:**

You and your company delegation have just arrived in Vietnam. Vietnamese officials see you at the Hanoi Airport.

**How do you address them?**

**How do you introduce yourself to them?**

**SCENARIO 2:**

You and your colleagues are delegates visiting Vietnam, to investigate business opportunities. You are at the briefing session given by the Minister for Transport on a project to renovate the Saigon Airport. At the end of the session, you are asked to give your opinions and interests.

**What would you include in an appropriate response?**
SCENARIO 3:

You are attending a business meeting. Your aims and those of your Australian executive officer are to obtain information, to arrive at agreements and to finalise business decisions.

What is the attitude toward business meetings in Vietnam?

SCENARIO 4:

As Australians who come to Vietnam to do business you must interact with hotel and travel staff as well as potential business partners.

What are Vietnamese attitudes toward foreigners in Vietnam?
You have about five minutes to answer the following two questions in the spaces provided. Try to answer them in Chinese. If you feel it is too difficult, you may use English.

1. Suppose that you are the executive manager of an Australian company and the head of the company delegation visiting your potential business partner in China. Now the first formal meeting has been arranged for both parties to work out an agreement. The head of the Chinese team is Mr Zhang, the manager of the organisation you are seeking to do business with. How do you greet and address your counterpart at such a meeting?

2. The joint venture turns out to be a great success and after years of co-operation, you, the executive manager, and a member of the Chinese team Mr Wang, who is much younger than you, have become close friends. You are invited to a family dinner by this friend. Do you address each other the same way as when you were first acquainted at the meeting? If not, what forms of address did you use then? What would you prefer to use now?

<table>
<thead>
<tr>
<th>At First Meeting</th>
<th>At Dinner Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Mr Wang:</td>
<td></td>
</tr>
<tr>
<td>By you:</td>
<td></td>
</tr>
</tbody>
</table>
3. Robert was the manager of a large computing company and was advertising for a computer programmer. One night at home he received a phone call from a friend, Liu Dong, who came from Beijing. Liu Dong said that he was interested in the job. Robert told him to send a copy of his CV. Liu sent the copy and two days later rang to check that it had arrived. Robert said that it had, but he didn't sound very pleased -- Liu didn't understand why, but thought it might be because Robert was busy.

A few days later Liu was asked to an interview with Robert and after the interview he was quite confident. When he found out that he had not in fact got the job, he was shocked, angry and hurt. He felt that Robert had betrayed him and decided to break off his friendship.

Advise Liu Dong by pointing out the differences in his and Robert's expectations and understandings.
4. Mr. Alan Smith, the chief executive of an Australian company, went to China for a business negotiation which involved visiting a plant in Lining, a small town in Xinjiang Province. They (four of them) chartered one of CAAC's forty passenger planes and arrived at Lining at about 11am. The head of the town was there to meet them and he announced that the leaders of the town were awaiting them downtown where a banquet in their honour had been prepared. Seeing hours of eating and drinking, Mr Smith said: "We came all this way to see the plant, not to have lunch."

After visiting the plant, they came back to the airport and found that 36 of the 40 seats on the plane were occupied by the local passengers. CAAC had sold the seats. Mr Smith was not pleased. It was his plane, he had chartered it. He would not get on.

It started to get dark. Mr Smith relented to the point of offering to let the people fly with him if CAAC would refund to them the fares they had paid, but no way was he going to let CAAC profit twice from the one flight. CAAC wouldn't. Finally, the Chinese passengers left the plane and the four Australians took off in the empty plane in the twilight.

There was no business deal.

Where did Mr Smith make mistakes? What should he have done?

5. What are the major stages of Chinese negotiation and how would you prepare for the negotiation with the Chinese?
Assessment requirements for

**BLB 6612 - International management and accounting**

This subject is examined by ongoing assessment. For the major report students are encouraged to work and research in small groups. All submitted work must be independently written and presented according to Faculty style, including the "Cover sheet for assignments"...

1. "Cultural simulator" exercises, which test reactions to and interpretations of a culture, are to be completed after each workshop and handed in for assessment.

   3 exercises - total words 1500-2000
   3 x 10% = 30%
   Due August 27, September 17 and October 8

2. The Major Report

Each student will individually undertake a 5000 word management report comprised of two sections.

(a) Students are to assume a role as a member of a company's marketing team involved with the export of a specific product or service. The task is to briefly compare Japan, China and Vietnam as potential targets for this specialised export activity, evaluating politics, geography, trade, foreign investment and current relations to Australia. One country is to be justified as the target for the company's export campaign. (1,000 words)

(b) Once the choice of country has been made, the second section of the report is to be written outlining the required personal style, behaviour and knowledge essential for gaining entry into the proposed market. The report should cover the following areas:

   1. Major sources of information on this country to be found in Australia, including details of the required accounting or management data.

   2. Titles and forms of address used in the target country.

   3. Greetings, conversation topics and farewells.

5. Appointments, visiting and punctuality.


7. The concept of "face" how it would be relevant in relation to your proposed negotiations.

Each of the above areas is to be briefly covered and then discussed in a conclusion which outlines to management how staff should be trained and orientated for the proposed export activity. The report will conclude with specific recommendations on how the company should implement the proposed cultural awareness program. (Report 4,000 words)

The report comprises 70% of the assessment of the subject and is due on Thursday October 14.
OVERVIEW

The development of the Speech Training Package was motivated by the need to facilitate the acquisition of skills required to use a sophisticated signal analysis software programme. The signal analysis software marketed as 'Signalyse' is a powerful programme that can be used to analyse signals from a variety of sources in varying degrees of detail. As a prerequisite to the successful use of Signalyse, students enrolled in undergraduate Psychology and Speech and Hearing Science degrees needed skills that would allow them to select the most relevant routines from a series of options. Postgraduate research students also required assistance in selection of analysis techniques suitable for their data.

Researchers who had already developed a working knowledge of Signalyse identified a series of skills that students needed for mastery of the software programme. The researchers with developed expertise felt that the Signalyse manual was too complex for novice users. Successful use of the manual therefore demanded expertise in acoustic analysis principles. Analysis of the task demands revealed that students required a fundamental knowledge of the physics of sound, the speech production mechanism, characteristics of normal and impaired speech and voice as well as psychological measurement principles such as response time and response latency to use the software. In addition to a basic knowledge in these four domains, students required orientation to the organisation and interface of the Signalyse software.

A grant of $12,500 from the University of Western Australia's Division of Agriculture and Science was used to develop the Speech Skills Package. The project called upon interdisciplinary skills and was an inter-University enterprise. The speech training package was designed for use on Mactintosh computers with at least 4 Mb RAM. The programme was developed using Hypercard and uses Quicktime for simple animations. The first version of the Speech Training programme was used by undergraduate Psychology students. The students completed an evaluation of the programme and were invited to suggest ideas to improve the package. Following incorporation of these ideas the speech training programme was then used with undergraduate Speech and Hearing Science students. Once again feedback and evaluation was welcomed. The programme has been further modified in light of these suggestions. It is hoped that the training package will continue to be developed to meet student needs.

PHILOSOPHY

Two assumptions underlie development of the Speech Analysis Skills Package (SASPA). First, the programme adopts the assumption that students seeking expertise in speech analysis should enjoy control over the content and rate of skill acquisition in this area, and that the main aim of SASPA should therefore involve the provision of appropriate information and resources for skill acquisition. Second, development of the SASPA is based on the 'reflective practitioner' model. Program development therefore involves repeated revision of the contents and organisation of the
package based on feedback from student users. This paper describes the first stage of implementation of SASPA.

**USING FEEDBACK TO ADAPT THE TRAINING PACKAGE**

We have collected information from users on two occasions. In both cases the feedback has prompted us to make quite significant changes to the package to improve its performance. Table 1 summarises the nature of feedback on each occasion and our response to it.

**Table 1: Adaption of package in response to feedback**

<table>
<thead>
<tr>
<th></th>
<th>Feedback:</th>
<th>Action:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Confusing structure of information</td>
<td>Provide more structured lessons</td>
</tr>
<tr>
<td>2</td>
<td>Confuse different types of information</td>
<td>Improve graphics to guide students</td>
</tr>
<tr>
<td>3</td>
<td>Lessons too restrictive</td>
<td>Provide more exit points from lessons</td>
</tr>
<tr>
<td>4</td>
<td>Want 'hard copy' of information</td>
<td>Provide notebook facility</td>
</tr>
</tbody>
</table>

The first set of feedback focused on the interface between users and the computer. Users found the hierarchical organisation of information confusing and difficult to use. This organisation provided insufficient guidance to students. They tended to get lost in the complexity of options available to them. In response to this problem the display and organisation of information was simplified, and the number of linear paths through the information was reduced. The effect of these changes was that instead of being able to browse freely through the information, students were now presented with a set of lessons. The lessons consisted of a linear path through the information with limited opportunities for branching, and students often had to complete one lesson before embarking on another lesson.

The first set of feedback also highlighted a tendency by students to confuse SASPA's simulation of Signalyse with the actual Signalyse system. To avoid this problem, the graphical design of the system was modified so that it became obvious to students that they were only working on the simulation of the Signalyse package when using the training package.

The second set of feedback indicated that problems associated with the complexity of the organisation and content of the package had been overcome. Students were now concerned with other features of the system such as having more control over their learning and having printed notes to accompany the lessons.

One response to this second round of feedback was to provide more exit points from lessons so that students could try out lessons and quit from them more easily. Furthermore, it was decided that the request for printed notes reflected a problem the students were having in remembering all of the information presented by the package. However, instead of providing notes as requested by the students a facility enabling them to construct their own notes was provided. This facility enhances the students' learning by encouraging greater depth of processing.
OPTIONS TO FACILITATE LEARNING

The following options to facilitate student learning were provided:
* Browse
* Glossary
* Notebook
* Tests

The **Browse** option allows students to explore the information in any order they desire. Not all students like to take total control of their learning. Some like to be taken by the hand and be led to some extent. Others insist on finding out things their own way. SASPA now provides for both of these kinds of students by giving them the option of following lessons or browsing. The lessons are structured as a sequence of displays that present information in a linear manner. If students want to browse, they can look up the list of topics covered and look at these topics in any order they desire. They have the option of doing this at any time, so if they are in the middle of a structured lesson, they can refer to another topic, browse through that topic, and then resume the original lesson.

The **Glossary** option provides Hypertext facilities for technical terms which students may not understand. If students click on any technical term (for which we have provided a glossary entry) the computer displays an explanation of the term. We provide two levels of glossary information. One level is very detailed, the other is brief (serving as a reminder). Students can set the level of information they desire.

The **Notebook** option is a form of electronic notebook stored on a student's own floppy disk. It allows students to copy and paste text and graphics from the information contained in the training system. They can then re-arrange it to suit themselves for their own use. This notebook has editing capabilities allowing students to virtually create their own personalised text book. When they have finished they can print it out. Some students might be a bit lazy and decide to copy out everything they see. However, there is too much information in the system for students to simply copy it all out, so the students will eventually have to start making choices - what information to copy and paste, what to leave out. The **Notebook** option could also be used as a class exercise to present reports on analysis of speech as part of clinical training.

The **Tests** option allows students to get feedback on their level of knowledge. Learning is an ill-defined task. How do you know when you have learnt a topic? To make this task easier, we are experimenting with providing tests so that students can monitor their own knowledge and give themselves feedback. We believe that this is a powerful motivating factor to ensure learning is adequate.

CONTENT AND ORGANISATION OF SASPA

SASPA is divided into three sections. The first section provides analysis of the physics of sound. It describes sound as a wave, and presents information about the behaviour of waves. It introduces concepts such as reflection and resonance. These concepts form the building blocks for later information about the production of speech. The second section consists of descriptions of how the properties of sound such as resonance are used by the neurological and muscular systems in the vocal tract to produce speech. The third section consists of a description of how to use computer packages such as Signalyze to take a sample of speech and determine the neurophysiological sources of a speech impediment or the psychological factors at work in that speech sample.
SASPA makes use of the graphics and sound capabilities of the MacIntosh computers (see Figure 1.). Movies are used to illustrate dynamic information such as the waves in this display. Sound is used so that students can hear the sound they are analysing.

Figure 1. Sample screen display from the package

Simulation of Signalyse is used to teach students how to perform speech analysis. With this simulation they can be guided through the mechanics of using the real package - which has quite a complex interface.

Samples of disordered speech are also presented (see Figure 2.) so that we can show students how to use the package to analyse different types of disorders.

Figure 2. Using Signalyse to analyse speech disorders

FUTURE RESEARCH

SASPA includes several research opportunities. The Notebook and Test facilities are innovations, and require evaluation. All of the facilities such as the Glossary, Browse, Notebook and Tests present challenges in terms of interface design so that they are sufficiently simple for students to use and sufficiently powerful to be useful.

FOOTNOTE

EMPOWERING ETHICAL ENDINGS
HOW TO PLAN SIGNIFICANT "NOW-WHAT" SESSIONS.

ABSTRACT

Simon and Garfunkel (1981) once sang "There are fifty ways to leave your lover". There are probably more ways to enable participants and the facilitator to leave a course productively.

The purpose of this paper is to address the much neglected subject of how to end workshops using processes that are both empowering and ethical for facilitators and participants. This article focuses on the planned dissolution of a group as opposed to the spontaneous dissolution which occurs when a group disbands because the members no longer feel a need for the group to exist.

I was motivated to write this article when I read a paper by Keleman et al (1992) and whilst incorporating some of their ideas, I wish to pursue the area further by reflecting on the exercises that I have used with groups from government departments, industry and universities in the past. I call these endings "now-what" sessions.

INTRODUCTION

The article is divided into a number of sections:

* definition of terms
* the importance of endings
* factors that need to be considered when planning a "now-what" session
* the components of a "now-what" session
* ending rituals.

DEFINITION OF TERMS

At this stage it is appropriate to define terms used.

Endings

Endings refers to the dissolution stage of a group; mourning, terminating, (Sarri and Galinsky 1967 and Northern 1969), closure (Heron 1992).

Groups are living organisms: like the human life cycle (birth, infancy, childhood, adolescence, adulthood, old age, death) they have a beginning, a middle and an end. (Tyson 1989 p5)

In the 1950s work had already started on analysing the ways in which groups change over time (Bales 1950; Bennis and Shepard 1956). By 1973, Hill and Gruner had collected one hundred theories concerning developmental stages in groups. Perhaps one of the best known is that by Tuckman (1965) describing the possible stages in a group's development as forming, storming, norming, performing. It was twelve years later that attention was drawn to the final stage and
Tuckman and Jensen (1977) called this the adjourning stage. It is the latter stage which is the focus of this article.

This stage may be best visualised by observing the painting entitled "The Gleaners" by Jean-Francois Millet (Louvre, Paris). In this picture gleaners are picking up pieces of corn left by the harvesters ie nothing is wasted. The work is tedious, challenging and back breaking. Asking participants to translate and transfer what they have learnt to their workplaces often has similar elements. Heron (1989) takes this autumnal pastoral image further:

As the group draws to a close, the members gather in and review the fruit of their learning, and prepare to transfer it to life in the wider world outside. At some point in this process separation anxiety will loom up - the distress at parting after such trust and depth of interaction. It can slip the group back into defensiveness (ie forming) unless dealt with awarely - firstly by accepting that the end is nigh, secondly by dealing with any unfinished business, thirdly by celebrating each other and what one has done, fourthly by saying a warm, friendly farewell in the group and one-to-one. Autumn: the fruit is harvested and stored, the harvesters give thanks and go their way. (P 27)

Empowering
Endings should be empowering. I believe that facilitators should be ethical and ensure that participants know that in almost all cases they have the right to choose what they will or will not adopt from a course. Hopson and Scally (1981) define empowerment as:

A process by which one increasingly takes greater charge of oneself and one's life. There is always an alternative and we can choose. None of these alternatives in some situations may be desirable, but it is the knowledge that there is always a choice that heralds the beginning of self-empowered thinking. p57

For further explanation of the "empowerment" concept see Hogan (1992).

Ethical
The term "ethics" is defined in the Concise Oxford Dictionary as:

relating to morals, morally correct, honourable. (1982) p331

The concept is open to many interpretations. However all facilitators need to consider every proposed activity in the light of this definition. Useful questions to ask are:

* Why am I using this activity ?
* What are potential outcomes/consequences of using this activity ?

Examples of unethical endings I have observed include "texts are available at the back of the room and are at reduced cost for today" and "to really appreciate this course to the fullest you must attend a follow-up programme" and "you can do anything you want to, go for it".

THE IMPORTANCE OF ENDINGS

Endings are important for many reasons. Each reason will be discussed in turn.
Transition rituals
Considerable time and attention has been given to ice-breaker activities (Dick, 1987; Watson et al 1981) and contracting for content and desirable group norms (Dick 1987) ie activities which attempt to enable individuals to make a positive transition from the outside world into the workshop group. Very little attention has been given to planning an effective transition back to home and work life. Kubler-Ross (1975) and Parkers (1977) have documented rituals and responses to deal with death and dying; Sheehy (1977), Bridges (1991), Adams et al (1977) and Hopson and Scally (1983) have described stages and methods for dealing with transitions.

Human memory
The human brain remembers beginnings and endings more than the middles, hence the importance given to the preparation of beginnings and endings by public speakers (Pike 1993). If the course has been more than one day in duration, it is useful to build in many "endings" for example at the end of each day or main topic. For example a facilitator may ask participants to note down answers to the following:

* Ideas: What are the most important things you have learned?
* Action: What are you going to do about them?

The affective domain
The affective domain is perhaps the least understood and least acknowledged area of our beings in many organisations. Yet our feelings form the basis for our actions or non-actions. Heron (1992, 1993) sees a person as having four basic psychological modes - the affective ie feelings and emotions; the imaginal ie intuition, imagination, perception, memory; the conceptual ie reflection and discrimination and lastly the practical ie intention and action. At the end of the course we cannot expect participants to concentrate only on the top level since as Heron comments:

....the human psyche functions as an up-hierarchy grounded on feeling, the capacity for resonance with being and participative attunement to other beings. Out of the affective mode emerges the imaginal mode, including the imagery of imagination, memory and perception. From the imaginal proceeds the conceptual mode, the domain of thought and language; and this is the basis for the development of the practical mode, the level of intuition and action. (1993 p 41.)

Figure 1 THE UP-HIERARCHY OF PSYCHOLOGICAL MODES.
From Heron, J. (1993)

The problem is that most learning situations are focussed on the upper two levels ie practical and conceptual and the imaginal and affective modes are frequently ignored. This is not always the
facilitator's fault. Sometimes when intuition and/or feelings are introduced participants often show resistance by saying "oh no this is not that touchy-feely stuff is it?" Facilitators need be ready for this kind of comment with the reasons for the exercise. No exercise should be included in a course unless there is a purpose in mind.

There may be considerable conflicting emotions being experienced by participants and the facilitator at the end of a programme. For example if the group has formed a strong bond and individuals have formed close attachments there may be considerable feelings of loss, sadness and mourning. Some participants may not feel ready for parting and may initiate the ideas of regular reunions. On the other hand, some may be merely confused by the sheer bulk of material delivered (consider the amount of material covered in one to two week courses). Others may be pleased that the end is nigh as they have experienced considerable discomfort because of the level of difficulty of the course or because their own ideas and beliefs have been challenged. A person may have had interpersonal problems with other group members and may be relieved to be leaving.

The course may have made some issues surface for a participant. In that case it may be necessary to talk to the individual quietly. If necessary suggestions of contacts for on-going counselling and/or guidance may be necessary.

Some members may experience grieving and loss and may exhibit avoidance behaviour. They may fail to turn up for a last session complaining of important matters elsewhere. This may be the case, however all participants should be encouraged to attend their last session together.

Members of a group may feel very vulnerable and wish the group to continue. If the group has reached the performing stage frequently networking groups form. In Western Australia the Staff Development Officers Association formed in this way.

A facilitator may be experiencing mixed emotions also. A sense of loss at the termination of an exciting group or a feeling of "burn-out" at having been emotionally and physically drained through "over exposure" to groups. It is the facilitator's job to enable participants to deal with this "emotional baggage" as positively and effectively as possible. The needs of facilitator will be considered in the "post-termination" section later.

Celebration of individual and group achievement
Endings are important in that participants need to be able to celebrate their individual and group achievements and learning. They need to feel good about themselves in order to return to the workplace with a positive outlook to try out new ideas and skills. This does mean however, that a facilitator should deliberately incite participants to an unrealistic level of zeal that they can "change the world" or "do anything". As I mentioned at the beginning endings must be "ethical". Facilitators who orchestrate endings in order to achieve high ratings in the evaluation "happy sheet" are unethical.

Linking elements of the course together
It is important that participants should have an opportunity to see how elements of the course link together. The human brain likes patterns. Many learners remember the whole picture or "gestalt" better than a string of unrelated parts. People frequently feel more satisfied when there is a sense of completion of the whole task.

Converting ideas into actions
Participants need quality time for action planning. It is impossible and frequently undesirable for participants to incorporate everything that is covered in a course into their work lives. Some
processes and skills may be unsuitable and/or undesirable. It is empowering for participants to know that they have a choice (except in workplace laws and regulations) to adopt aspects that suit their needs/or style or that of their organisation.

Ideas and new skills do not become reality unless they are translated by individuals into their own words and own work context. Writing down thoughts helps the brain to clarify ideas and turn them into action. Too often many new ideas and skills are introduced in courses but few are transferred into the workplace. For learning to be complete there has to some resulting change in behaviour.

FACTORS THAT NEED TO BE CONSIDERED WHEN PLANNING A "NOW- WHAT" SESSION.

According to Keleman et al (1992) a number of factors need to be considered.

The age, maturity of the participants
Was the group composed of young undergraduates, post graduates, managers or executives or a mixture?

The classroom/training room culture and climate
Was the primary mode of learning lecture based, experiential, group discussion, individual reflection or a mixture of the above?

The level of intimacy of the group
Has the group been together for a matter of days, weeks or months? How big/small was the group?

The developmental level of the group
What was the stage of group development? Was the group still at the "storming" stage or has it developed to the "norming" or to the "performing" level? (Tuckman 1965, 1977).

Nature of the content
Was the content restricted to abstract theory or did it include self development and self disclosure to the group?

The power dimension
Who should organise the end sessions? According to Heron (1989) there are three power modes:

* the hierarchical mode where the facilitator directs the whole process
* the co-operative mode where power is shared and the facilitator plans the ending session with the participants
* the autonomous mode where the facilitator delegates the planning to the participants completely.

A facilitator needs to be very sure of the group to enter into the autonomous mode for the ending session. The cooperative mode enables both the facilitator and the participants to feel ownership for their last session together.

At the suggestion of last semester's students I now delegate the ten minute "maintenance session" at the beginning of class and the "ending session" to individual students. This gives them autonomy over the kinds of things they wish to address. The results have been very constructive and positive.
The cultural background of the participants
What is the background of the participants? Is the nature of the exercises such that they would be comfortable for people of white Angle-Saxon descent but may embarrass people of Aboriginal or South East Asian descent?

The style of the facilitator
What exercises do you feel comfortable with?
The exercises chosen frequently are based on the comfort zone of the facilitator. It may be necessary for the facilitator to stretch his/her comfort zone to encompass a variety of activities.

Music to accompany the ending session
What music would be appropriate? Music immediately invokes the affective domain. There are many songs and tunes that may be used to set the scene. To elaborate on the pastoral scene described earlier the last section of "The Four Seasons" by Vivaldi or the last movement of Beethoven's "Pastoral Symphony".

On a lighter note the following songs are examples of songs that may be used to lift the emotional tone of the group:

* "Breaking up is hard to do", Neil Sedaka
* Theme from Mahogany: "Do you know where you're going to?" Diana Ross

For further music ideas see Keleman et al (1992).

The length of the ending session.
Basically the longer the course the longer the ending session will usually need to be. A one day course may require up to an hour; a one week course, two hours; a semester i.e. thirteen weeks, a whole three hour session. It all depends on the other factors described above.
The important point is to plan for the ending and not to just run out of time.

THE COMPONENTS OF A NOW-WHAT SESSION

There are many phases of an ending session. Not all are applicable to every group.

Summary of content
A summary of the content can be achieved in a number of ways. The facilitator may choose to go through a long course using a mind movie (Hopson and Scally 1986) or creative visualisation (Fanning 1988). This is achieved by asking participants to lie on the floor or relax in their seats. I always give participants the choice. There is usually resistance to lying on the floor, however, when participants really relax in this way they always respond positively afterwards. To explain the movie I introduce the group to the mnemonic RADAR (Hopson and Scally 1986) which helps them generate the visualisation:

R= relax
A= allow the pictures to come
D= direct the pictures, edit out irrelevant thoughts
A= act in it yourself
R= reward yourself for being successful
A simple breathing and/or muscle relaxation exercise may be followed by the following type of script:

Remember Monday morning when you arrived for this course....what went through your mind when you came through the door?.....how did you feel?......Remember the introduction when we contracted...what were you looking for? Did you get what you wanted? If not why not? Remember session one on motivation..What are the main things you remember from this session......

Please note that the pauses (indicated by dots) are very important in this exercise.

Mind movies are very relaxing and enable participants to reduce some of the stress related to information overload. At the end of this exercise participants may be asked to summarise their main points in pairs or small groups and given time to write down key points.

**Building up confidence**

Visualisation exercises may also be used to help participants build up confidence to use new skills for example:

See yourself standing in front of your next group...feeling confident and at ease with yourself and the world. Feel your shoulders back, breathing is relaxed... you feel centred and confident....

Participants frequently arrive at courses feeling confused about their level of skill development. During the contracting phase they often indicate that they wish to feel more confident in the topic of the course. When learners realise how much they do not know they frequently become demoralised and/or demotivated. It is productive therefore for the facilitator to review the stage of skill acquisition so that they will be encouraged to try and retry the new skill until it is perfected.

**Figure 2 MASLOW'S MODEL OF LEARNING. From Becker B. (1988)**

Unconsciously incompetent
↓
Consciously incompetent
↓
Consciously competent
↓
Unconsciously competent

The diagram above enables learners to understand that they may have been unaware of the intricacies involved in learning certain skills. The awareness of how much they do not know can be deflating, however if learners persevere they can become consciously competent and later unconsciously competent.

Another model by Hopson and Scally (1980) elaborates on the stages in the learning process.
Figure 3 Stages of skill acquisition. Hopson and Scally (1980)

Awareness
↓
Motivation
↓
Analysis
↓
Practice
į
Review
↓
Application

Both models enable learners to realise that the affective domain will be involved in the learning process.

Re-entry issues.
It is important to give participants a moment to imagine how they will re-enter both their home and work life environments. Learning frequently makes an impact on both work and home life, so the following questions are useful:

* Remembering that your partners and family may have had a very busy day what are the things you are going to say to them when you get me? What are you going to tell them about the course?

* Remembering that you work colleagues may have had extra duties to perform in your absence or may be curious to find out about what you have learnt, what are the key things you will tell them about the course? How will you introduce them to any changes you may like to make?

Short term action planning.
Action planning helps to turn ideas into reality and is necessary to assure transference of learning back to the workplace. It may be long or short term.

First of all it is productive to commit participants to doing something as a result of the course within one week. A practical exercise is to ask each participant to draw a TV screen (about 5" x 2") in the middle of a sheet of A4 paper. In it they draw themselves "looking smiling and confidently out into the world". From the four corners of the TV box, lines are drawn on which up to four short goals may be added. These are to be started, if not fully achieved, within a week of the end of the course. One example is reading through the course notes and writing key points as reminders in diaries. Another example may be arranging a time with the boss and/or work team to give feedback about the course.
To ensure these goals are carried out I ask participants to exchange phone numbers with a partner and to arrange to ring each other in one week's time to check out how they have progressed. This may appear somewhat manipulatory but I contend to them that this is done with the best of intentions.

Forming buddy pairs for future support can be a very empowering way for individuals to work on changes ie buddies formed in workshops can support one another after the workshop. They do not have to be from the same workplace. (Hogan, 1991)

**Long term action planning.**

With reference to the diagram from Hopson and Scally (19) Appendix 1, action planning which involves huge goals beyond the sphere of influence of participants frequently fail because they fall into the swamp. This does not mean that such changes should not be attempted, but that they should be broken down into smaller goals starting with themselves and people around them. Goals should be specific; stretching but not impossible and should be accompanied by answers to the 5WH formula:

**Figure 5 The 5 WH Formula.**

Why?
Who?
What?
When?
Where?
How?

The 5WH question formula ensures that action plans start on firm ground.
Short term evaluation
It is important as the facilitator that you identify the variables you and or your organisation wish to evaluate and what you will do with that information by asking:

* What do I want to evaluate?
* What am I going to do with the information?

Evaluation is a huge area and should be the subject of another paper. There are over one hundred dimensions that may be evaluated. Frequently participants are too close to the content to give an objective evaluation, hence the nickname of "happy-sheet" for the usual quick evaluation questionnaires that are distributed at the end.

It is sometimes more effective to initiate a relaxed discussion by introducing open ended questions:

* What would you do to improve this course for future participants and why?

These questions invite participants to make constructive suggestions for improvement. In order to enable participants to build on ideas it is appropriate for the facilitator to note down suggestions, ask for elaboration or explanation where necessary. It is important not to go into defensive mode as this will mitigate against further suggestions.

Long term goal setting incorporated with long term evaluation
Materials needed for this exercise include two envelopes, a sheet of coloured paper to write a letter and a long term evaluation sheet (see Appendix 2) per participant. This exercise involves asking participants to write a letter to themselves including long term goals for the next three months.

Explain to participants that they should follow the following directions carefully:

* address one envelope to themselves at home
* address one envelope to you the facilitator
* write a letter to themselves describing long term goals
* place the letter, envelope addressed to the facilitator and the long term evaluation sheet in the envelope addressed to themselves
* seal the envelope and give to the facilitator.

I usually display these instructions on an overhead transparency.

The advantage of this exercise is that participants are reminded about the course in three months time. This sometimes gives them an extra reminder/motivator to achieve their goals. Also the response rate to the long term evaluation questionnaire is very high and this provides valuable data for the facilitator.

Pike (1993) suggests that participants should use a post card and include:

* something they are going to start
* something they are going to stop
* something they are going to continue
* a compliment to themselves.

In my opinion a postcard is too public. Participants feel more secure writing personal goals knowing that their letters will be sealed.
FINAL ENDING RITUALS.

Human beings have developed elaborate rituals in every society for dealing with the emotional loss of death and parting. In groups that have developed to the "performing" stage (Tuckman 1965, 1977) a ritual may be a productive means to discharge of emotions.

Summary ritual using photos
Sometimes participants find it hard to summarise what they got out of a course. Photos stimulate thinking and give shy people something to hold and talk to in front of the whole group. Cooney and Burton (1986) produced a set of one hundred and twenty black and white photos which can be used in many different ways. To use these photos in an ending ritual spread them around the floor and invite participants to choose one or two which summarise the meaning of the course to them. In a circle each person is given two minutes to explain. No discussion is allowed at this stage. Individuals speak when they are ready, holding up the photo for everyone to see. When he/she is finished the photo is placed on the ground facing into the group.

Picture postcards may also be used for this exercise. The set of pictures by Cooney and Burton (1986) have the advantage that the pictures have been tested across different ethnic and age groups in Australia.

Goal setting and letting go ritual using balloons
Helium balloons are easily purchased from party goods wholesalers. Participants are asked to draw with felt pens on one side of the balloon symbols which represent anything they wish to let go of, maybe negative feelings, old skills, old ideas. On the other side they are asked to draw new ideas, ways of doing things, goals that they want to launch. If there is time it may be appropriate to give opportunity for discussion of these goals. Take participants into open air and ask them to form a circle. You can invite them to decide how the launch should take place. It is interesting to note how long participants stay looking at their balloons as they rise high and higher in the atmosphere. It is a very uplifting feeling and brings something of the "creative child" back into the seriousness of a course. According to air traffic controllers at Perth airport balloons are not dangerous to light aircraft.

Eye ritual
Another way of "saying goodbye" is to ask participants to form a tight circle, shoulders touching, facing inwards. Invite them to silently say "good bye" to everyone in the group silently with their eyes. When this has finished ask them to all turn to the right and outwards.

Individual ritual
Heron (1993) demonstrated what he called a "holonomic exercise" in which participants and facilitator formed circle; holding hands:

* the group moves into the centre saying "I am"
* the group moves outwards saying "We are"
* individuals drop hands and cross arms across the chest saying "This is me"

Exhortation for future learning ritual
Heron (1993) suggested a circle ritual which could be used at the beginning or end of a course. He asked a participant to bring in a small branch of a bush (about a foot long). Holding it he turned to the first person in the circle and lightly brushed the individual with the branch on the stomach the chest and the head saying simultaneously:
"May you learn with your belly, the heart and the head".

That person takes the branch and turns to the next person and repeats the words and actions and so on until everyone has had a turn.

During these rituals Heron modelled "emotional switching" ie if the atmosphere became too heavy he would lighten the mood with a jovial though not belittling remark.

Post termination
This stage was identified by Hartford (1972). A professional facilitator needs to step back and as objectively as possible reflect on a course. It may be that a facilitator wishes to work in private on some personal learning, issues, hurt or distress. In this case some creative and reflective journal processes may be effective (Hogan 1993) or it may be more appropriate to work through these issues with a mentor (Jeruchim and Shapiro 1992, Shea 1992, Collins 1983) or co-counsellor (Heron, 1992, Reason and Heron 1981, 1982). As facilitative work is very complex I believe it is most important that facilitators support each other in this way.

CONCLUSION

The aim of this article was to elaborate on processes used by the author in order to stimulate discourse amongst facilitators about endings which are empowering and ethical for facilitators and participants alike. The importance of endings has been highlighted and a variety of factors that need to be taken into account when planning have been described. Many different types of processes and activities have been described. It is necessary for the facilitator to choose suitable activities with care and forethought always taking into account the aims of the session and the needs of the participants. As Keleman et al (1989) state:

Whatever may emerge there needs to be a consistency. A sense of being true to yourself and to the class experience. p3

REFERENCES


Heron, J. (1993) Advanced facilitator's course notes. Sponsored by the School of Management, Curtin University, Perth. Western Australia.


VIDEOS


MUSIC
For a more extensive list see Keleman et al (1992)

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APPENDIX 2. Long term evaluation.

It is three months since you attended this course. It would be very helpful for me if you would answer the following questions and return this sheet in the mail.

Thanks

Chris Hogan

Your name

Contact address

Course Date

1. What do you do differently now at work/home as a result of attending this course?

2. What were the most important things you learnt on this course?

3. Is there anything I should know? (Do you have any suggestions for planning future courses?)
To avoid the contradiction inherent in lecturing on the virtues of not lecturing, issues surrounding the active involvement of students in the community were presented in a workshop setting. This approach enabled the workshop leader to draw together a range of disparate ideas about the inclusion of the community in the learning process and allowed participants to share teaching strategies. This paper is a summary of the discussion. Particularly acknowledged are the contributions of:

Dr Lyn Abbott, University of Western Australia;
Dr Pat Addison, Curtin University of Technology;
Ms Loretta Do Rozaria, Curtin University of Technology; and
Ms Yvonne Cole, Curtin University of Technology.

The workshop opened with a review of various frames of reference for discussing the community and tertiary teaching. The workshop leader introduced a range of ways in which the term might be conceptualised. These included:

1. Geographical conceptualisations such as rural and urban communities, or local, state, national and international communities;
2. Communities of interest such as ethnic communities, academic communities, for example, the Australian Sociological Association, or fields of endeavour such as women's health networks.

A distinction was drawn between involving the community in teaching, in which case the community is active, and involving the community in student learning, where the student is active, exercising skills in real situations.

IN Volving THE COMMUNITY IN TEACHING

Edith Cowan University has a well established system of community advisory committees at faculty and departmental levels. One aim of the committees is to advise on courses to ensure that graduates have the skills required by their particular occupational groups. Participants in the 'Community and Tertiary Teaching' workshop debated this type of community contribution to university teaching. There was general support for the way in which community advice ensures professional relevance in the education of students. However, it was noted that the role of universities extends beyond a direct response to community demands. Universities should offer leadership and prepare students for future, not just current, work demands. This matter will assume more importance as universities respond to the economically rationalist demands of the Australian Government. In a climate in which universities are expected to provide 40% of their own funding, the temptation will be to 'give the customers what they want' and to provide courses which are responsive rather than visionary or proactive. In this sense the role of the community in tertiary teaching risks being very conservative.

A second way in which members of the community might be involved in tertiary teaching is as guest lecturers. The problem here is that external students cannot benefit in the same manner as internal students. To resolve this issue members of staff of Edith Cowan University have prepared
a videotaped series for use in external courses. The workshop leader presented examples of the videotapes she has prepared for external Health Studies students (see Appendix 1).

It is sometimes better to take students to the community rather than to invite guest lecturers to the university. The workshop leader described the importance of this point in the context of work she has done with the Perth Sexual Assault Referral Centre (SARC). Workers at SARC have developed special techniques for dealing with the survivors of sexual assault. These strategies include the creation of a warm, welcoming non-clinical environment which is best experienced rather than described. By taking the students to SARC they were able to generate their own questions. In particular students noted that SARC is not identified by a sign outside the building. At first they thought this 'odd', but it was possible to get them to consider issues of personal safety of staff and clients, a point which was reinforced by the security system in place at the centre. This led to a more expansive discussion of the manner in which the possibility of rape serves to constrain the activities of all women in society. It is less likely that these issues would have emerged in a lecture room.

ININVOLVING THE COMMUNITY IN LEARNING

The most common way of involving the community in learning is through the use of practicums. The workshop leader drew attention to the extension of the use of practicums in Europe where the principle of europeanisation is being put into practice through the ERASMUS scheme which supports students in an international practicum exchange scheme. In sketching a possible framework for discussion, the workshop leader noted some impending controversies in practicum work, not the least of which is payment of community-based practicum supervisors. For example, payment may become a problem in child-care centres, now being used for practical teaching experience since the lowering of the school-entry age in Western Australia. Traditionally, practical teaching supervisors in schools have been paid an honorarium by the faculties of education placing the students. In the main, other faculties have relied on the goodwill of the community. However, workers in child-care centres, which welcome students from a variety of faculties, are beginning to notice their differential treatment, and may start requesting payment from all faculties.

One solution to the potential difficulties of placing students in community-based practicums is to use the university itself for practical student work. Loretta Do Lorzaria contributed her ideas on student organised health fairs and forums at Curtin University as a way of offering opportunities for students to learn organisational skills.

One problem in organising practicums is that the time available is often too short for any meaningful student involvement with an agency. At Flinders University, South Australia, Yoni Luxford has overcome this problem by giving her nursing students extended role-play activities. For example, a student might be told that she is a women with menopausal and family problems. She is required to spend four days discovering agencies and people who might help with her specific difficulties. The students are required to use only public transport. One nursing student reported back that after this experience she would never consider making an appointment for a client without first checking the bus timetable. These were valuable learning experiences for trainee professionals.

One positive outcome of practicum work is that students become familiar with particular agencies and individuals in those agencies. Dr Lyn Abbott (Faculty of Agriculture, UWA) has built on the importance of knowing people in the field by working with the Australian Institute of Agricultural Science (AIAS) to develop a mentor scheme for students in agriculture and related sciences (horticulture and natural resource management). This scheme is voluntary and is not part of the
formal practicum requirements. Dr Abbott noted that the AIAS Student Mentor Scheme aims to provide a supportive environment for undergraduate students as they pursue their studies, and assists them in preparing for their future. In her own words: "The support is provided individually by a mentor in the workplace, and collectively through group activities organised for students and their mentors...Students in the Mentor Scheme are a valuable link between their university and the workplace. Professionals can lose contact with the education sector...Student participants in this scheme can give professionals in the industry up-to-date information about current courses...Mentors can also give feedback to the university through students...Students can change Mentors to gain experience in other areas and comments on the scheme are sought from all participants so that ongoing improvements can be made." At present, 55 students are involved and Dr Abbott has more than 60 mentors registered. Dr Abbott supports the scheme with two newsletters each year and an annual group meeting.

Curtin University has a voluntary practicum scheme for its students. Dr Pat Addison drew attention to the 'CBS Plus' scheme during the 'Community and Tertiary Teaching' workshop. Further information, provided by Yvonne Cole of Curtin University, noted that 'CBS Plus' is designed to answer the question which many graduate recruiters ask job applicants: "Apart from your degree, what else have you done?". 'CBS Plus' is a student empowerment program which aims to develop social competencies and "to provide an edge for students in their professional and personal lives". The program is "student driven, in that each participant negotiates a personal contract with a council of fellow students". 'CBS Plus' has eight pluses or areas from which students choose four, around which they design their own program leading towards a CBS Plus Certificate. These include:

- Communication and interpersonal skills; and
- Personal growth and development.

Students create their own program. Illustrations of what they might do to complete a 'plus' for interpersonal communication include involvement in a debating society or attending a course on public speaking.

The involvement of the community in learning may extend beyond practicum requirements. Lynne Hunt presented two examples of large-scale research programs which involved the community in the learning process: The Yilgarn Project; and Claremont Cameos.

The Yilgarn Project, completed in 1988, was a cooperative staff-student research project which used the Yilgarn Shire in Western Australia as a social science laboratory. At the suggestion of the coordinator of the program, Lyall Hunt, the Yilgarn Shire commissioned the Department of Social Sciences, Mt Lawley College of Advanced Education, to write a book to commemorate the centenary of the Yilgarn Shire. Each participating member of staff in the department undertook to coordinate their own and student research in the development of a chapter for the book. For approximately eight years students were involved in research projects which contributed to the final publication: Yilgarn: Good country for hardy people. The advantage for students was that they learned social science research skills in a practical rather than theoretical setting and graduated with acknowledged research experience to their credit.

In a similar vein Lynne Hunt and Janina Trotman, Edith Cowan University, have conducted a three-part research project on the history of women teachers in Western Australia. This project has involved students as interviewers, interviewees, authors, sound-recordists and editors of radio programs. Two of the three projected outcomes have now been completed. A set of 45 transcribed interviews are to be presented to the Battye Library and Edith Cowan University archives. In addition, a radio-cassette series has been published with acknowledged student work (see Appendix 2).
THE UNIVERSITY AS A COMMUNITY RESOURCE

To conclude the workshop on the community and tertiary teaching, the workshop leader outlined the need to recognise and reward the contribution of staff to the community. The point was illustrated by reference to the University of North Carolina, USA, which offers an annual award to staff who have worked extensively in the community. In this sense the university becomes a resource for the community, offering back what it takes when it involves the community in the learning process.
This series of videotapes on "Healthy Cities" has been developed by Edith Cowan University. Written and presented by Lynne Hunt, Department of Health Studies, and produced by David Crewes, the series features interviews with urban planners, politicians, health workers and academics.

The programmes are organized as a 42:27 minute documentary feature on "Healthy Cities" accompanied by a series of shorter, discussion-starter videotapes.

The series is pitched at a level suitable for use in upper secondary school and undergraduate courses. It provides a useful classroom teaching resource but may also be used for independent study and external or correspondence students. The content of the programmes is relevant to social studies, geography and planning students as well as those preparing for the health professions.

The underlying philosophy of the series derives from the World Health Organization's policy on "Healthy Cities" and the Australian "Better Cities" programme. The issue of health is taken out of hospitals and surgeries and placed in the context of planned urban and rural environments.

The series features Perth and rural areas of Western Australia as case studies of trends in the western world. The focus is both broad and narrow.

HEALTHY CITIES
Demographic changes in Perth are used to set the scene for a range of health problems deriving from the consequences of urban sprawl. Traffic pollution, social isolation, asthma and problems experienced by youth dependent on parents for transport are discussed to illustrate the importance of planning for a healthy city. Controversies about how to reduce urban sprawl highlight the need for a collaborative planning process to ensure that cities become more relevant to human needs.

DURATION: 42:27 COST A$100

PLANNING FOR A SUSTAINABLE ENVIRONMENT
David Hatt, Chief Executive Officer, Department of Planning & Urban Development, shows how a series of strategic plans balance the needs of diverse community groups with a view to developing a healthy and sustainable environment.

DURATION: 15:56 COST A$45

RURAL PLANNING
Peter Driscoll, rural planner, Department of Planning and Urban Development, discusses the inter-dependency of urban and rural planning. The programme is illustrated with vignettes of Australian rural life.

DURATION: 16' COST A$45

THE PLANNING PROCESS
Using the re-development of the Perth Foreshore as a case-study John Forbes, Department of Planning and Urban Development, walks the viewer through the process involved in collaborative planning.

DURATION: 13:49 COST A$45

ORDER FORM

NAME (please print)______________________

ADDRESS ____________________________

TELEPHONE NO._______________________

ORDER NO.-----------------------------

Please tick titles required:

Healthy Cities $100
Planning For a Sustainable Environment $45
Rural Planning $45
The Planning Process $45
The Full Series $200

SEND ORDER TO: Media Production Office
Edith Cowan University
Pearson Street, Churchlands
Western Australia 6018

ENQUIRIES: TELEPHONE (09) 383 8293
FAX: (09) 383 8029

Normally a video will be supplied in VHS/PAL format. Other formats are available for a small additional charge. Please expect up to 4 weeks for delivery.
Edith Cowan University has developed a series of videotapes on social science research techniques. Devised by Lynne Hunt, Department of Health Studies, the series features interviews with academics as well as two talks developed by Sybe Jongeling, and a guide to library research skills created by Gail Thomas.

The programmes are pitched at a level suitable for use in upper secondary school and undergraduate courses. They provide a useful teaching resource but may be used for independent study and external or correspondence students.

**VIDEOTAPE 1**
**DESIGNING A SURVEY**
Dr. Sybe Jongeling from the Division of Research, Edith Cowan University, offers a well-structured talk which outlines the steps involved in developing a questionnaire survey. Clear graphics focus the viewer's attention on the key points in the lecture.

**VIDEOTAPE 2**
**COMPUTER ANALYSIS OF SURVEY DATA**
In this videotape Dr. Sybe Jongeling demystifies the use of computers for data analysis. Briefly touching on the range of software available for data analysis, he focuses on the simplest and shows students how to put information onto the computer and how to use the computer for the presentation and analysis of results.

**VIDEOTAPE 3**
**LIBRARY RESEARCH SKILLS**
All research starts in the library. In this programme Ms Gail Thomas, Librarian, walks the viewer through all aspects of library research skills showing use of card, microfiche and online computer catalogues. For more advanced students she directs attention to journal indices and computer search opportunities.

**VIDEOTAPE 4**
**THE RESEARCH IMAGINATION**
What's it all about? Research students can often become so enthralled in the nuts and bolts of the research process that they lose sight of the meanings and insights of social research. In an interview between Ms Lynne Hunt (Edith Cowan University) and Dr. Cheryl Waddell (University of Western Australia), the role of the sociological imagination is explored to lend scope and vision to the research process.

**VIDEOTAPE 5**
**A FEMINIST CRITIQUE OF SCIENTIFIC OBJECTIVITY**
Lynne Hunt, Janina Trotman (Edith Cowan University) and Hilary Rumley (University of Western Australia) challenge traditional views of scientific objectivity from a feminist perspective. In this interesting discussion, examples are drawn from sociology, anthropology and education studies, thereby appealing to a wide viewing audience.

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The issue is informed choice. The programme features a smorgasbord of the professional resources available to pregnant teenagers. For Western Australians the video serves to access those resources. For viewers outside the state the range of agencies discussed serves as a model of the resources needed to support young women in their unplanned or unwanted pregnancies.

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Produced by Janis Brenner and Louise Holmes.

Funding provided by Edith Cowan University and The Western Australian Women's Trust.

Interviewers:

Janina Trotman

Janine Hunt

Lorraine Hale

"Claremont Cameos", a six-part series about Australian women teachers, was produced at Edith Cowan University to celebrate the centenary of the state education system in Western Australia.

The stories, selected from a larger oral history project conducted by Janina Trotman and Lynne Hunt, reveal educational issues as well as greater topics to do with women's improvement and changing gender roles.

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TAPE 1 - SIDE B.
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TAPE 2 - SIDE A.
Evelyn Parker, teacher and mayor of Subiaco.

TAPE 2 - SIDE B.
Dorothy Hewett, lecturer, poet and writer.

TAPE 3 - SIDE A.
Hafisa Dean Oswald, teacher and multiculturalist.

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INTRODUCTION

The use of interactive multimedia for teaching and learning has been much discussed in recent years. In particular, there has been considerable optimism about the potential of the technology to enhance the learning of distance education students. The research team decided to investigate the potential of multimedia for external students of the Department of Library and Information Science at Edith Cowan University. Students of the Department study predominantly in the external mode. Three separate awards are offered externally; the Associate Diploma of Applied Science (Library Technology), the Graduate Diploma of Teacher Librarianship and the Graduate Diploma of Archives Studies. Enrolments in individual units of the Associate Diploma of Library Technology commonly reach 200 students who may be located anywhere in Australia. It was felt that these students could benefit from the use of interactive technologies especially in those units, like records classification and indexing, where drill and practice is an appropriate learning method.

THE PROJECT

The original intention of the project was to develop a self-testing set of tutorial exercises using the authoring tool Authorware. The package was to be supplied to both internal and external students.

The major benefits to be derived from the project were:

• development of skills and competencies within the Department in the use of this powerful teaching tool
• exploration of the potential of hypermedia as a method of providing self-directed learning exercises for students in the information sciences
• development of a new and interesting learning experience for external students
• enhancing the learning experience of external students through the provision of control over the learning experience, immediate feedback and effective self-evaluation strategies
• opportunity to gauge the commercial potential of similar products in records management and bibliographic cataloguing and indexing

WHAT ACTUALLY HAPPENED

Almost as soon as we embarked on the project it became apparent that its scope far exceeded the resources available to carry it out. We encountered a range of difficulties:

• It had originally been thought that the Edith Cowan University Virtual Campus Project could be used to deliver the tutorials to external students. This proved to be not possible at that point in its development.
• The development of the testing instruments themselves proved to be extremely time consuming as each example required the anticipation of a wide range of incorrect responses and all responses had to be linked to the appropriate rules in the cataloguing and classification manuals.
Most external students lacked access to computers which were capable of supporting multimedia applications.

Without network delivery there were no storage devices available to external students which had sufficient capacity to distribute multimedia applications.

We were forced to review the whole project and finally we decided that those objectives related to the development of expertise within the Department could be met by another, less ambitious, project.

WHAT WE PRODUCED

We decided to produce an interactive brochure for a new award being launched by the Department for the 1994 academic year. The brochure was intended to be distributed on floppy disk to schools, TAFE and other interested parties. The brochure included introductory details about the course, career prospects, major and minor streams etc. There was also some information about the University, the Joondalup Campus and contact details for further information. It contained about a dozen screens, some still colour photographs and a small amount of sound. The structure was kept simple to ensure that users of the brochure would have no trouble navigating through it. It takes about three minutes to view the whole presentation.

The actual development of the package was carried out by a professional programmer on a Macintosh platform using Authorware. He worked from a storyboard which we developed. The size of the production was limited by the need to distribute it on floppy disk.

What was produced looked very good and we felt that it was suitable for its intended purpose. However as soon as the programmer disappeared from the picture we began to have difficulties. We found that the presentation ran very slowly on anything other than quite high end Macintosh machines unlikely to be found in schools. For example, it was unacceptably slow when used on a Mac LC II. In addition, many schools use mainly DOS based machines. We ported the package from the Mac to the DOS platform. We found that the converted package no longer fitted on a floppy disk, so we had to remove the sound. The quality of the graphics and the range of colours displayed on the type of machines likely to be available in schools was unacceptable; as was the running speed.

CONCLUSIONS

The project did allow us to learn a number of things about the development of interactive multimedia packages. We learnt that they are time consuming to produce. We learnt that a team approach is essential for the planning and production of multimedia materials. We learnt that access to a professional programmer is important for the effective use of time by all members of the team.

We also learnt that as a tool for use with external students interactive multimedia still has some way to go. The technical limitations of the hardware owned by students will need to be overcome either by the passage of time or by the development of effective delivery systems for them, before multimedia can be incorporated into external teaching materials in any meaningful way. We felt that, given the constraints of the technology, we could provide our students with a better product using our existing mix of print, audio and video materials. Despite the difficulties encountered we remain optimistic about the potential for multimedia learning materials in the external environment.
ABSTRACT

Plagiarism is far more distasteful than any 'four letter word' as it undermines the ethical, moral, and legal structure of communication. Within the university system, the incidence of plagiarism has been increasing, but many academics are failing to address the problem. This failure contributes to the problem, but also encourages a psychological mentality of 'cheats prosper' to manifest itself in our society.

This paper attempts to clarify the meaning of plagiarism, suggests ways of detecting the problem, and offers a range of penalties which could be imposed.

Within the university system plagiarism is the bane of both students and academics alike. Students frequently encounter the questioning of their creative processes when faced with the development of a suitable style for their assignment writing. It is often a matter of adjudging the options of attempting to rephrase the author's eloquent elaboration of a concept or event, or taking the easy way out by verbatim transcription. Academics, on the other hand, must assess the output of students on ethical and legal grounds in order to insure that the students' creative processes achieve an acceptable standard.

The issue of plagiarism (portraying another's work as your own) becomes a game between students and academics, with students often attempting to outwit academics through deceit and subterfuge. If successful in this game, the student can be rewarded with high marks resulting in career opportunities beyond the guilty party's capabilities. In order to maintain their fraud, their modus operandi becomes one of continual deception. For the student, this game becomes one of balancing ethics, morals, and legality with the prospect of academic and career success.

The plagiarism game, as far as academics are concerned, is the examination of a relationship between ethical and legal academic standards compared to the almighty dollar. The value is often emphasised through the assessment of students - a good mark will allow the continuation of their education; a bad mark could result in termination. The assessment procedure is further compounded by the relationship between academic assessment and probational prospects, with academics who receive excellent student evaluations being more favoured in the promotional processes.

Substantial anecdotal evidence suggests that academics are more inclined to ignore aspects of plagiarism due to time constraints involved in accurately detecting its incidence, and the effort required to substantiate their allegations in any subsequent appeal process. Students often claim that they are unaware that they have plagiarised, and resort to lengthy, often antagonistic, formal appeals in the hope of obtaining a superior grade, and claiming success by cheating the system.

Nevertheless, the incidence of plagiarism seems to be increasing from year to year (Hardy & Burch, 1981; Ward, 1993). Both Sise (1991) and Stearns (1992) cite many instances of plagiarism.
which have been uncovered in the university systems, mostly in the United States. Whilst it appears that a great deal of evidence of the existence of plagiarism disseminates from the United States, there is sufficient evidence to suggest that plagiarism is no less frequent in Australian universities.

PLAGIARISM DEFINED

The School of Social Sciences (1985) at the Western Australian Institute of Technology (now Curtin University of Technology) produced an explicit expose on what constitutes plagiarism. It stated that "Plagiarism is the act of presenting someone else's work as your own; it is literary and scholarly theft." (p.17). In more legalistic terms a similar definition has been proposed by Stearns (1992:516-7):

"Plagiarism means intentionally taking the literacy property of another without attribution and passing it off as one's own, having failed to add anything of value to the copied material and having reaped from its use an unearned benefit."

These two definitions clarify the taking of another piece of written material and including it in further writings, or in a speech, to be operating in an unethical (Berger, 1992), immoral (Carroll: 1982), and illegal manner (Sise, 1991; Stearns, 1992). The question posed by Stearns (1992:516), that of intentionality, should be reflected in the purpose for which the document is being written - that it was an intentional document - and the fact that some substantial benefit was to be gained by the writer in presenting another's work as his/her own.

Horsman (1991) gives the reader a more specific clarification of the issue by indicating that plagiarism "Usually...refers to the use of any words, tables, diagrams, ideas and other forms of work reproduced by a student without acknowledgment as to their source." (p.46). Furthermore, Carroll (1982) refers to a number of dictionary definitions in her much stronger admonition of the dastardly deed, as "lying, cheating, stealing, dishonesty, deception." (p.92). Murphy (1985) brings us back into the student's domain by simplifying the issue in the following manner:

" •Plagiarism will occur if you omit references - your writing will suggest that the facts or ideas are yours when, in fact, you have read them elsewhere.

•Plagiarism is presenting someone else's work as your own.

•Plagiarism is a kind of stealing.

•Plagiarism may involve the use of a phrase, a sentence, a paragraph, and idea." (p.140).

The student's understanding of what constitutes plagiarism is more clearly outlined through the use of examples in the School of Social Sciences (1985: 17-20) publication. As a preface to the examples, the clarification of what constitutes plagiarism is delineated by:

"Plagiarism can vary in magnitude from a single sentence to a whole essay. It can be deliberate or unintentional. Plagiarism in student essays takes three main forms:

1. When a student presents another student's work as his or her own. Unauthorised collusion or copying may result in an essay or assignment being presented by two or more students.

2. When a passage, words or ideas taken from another writer without proper and accurate acknowledgment of the source - whether this constitutes the whole or part of the work submitted.
3. When a writer fails to provide acknowledgment of a quotation or reference, whether direct or indirect, or of a map, illustration or diagram. (p.17).

Henceforth, plagiarism could be regarded as a lack of common sense and ethics on the part of the offender, as these definitions clearly indicate that for plagiarism to occur, there must be an instance of taking material from another source without acknowledgment of that source. The plagiarist must have made an effort to find the particular source in order to have that material available, and has then transcribed that material from the original source to his/her own work. Thus any claim of unintentional plagiarism can be dismissed on the basis that some effort has been made to transcribe the offending material.

Stearns (1992:515) proposes the argument that any creative process necessarily presupposes that an understanding of previous material or information has been developed, and that this development requires a reading of certain information. Thus, it is supposed that some borrowing must be inevitable in order for the creative process to proceed to the next stage of development. However, the argument proposes that it is not the act of borrowing which is illegal, but the failure to acknowledge the act of borrowing. Finally, Stearns (1992: 518) concludes this argument by stating that

"The only legitimate borrowing, therefore, is that which proceeds to transform the original material by means of the borrower's creative process."

What makes the act of plagiarism so abhorrent to many readers is the abdication of the creative process by the perpetrator (Stearns 1992). Often this is an indictment against the current education system (Carroll 1982), whereby educators are either unaware that plagiarism has occurred, or are unwilling to act in an appropriate manner to eliminate the incidence of this crime (Hardy & Burch 1981). It is clear that concerns have been raised for the past decade, but still little is being done to curb the incidence of plagiarism.

Stearns (1992:518) further elaborates on the plagiarism issue in relation to academia as:

"In the academic world, plagiarism arises most often as the unattributed use of material that, were it properly credited, would not be considered plagiaristic at all. In forms of writing in which citation to supporting authorities is customary, the scholarly plagiarist's offence consists less in omitting to transform the borrowed material than in omitting to identify its source."

Stearns (1992:524) further emphasises that evidence of plagiarism can be found when two papers are compared, and need not be identical, but can show signs of similarity, and this can be judged to be sufficient if an untrained person were to conclude that a degree of similarity existed, rather than the need for an expert to concur on the subject. The concept of plagiarism can extend to ideas as well as to the actual written word, and can similarly be found in verbal rhetoric.

Finally, Stearns (1992:529) concludes that

"Plagiarism, with its lack of attribution, severs the connection between the original author's name and the work. A plagiarist, by falsely claiming authorship of someone else's material, directly assaults the author's interest in receiving credit."
In deciding whether to prosecute a case of plagiarism, Sise (1991:405) outlines the following legalistic approach:

"Unlike the common law tort model of fraud, proof that someone relied upon misrepresentation or was damaged as a result is not required."

It becomes apparent that a person does not have to be damaged by the act of plagiarism, but that, by its very nature, plagiarism has occurred when it can be proven that the material alleged to belong to one author, in fact belongs to another, who documented it at a previous time.

Stearns (1992:520) indicated that those who plagiarise have a psychological desire to be caught, and wish to be punished in a manner that exults in public admonishment. The act of plagiarism is deplorable, not in the process of seeking information from previous work, but in the result of presenting the work of others without offering contribution or improvement on the final result - "Society's disapproval is directed toward the plagiarist and the process of plagiarism, not toward the result." (Stearns 1992:520).

In assessing whether a student has plagiarised, the usual indication is that the style of the written material alters. This alteration usually manifests itself in a reduction in grammatical errors in certain sections, or an increase in the grammatical levels of particular passages, such as the Flesch-Kincaid or Gunning Fog indices. Perhaps a passage is familiar to the reader, which sets alarm bells ringing as the possibility of plagiarism. Even the alteration of spelling of a few key words, such as changing from the American to the English spelling, can alert the reader. Often the reader uncovers plagiarism as a result of a lack of referencing on the part of the writer, and further questioning of the author reveals the source of the information, or the passage is so interesting to the reader, that he or she seeks the original material, which is duly referenced, albeit not correctly, to explore the full creative thoughts of the original author.

Those who have been caught plagiarising must expect to be punished for their misdeeds, usually by being given a zero mark for the particular assignment (School of Social Sciences, 1985). Other suggestions include more severe penalties such as expulsion from the course of study (Carroll, 1982; Horsman, 1991) or temporary suspension (Carroll 1982). The penalty is usually decided in relation to the severity of the offence - the amount of the assignment which is plagiarised - compared with the importance of the course of study. However, in many instances, the effect on the student is taken into account, especially where there is some probability that the student may react in a violent manner, to him/herself or to others. This violence often manifests itself in students who have foregone a great deal to enter university, and whose career aspirations would be severely dampened as a result of being caught and charged with any offence.

If the decision is to dismiss the perpetrator of the crime, then consideration must be given to the accused so that due process is adhered to. There should be positive proof available to support the allegation of the offence, and a formal process must be followed to ensure that fairness is seen to be done. A wrongful accusation can very easily lead to a counterclaim of discrimination or harassment, resulting in the accuser becoming the accused.

In reality it appears that many students escape any severe penalties (Ward 1993), and often the accusing academic is ridiculed by his colleagues as being too pedantic. Many academics, whilst advocating that plagiarism should be eliminated from the campus, fail to take action themselves, and trust that their colleagues will act on their behalf. They are afraid to follow the principles of
correct presentation out of fear that severe repercussions may result from their actions, or out of
guilt of their own plagiarism being found out.

CONCLUSION

The incidence of plagiarism appears to be on the increase during this decade as a result of
ineffective teaching methods and a laxity on the part of academics to diligently assess the work of
their students. Perhaps this is due to the increasing pressures being placed on academics to
increase their class sizes, and at the same time to publish a greater volume of material. The
availability of more sophisticated computer search systems may also contribute to the increase in
plagiarism through the discovery of more obscure articles by one party being weighed against the
finding of that same article by the reader of the plagiarised document.

The academic and legal definition of plagiarism clearly indicates that any failure to acknowledge
the source of non-original material, is an act of plagiarism. It is in the interest of both students and
academics to address the issue of plagiarism in the strongest possible manner if the art of creative
thinking and writing are to retain any real meaning in our education system. Failure to address this
problem could result in students graduating with degrees they do not deserve, with universities
gaining a reputation as being 'degree mills', and with a deterioration of the standards of an honest
and ethical society.

REFERENCES


Carroll, Joyce Armstrong. (1982). Plagiarism: The Unfun Game English Journal Vol. 71, No. 5,
September. pp. 92-94.

Hardy, Richard J. & Burch David. (1981). What Political Science Professors Should Know in
Dealing with Academic Dishonesty Teaching Political Science Vol. 9, No. 1, Fall. pp. 5-14

Horsman, Ormonde (1991). Written Assignments in the Division of Business and Administration
Curtin University of Technology, Perth. Western Australia.

Murphy, Eamon. (1985). You Can Write - A Do It Yourself Manual. Longman CheshireAustralia

School of Social Sciences. (1985). Guide for Essay Presentation Western Australian Institute of
Technology Perth, Western Australia


126, Iss. 11, March 13. pp. 44,35.
Dr Thelma Koppi  
Department of Microbiology, UWA

MEANINGFUL ASSESSMENT: FEEDBACK IS ESSENTIAL

ABSTRACT

Many current assessment practices are incompatible with the goals of independence, thoughtfulness and critical analysis to which most academics would ascribe. Methods of student assessment appear to have the most critical situational influence on learning strategies. Perceived anxiety, created by threatening situations, excessive workloads and inappropriate forms of assessment increase the probability of surface approaches. Assessment procedures which emphasise factual information also lead to surface approaches. In order to equip students to work independently of teachers we must encourage good formative assessment. This involves problem-solving, encouragement and feedback with a view of effective learning. Constant and immediate feedback helps students in self-assessment which is fundamental to all aspects of learning. Assessment by peers and staff is essential in assisting learners. From this students make judgements about their own learning and can adjust themselves accordingly. In the five years I have been at UWA I have tried to improve the efficiency of student learning, treat students as individuals, attend to their needs and gear assessment to the individual student. The assessment procedures that I inherited in the course I taught were not meaningful, and feedback for students was poor. In this paper I discuss the changes I have introduced into the course and data that demonstrate how these changes have been received.

INTRODUCTION: CIRCUMSTANCES OF TEACHING AND LEARNING

My subject is M200/Ag 300 Introductory Microbiology. When I started teaching this subject 5 years ago the students were expected to attend lectures (there were no handouts). All practical sessions were compulsory. There were no tutorials, and no set times students could go and see lecturers. There were 40 lectures in 13 weeks with 10 different lecturers. There were no review sessions. There were 45 different practicals run over 4 hours a week for 13 weeks.

Previous demonstrators in charge of practicals had been PhD candidates whose main goal was to get their PhD done and tutoring was how they supported themselves. Practical assessment involved handing in practical write ups every 3 weeks to be marked. A hands on practical exam was not considered necessary. The only feedback the students received was a mark on their practical books and their final mark.

WHY I THOUGHT MORE OR BETTER FEEDBACK WAS NEEDED

Initially (five years ago) I did not set out to follow the guidelines for feedback, as illustrated on page 176 of Gibbs et al. in their book "53 Interesting Ways to Assess Students". I had not read this book previous to this but I found that my own set of guidelines were very similar to theirs.

When I joined there was little or no contact between academics and students. There were many reasons for this. Some of these reasons I discovered by surveying students. Students were overworked. There were too many lectures and practicals. Too many of the lecturers tried to give too much specialised information in their 45 minutes.
The practical sessions where it is possible to have contact and feedback with students were not run by academics but tutors. There was a lack of commitment by academics to get themselves involved with students. I feel it is necessary to ensure that assessment methods accurately assess the learning outcomes that are intended. Many current assessment practices are incompatible with the goals of independence, thoughtfulness and critical analysis to which most academics would subscribe.

Several investigations have identified methods of student assessment as the most critical situational influence on learning strategies. Perceived anxiety, created by a threatening situation increased the probability of surface approaches (Ramsden 1988). Other investigators have revealed similar connections between excessive workloads, inappropriate forms of assessment and surface approaches. Assessment procedures which emphasise factual information lead to surface approaches. Additional components of the learning environment which influence approaches to learning include feedback on assignments. The department imposing a particularly heavy workload is likely to contain a higher proportion at students relying on rote learning.

Assessment policies therefore often undermine deep approaches to learning. In order to equip students to work independently of teachers we must encourage good formative assessment. This involves problem-solving, encouragement and feedback with a view to effective learning. The common goal of higher education that students should become autonomous learners who can take responsibility for their own learning should start as soon as they enter into University. Constant and immediate feedback helps students in self assessment which is fundamental to all aspects of learning. Assessment by peers and staff is essential in assisting learners. From this students make judgements about their own learning and can adjust themselves accordingly.

In the five years I have been at UWA I have tried to improve the efficiency of student learning, treat students as individuals, attend to their needs and gear assessment to the individual student. It is important for a University teacher to motivate students, stimulate their curiosity, impart enthusiasm (ie. be a role model) for the subject and stress the benefits the subject will be for the student in their career. I believe it is important to use as examples situations that students have experienced in everyday life.

It is important to improve the quality of feedback to students so that they know how they are going in a course. They must be able to assess themselves individually so that they can plan their learning. Students should be able to reflect on the values they hold. They should be encouraged to learn from each other and co-operate in groups. If students copy from others they don't know their own worth. They should be able to think and understand for themselves. This involves their active engagement. If they have no feedback then it is difficult for them. No-one can work in a vacuum. Immediate feedback is necessary to help improve performance.

The students in M200/Ag 300 have previously had very little feedback from staff. Practicals were assessed by writing up experiments and handing them in for marking. There was no time allotted for students to ask for help in write ups. Students copied from each other and out of books and books were lost and not handed in on time. The reliability of a technique demonstrated to students seemed to be more important than the validity of the technique. I believe the quality of feedback here was poor.

I will go into all aspects of a particular component of the course with regard to designing or setting, communicating it to students, supervising students putting it into practice, marking the work, handling results, giving feedback and re-working it. The primary focus was to make changes that lead to a better quality of student learning.
I took up the position of Senior Tutor at the Department of Microbiology in February 1989. In the first semester of 1989 I co-ordinated the practicals for Microbiology 200 and Agricultural Microbiology 300.

My first impression of the practical assessment (in fact the course as a whole) was that the students were overloaded. By interviewing students I ascertained that Microbiology 200 had a reputation as one of the most difficult and labour intensive units.

Looking at the unit as a whole there were problems with lectures and practicals. I concentrated on the practicals to start with. This accounted for 25% of students' final mark. Firstly I had to decide on the objectives of the practicals. I firmly believe that overworking students and giving them too many different practicals so they could learn just another technique was not good for student learning. My policy was to reduce workload and have students doing essential techniques (that they would need for later jobs) individually, collaborating with other students when it was nessessary to illustrate a technique, providing demonstrations when the experimental outcome only was important and discarding practicals that were similar in procedure to others. I would rather students carry out one technique confidently and competently than perform many techniques without expertise.

It was vitally important that students had time to think and discuss experimental outcomes with their peers and demonstrators. It is mainly through understanding that students will achieve deep learning of the subject.

I felt that the first thing that needed to go were the practical write-ups. It was usual that every few weeks practicals were written up as experiments and handed in for marking. Students copied the objectives out of the lab manual and the results from the best students in the class or from books of students from previous years. The conclusions were paragraphs plagiarised from text books. The value to students was nil. The value to demonstrators was nil. Marking was not consistent from various demonstrators; students didn't hand their books in on time and were forever being asked for them. The students often didn't get their books back for weeks and couldn't write the next practicals up till they did. There was no feedback for students. Chasing up demonstrators for marks was also tedious. Handing in loose sheets of paper rather than books also had its own problem of papers getting lost. There was no consistent hands-on practical exam where students were examined on their competency - something I thought was ridiculous from a viewpoint of the students' future jobs. If there was a practical exam (and there had been in some previous years), students had worked in pairs during the year and some had never had a chance to carry out the very techniques we were testing.

SELLING THE IDEA (TO THE ACADEMICS)

The very first thing I had to do was "sell" my idea to the academics in the department. I advised them that I wanted students to carry out some experiments individually and not just in pairs. I knew this cost money and said we could offset that by cutting other practicals and getting students to work in larger groups where individual expertise was not essential. It was very difficult to achieve this. Academics did not want their favourite practical removed, so it was difficult to remove some historical and costly experiments, and it is only after five years of incorporating these changes that I feel the right balance of experiments where students work individually or in groups has been achieved.
About this time we were also told that demonstrators had to be paid fully for their time. Previously they had not been paid for marking write-ups which they usually did after hours, and the departments could no longer use them in this way. Assessment in class was better, but it was very difficult to change students' (and demonstrators') minds on these issues.

I wanted a system of worksheets with answers written on them, with one or two worksheets per practical which students could fill in as they went along. Rather like the workbooks scientists fill in as they are doing experiments but with thought-provoking questions put in, and encouragement to record detail. I also wanted a hands-on practical exam but was initially told this was expensive and time consuming for technologists to develop in the exam period when they should be organising their time for the next semester. I explained that removing the last practical in week 13 and having the exam in semester would avoid this. I designed a practical exam that was very sparing of resources (both material and manpower).

DESIGNING NEW ASSESSMENTS: THE SOLUTION(S) TO THE PROBLEM:

The first thing I did was rewrite the laboratory manual and removed practicals. This has been constantly refined by me over the past 5 years.

I introduced a worksheet system and abandoned write-ups completely. The worksheets consist of questions which require answers from their results, questions which require textbook knowledge for answers and spaces for specimen drawing. At first these worksheets were completed at home because there was still not enough time to do them in class. The demonstrators then collected the worksheets in class and marked them at home. The students felt the feedback was still too slow and I was still chasing up students to hand in worksheets and demonstrators to hand them back, and even though the time spent working at home on write-ups was reduced, they were still time consuming to complete and mark, although less so than practical book write-ups. Students were also concerned that demonstrators did not know the answers to questions. I corrected this situation by typing the answers and drawing the diagrams on the worksheets in the manual and giving copies to the demonstrators. However, because all the answers were in the manual I was worried about the security aspect (in fact one demonstrator's manual was stolen), and the fact that it was time-consuming, I dropped the idea of marking worksheets. I decided to cut a few more practicals and introduce assessment sheets. Students would still fill in their worksheets in class but every three weeks they would be assessed on their knowledge of the practicals. This was "open book" and students could keep notes on their ideas and discussions with demonstrators in front of them. Students were told that without individually completed worksheets, they would not be able to answer questions in assessment tests.

The assessment sheets were originally marked by the demonstrator in class but I decided to mark them myself so that demonstrators could spend that time in discussion with students. I told students exactly which practicals would be assessed in each assessment sheet, and the whole class sat down at a convenient time in the practical and did the sheets individually. I instructed the demonstrators to discuss the results of the practicals with the students before the assessment sheet tests, and students were encouraged to ask questions of the demonstrators.

The assessment sheets were handed out every three weeks and I marked these after class. There were 120 sheets and I programmed the students' results into the computer and had them posted by the next practical. This was done by student number so that students were aware of their progress, were aware of how others were progressing, but were not upset by other students knowing their results.
I prepared a large bank of assessment sheet questions and ensured that even though we have a duplicate practical class running on alternate days, the assessment questions are all different. They are also varied from year to year.

This year I reduced the number of practicals further and had the students co-operating on some experiments. Because the practicals are not as full and because I rotate to a new group of students every 3 weeks, I am able to discuss with the students the course and ask their opinions. Students can come and ask me how they are going. This is direct feedback for them. Now students do some practicals individually, when it is important that they can learn the techniques, and a lot of practicals in groups of two, four, eight or sixteen when the concepts are more important than the execution of the experiment and also helping them gain skills in working with their peers. They also get feedback from other students on how they are progressing. This introduced more discussion of practicals and better feedback for students. They discussed things with demonstrators and their peers. The worksheets were filled in and every three weeks the demonstrators had time in the laboratory to go through the results. Students were also able to discuss their marks and argue over their answers. This was an important part of their learning process too.

Students thought the feedback in the practical assessment was very helpful. This was direct and immediate feedback on their progress and understanding.

I also extensively revised the methods and systematics manual and included them with the laboratory manual into one well bound volume. This also meant they only had to bring one book to class (as opposed to remembering three) and worksheets did not fall out or get lost. The manual was not bulky as pages were put back to back.

**Lectures**
I have helped in getting the number of lectures cut and review session introduced instead for the M200 course in general. Introducing no new material in review sessions gives the students time to ask questions. I have introduced quizzes so students can get feedback on their understanding of the lectures and I ask students to write out their problems for discussion in the review session. I have been instrumental in all demonstrators and lecturers getting feedback on their teaching by introducing detailed surveys of their lecturing and demonstrating skills. Demonstrators themselves are often PhD students who need feedback on their teaching skills and it is important in helping them decide career choices and for their Curriculum Vitae.

**Tutorials**
This year I have introduced a system of tutorials. They are in place of some practicals. I felt it was important to introduce a broader range of teaching approaches and assessment procedures. Every three weeks the students have a tutorial. The demonstrators are used as tutors. There is one demonstrator in charge of 16 students.

Each student is given a page of material, already copied (sometimes from a newspaper) about a subject and is asked to review it for a tutorial and present it orally. Each student is given an overhead for this. Each student presents this to the class in their tutorial group. The topics for each tutorial group represent themes. The themes represent various topical areas of Microbiology such as AIDS, the diversity of micro-organisms, microbiology in the home eg. sterility, antibiotics, swimming pools etc. Things relevant to everyday life. This stimulates them to think widely about the subject and encourage curiosity. Students are given a mark for presentation. The demonstrator and students ask questions of the presenter.
At the end of the sixteen presentations the students are given written questions which they answer individually with the help of notes they have written in the tutorial. Each demonstrator is given one theme and is rotated round the class every three weeks. The assessment sheets for each tutorial group are different so that students cannot find out results from their peers who had taken part in it beforehand. Again all these questions are stored on my computer and new question sheets derived quickly. Each student therefore gets a mark for his own understanding of the practicals and tutorials. This improves the quality of feedback. They are being individually assessed. The results are posted by student number and used as incentives. The tutorials are not examinable again.

**Assessment**

The greatest achievement has been in the continuous assessment and feedback for students (and demonstrators who are of course students themselves) as outlined above. Students get a chance to rate themselves on their own effort in trying to understand experiments. They know how they are going throughout the course. Demonstrators get feedback from surveys and course co-ordinators have feedback from surveys on the course and demonstrators. All this helps to improve the ease with which students learn and to impart enthusiasm. Feedback helps allay anxiety for students and encourage deep learning.

I also devised a hands-on practical exam. It is important that students can actually do the techniques and participate in the class and don't leave all the practical to someone else. The practical exam consists of three techniques in which we expect the student to be competent and another part in which they must be able to identify an organism from a given specimen. I tell the students of the format from day one and this encourages them to practise these techniques individually in the practicals. It also makes them proficient in techniques they will use frequently rather than doing lots of techniques that they may not use again but are illustratory. For a student to know that they have skills directly relevant to their prospective job encourages them. The students take an exam number and the exam is marked "blind". This exam is also run during the semester so that it is close to when the students learned the techniques and does not build up pressure for them. It should also be stressed that a lot of this feedback is in the form of positive encouragement directly told to the student and not just in the form on written assessment.

This continuous assessment gives students a feel for the variety and scope of microbiology. The continuous assessment accounts for 25% of the student's mark. The students know how hard they have to work to pass or attain credit in the written exam. There is no reason these marks have to be secret.

**COMMUNICATING THE PROCEDURE TO STUDENTS**

Students were happy that they had no books to write up, as they found this procedure onerous. I have also received positive feedback from students on assessment sheets.

I explain the whole process to students at the first practical, advising them that the purpose of practicals is to elucidate on theories presented in lectures and to teach them essential microbiological procedures. I give them a timetable of the practicals involved in each assessment sheet, and I encourage them to discuss their results and assessment sheet answers with demonstrators. Students have stated that they feel less threatened by this form of assessment; that they are less anxious because it is an "open book" exam; and they know that it is how they have filled in their worksheet that will count at assessment time. It is stressed that without completed worksheets, they will have difficulty answering the assessment questions. This correct reporting of experiments (i.e. of their observations) is crucial for a scientist.
I display the format of the practical exam on the noticeboard and students can see the techniques they need to be proficient in. I stress that these techniques are essential microbiological procedures and it will be assumed they are thoroughly familiar with them when applying for jobs in this field. Other procedures performed may involve part of these procedures or new ones that they will be taught in-house, or procedures they are expected to develop themselves. I conclude that the key to good basic learning is understanding the subject, and this department has put in place the procedures to facilitate this.

**Written Exam**
Students wanted their final marks back more quickly. They also wanted them posted by student number. I arranged for them to be posted in our department as soon as we had collated them. This feedback again allayed their anxiety. They were also able to come and talk to me about the written exam to discuss their marks. This helped the students understand where they went wrong in exams. This was very important for their feedback.

**DATA THAT DEMONSTRATE HOW THESE CHANGES HAVE BEEN RECEIVED AND EFFECTS ON THE QUALITY OF STUDENT LEARNING OF THIS PARTICULAR SUBJECT MATTER**

**Social Mixers**
We invite students to social mixers so they can air their problems directly to staff or find out about other subjects or talk about what will help them in their career. Because the practicals are not as full and because I rotate to a new group of students every three weeks, I am able to discuss with the students the course and ask their opinions about it. I have also made myself available to students any time they wish to come to see me. If I am not in they can call and leave a message on my phone to arrange an appointment. From talking to the students both in the laboratory, in my room and in these informal mixers I have established that the feedback they get enables them to better manage their student learning. Some students also told me that they were surprised they could discuss the subject and not appear stupid and get good marks. They really like the reduced workload, the fact that the practicals didn't have to be memorised and that staff cared about them.

**Student Performance**
The continuous assessment is meant for students to get a feel for microbiology. It is rare for anyone to fail this part of the course. However student attendance at practicals and scores in assessment have improved over the last five years. It is also hoped that by making the subject more interesting, fun, and motivating the students that they will get a lot more out of it and also improve their performance in the written exams. It may be coincidence but in 1992 we had the highest scores that we have had in Microbiology for some years, however this was not due to an easy exam as the same percentage failed. We also had the highest number that we have ever had of people wanting to do Microbiology in third year.

**Student Surveys**
These have reflected the fact that students understand the course much more easily and enjoy it much more. They have said that working in the dark can lead to all sorts of problems and that quality feedback is absolutely essential for them.

What I have learned is that students are people who need nurturing and reinforcing and that positive feedback to the student is essential for deep learning and an understanding of the course. It is important that the course is relevant to progress in their lives outside the university, both in any prospective job they may have or in their environment outside work.
REFERENCES


Boud, D. (1990), Assessment and the Promotion of Academic Values.


AN INTRODUCTION TO SOCCER AND SELF-DIRECTED LEARNING

ABSTRACT

Research has shown that a Computer Managed Learning Environment (CMLE) is most effective when learners are empowered to access materials to meet their own needs. Rates of progress can be advanced by an ability to reinforce levels of competence by instant feedback. A Self Operated Computer Controlled Educational Resource (SOCCER) is described which enables learners to validate their performance in anatomy. SOCCER is a comprehensive navigational platform, which can be converted to colour, when it is known as a Student Computer Operated Learning and Assessment Resource (ScoLar). Learners are registered by a unique password, to be used thereafter. Individual learning, test and feedback responses are continuously tracked, recorded and registered in a personal file available for instant review by the learner and educational administrators for mutual evaluation. Examples are given which validate Interactive Computer Assisted Learning Packages (ICALP) to supplement, or replace, formal lectures in anatomy. In this way, SOCCER is used to transform lectures into seminar-discussion sessions and Problem-Based Learning (PBL) at a more advanced level than could otherwise be expected.

INTRODUCTION

Investigations which provide strategies and pathways of learning in a computer-managed learning environment (CMLE) are being developed and validated for quality assurance and cost-effectiveness at Curtin (Cameron, 1992; Lee, 1994; Lee & Cameron, 1994). The rapid advancements made in information technology, information processing and communications technology, are changing the way it is stored for access and presentation to tertiary students (Hobbs, 1993; Stringer, 1993). As these developments exponentially increase, so does the need for CMLE's which can access Interactive Computer-assisted Learning Packages (ICALP), networks and library-based CD-ROM databases. As this trend is advanced further by software compression and other techniques, it poses continual problems of how to facilitate student awareness of these resources for self-directed learning and navigation (Lee & Cameron, 1994).

INTUITIVE LINKS AND INFORMATION EXPLOSION

The education of modern health care professionals requires the assimilation of detailed information from an ever widening variety of contrasting sources (Shortliffe & Perreault, 1990; Lee, 1994). As an end result, such information can only be absorbed by individuals at a conceptual level, causing educators to create ‘intuitive’ links between disparate pieces of information (Kidd, Hutchings, Hall & Cesnik, 1992). Evidence of the effective use of CBL in medical schools is shown by the research of Holley and Heller (1984), Harkin, Dixon, Reid and Bird (1986), as well as Wigton, Poses, Collins and Cebul (1990), who have successfully used CAI to enhance the diagnostic skills of experienced physicians.
To reduce the information overload created by this sustained explosion of knowledge, CBL has been incorporated into many areas of medical education (Starkweather, 1986; Hannan, 1991; McCracken & Spurgeon, 1991), with ample evidence to affirm its efficiency and cost-effectiveness (Prentice & Kenny, 1986; Fincher, Abdulla & Sridharan, 1988; Lee & Allison, 1992 & 1993; Lee, 1994). Nevertheless, there is a continued risk that these techniques will be used empirically without proper research into their development and correlation with the intellectual processes of its learners (Lee & Allison, 1993; Lee & Cameron, 1994). The precise mechanisms by which information is acquired from CBL is still poorly understood, which, according to Kidd, Hutchings, Hall, & Cesnik (1992), is similar to the diagnostic procedures presently used by clinicians.

**LEARNING ANATOMY BY COMPUTER**

Using computers for the learning of anatomy, Jones, Olafson and Sutin (1978) compared the results of medical students in traditional classes with those learning by CBL, to show that knowledge of gross anatomy can be absorbed equally well without lectures or dissection. In a comparative investigation, Walsh and Bohn (1990) used CAL to teach gross anatomy, finding no significant differences between experimental and control groups. These authors were affirmed by Lee & Allison (1992 & 1993), who assert that ICALP can be as effective as lectures for the presentation of anatomical information to physiotherapy students.

**Soccer In A CMLE**

Research has shown that a CMLE is most effective when it is designed to provide pathways and freedom of choice which empower learners to become self-paced and self-directed by access to materials which meet their own needs (Lee & Allison, 1992 & 1993; Lee, 1994). Rates of progress can be accelerated by instant feed-back prior to tests under controlled conditions. To meet this aim SOCCER was developed by funds from the Committee for the Advancement of University Teaching (CAUT) to facilitate the teaching and learning of anatomy by physiotherapy students in a CMLE. As an educational instrument, SOCCER provides data to measure and validate the performance of learners and educators in discrete areas of anatomy.

**Soccer**

SOCCER not only empowers its learners to become self-paced and self-directed, it is also a universal platform of entry to register, monitor and track learner activities whilst validating individual levels of performance. SOCCER is a comprehensive instrument to navigate through a network of black and white work-stations. See Figure 1. To meet the needs of colour operated work-stations, it can be converted to SuperCard®, when it is referred to as a Student Computer Operated Learning and Assessment Resource (ScoLar).

**ICALP v Lectures And The Retention Of Knowledge**

Porter successfully compared the retention of knowledge delivered by multimedia to paramedics in 1991. Lee & Allison (1993) advanced the findings of Porter to demonstrate that the retention of neuroanatomical information gained by ICALP is equal to that obtained from traditional lectures. Identical information was given to 41 students in lectures and to 37 students by ICALP. The same test was administered to both groups under controlled conditions as pre, post and unexpectedly delayed re-tests, at 60 and 120 day intervals. Scrutiny of these results could show no significant difference between the two groups.

**Individual Registration**

On entry to SOCCER, each learner is categorised by inclusion in a draw-down list and response to the presentation of a unique password. From there on, all activities are registered and recorded in a
An abundant supply of passwords is stored for presentation to individual learners during their first time of registration, to be noted and used thereafter. In this way, SOCCER provides each learner with a key for permanent registration with opportunities of revision, learning and entry to test and feedback items thereafter. Passwords may be retained throughout a whole course of study, or varied daily, according to any need to change.

**Approach To Learning Materials**

Once registered, the learner is taken to a prescribed level of learning, with access to test and feedback items. Thus, on entry, the level of learning is registered, identified and dispensed by SOCCER to contain the learner within prescribed parameters. See figure 2 for the view of a second year student after registration.

**Learning By Themes**

SOCCKER enables learners to navigate freely from the point of entry throughout a prescribed syllabus. A primary theme of learning (Fig 2.) provides access to secondary subdivisions. As an example, a click on 'upper extremity' give access to the secondary themes of 'shoulder-arm', 'arm-forearm', 'forearm-hand' and 'hand-function'.

**Interest**

To provide interest, transition from primary to secondary themes is enhanced by 'hot spots' scripted to transport the learner to designated screens. This strategy of innovation gives an illusion of change by the appearance of an area of demarcation. As an example, when the browsing tool is moved into a secondary subdivision, the screen dissolves into one which highlights the selected area, where a further click takes the learner to its ICALP.

**Innovation And Animation**

To sustain interest, SOCCER screens are innovated to give an illusion of animation. Thus, a click on 'reflexes' is scripted to repetitively change screens, then dissolve before entry to the ICALP for reflexes. In this way, an illusion of animation is created to surprise the learner by a combination of elbow, knee, head and neck movements. The penultimate screen shows the subject to have a puzzled facial expression, dissolving into the ICALP for reflexes. See Figures 3 & 4.

**Laminations Of Access**

In this way, a variety of the devices is used to explore a number of laminated pathways to ICALP materials within SOCCER for differing strategies within the CMLE.

**A Summary Of Individual Results**

A vital component of SOCCER is its facility to provide instant information about the rate of progress of individual learners working in it. A click on the Examination Results Summary (Fig 2.) gives an instant review of all activities undertaken from the commencement of any learning period. This information is continuously up-dated in a personal file which can be opened by the learner at any time. The value of the results summary is that it enables self-paced and self-directed learners to measure their rate of progress and success throughout the syllabus. The same information is available to the administrators and developers of learning materials to track and monitor the progress of each learner in the CMLE.
Problem Based Learning
Results obtained from this study have not only validated the effectiveness of SOCCER as a navigational instrument, but also that ICALP and test items can be presented within it to replace or reinforce formal lectures in any given topic. On average, the time spent by individuals in SOCCER is equivalent to that normally spent in library and home based study. In this way, lectures in the fourth semester have been converted to seminar-discussion sessions in a climate of PBL, advancing the rate of progress beyond that which could otherwise be expected (Lee, 1994).

Problem Assignment
In a problem-based environment, SOCCER provides randomised groups of problems to challenge its users. A click in the problem assignment box (Fig 2.) supplies the learner with a particular problem which can be read and printed in the CMLE. Each problem is open ended with case studies to reinforce previous learning and initiate additional research in support of an appropriate solution. Resource Persons are available for consultation during laboratory sessions, and solutions are presented within a specified time frame. Learners are encouraged to work as individuals, or in small groups with a limit of four members. Individuals or small groups, are assessed by their interaction with the Resource Persons as well as a mark from the subject controller for the final written presentation.

Feedback
To gain an insight into learner reaction, a Feed-Back Instrument (FBI) has been developed with an inventory of more than forty items. The FBI allows learners to record their reactions by clicking radio buttons, or typed-in responses to specific questions. These data from the FBI is then stored and filed for future correlation and research. To capture the creativity of any group, a final type-in field allows learners to describe alternative preferences to those already mentioned. This information is briefly outlined in Figures 5 to 10.

Research And Control Methods
In this way, SOCCER, ICALP, Test and FBI's are used within a CMLE to provide a secure source of data for the investigation of any educational research hypotheses. Furthermore, not only does this model empower learners to become self-paced and self-directed, it can be used to rate levels of competence and progression from informal to formal test procedures under controlled conditions at computer work-stations.

SUMMARY AND CONCLUSIONS
This paper has reviewed and discussed differing computer-assisted learning styles at the tertiary level. It has also given validated examples of CBL with sufficient evidence to support its use to enhance or replace traditional lectures in anatomy. The development and implementation of SOCCER in a CMLE has been shown, with its facility to obtain data for further educational research and administrative cost-effectiveness. SOCCER has been shown to provide freedom of access to learning materials as well as record and track the activities of Physiotherapy students whilst learning anatomy. These techniques which have empowered anatomy students to become self-paced and self-directed, may readily be transposed to any other field of study. These methods which record data from test, practice and feedback items via SOCCER, provides quantifiable information to substantiate the administrative and educational cost-effectiveness of ICALP in a CMLE. In this way, not only can acquired knowledge be assessed and measured, but also the variation of pathways chosen by its users can be tracked for further analysis. With the ability to measure and respond to user feed-back, these techniques enable academic staff to place the responsibility for the acquisition of knowledge directly upon the learner, creating a climate for problem-based learning and thinking in a more advanced dimension than could otherwise be
expected. From this, it is clear that SOCCER can be applied with confidence for the development of software which not only empowers its learners to become fully self-directed, but also provides a continuum of data for research purposes.

<table>
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<tr>
<th>Group</th>
<th>n</th>
<th>Pre-test Mean</th>
<th>SD</th>
<th>Post-test Mean</th>
<th>SD</th>
<th>+ 60 Days Mean</th>
<th>SD</th>
<th>+ 120 Days Mean</th>
<th>SD</th>
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<td>Lecture</td>
<td>41</td>
<td>43.58</td>
<td>8.67</td>
<td>73.19</td>
<td>7.76</td>
<td>68.04</td>
<td>8.49</td>
<td>68.06</td>
<td>8.24</td>
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<tr>
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<td>44.81</td>
<td>6.54</td>
<td>75.42</td>
<td>6.76</td>
<td>70.34</td>
<td>9.58</td>
<td>69.68</td>
<td>9.02</td>
</tr>
</tbody>
</table>

Table. Pre, post and unexpectedly delayed re-tests which compare the retention of knowledge by Lecture and ICALP groups.

Figure 1. Entry to SOCCER for registration and learning
Figure 2. A second year student view after registration.

Figure 3. A further click on Reflexes gives an animated journey to Fig. 4.
Figure 4. A dissolving view of animation before entry to the ICALP for reflexes.

Figure 5. Entry to a Feed Back Instrument
Figure 6. Questions which elicit information about the learner to correlate the transfer of 2-D information into a 3-D skill.

Figure 7. Information to correlate attitudes with results.
<table>
<thead>
<tr>
<th>My gen level of interest in learning by computer is</th>
<th>Low</th>
<th>High</th>
</tr>
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<tr>
<td>My desire to learn anatomy by lectures only is</td>
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<tr>
<td>My gen desire to learn anatomy by Labs, Labs &amp; Comp is</td>
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<tr>
<td>My gen ability to learn anatomy independently is</td>
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<td></td>
</tr>
<tr>
<td>My desire to learn anatomy independently is</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My desire to learn basics then attend lec-seminars is</td>
<td></td>
<td></td>
</tr>
<tr>
<td>My desire for informal open lab-sessions is</td>
<td></td>
<td></td>
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<tr>
<td>My desire for open labs followed by challenge tests is</td>
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<td></td>
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<tr>
<td>My preference for learning anatomy with friends is</td>
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<td>My preference for learning anatomy by myself is</td>
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<td></td>
</tr>
<tr>
<td>The gen influence of tests on my learning anatomy is</td>
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<td></td>
</tr>
<tr>
<td>The correlation of my marks to effort in anatomy is</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 8. Questions to correlate attitudes to styles of learning.

In no more than one line, please type in your reactions to:

The thing I value most about anatomy lectures is

The thing I value least about anatomy lectures is

The thing I value most about anatomy laboratory sessions is

The thing I value least about anatomy laboratory sessions is

The thing I value most about learning anatomy by ICALP is

The thing I value least about learning anatomy by ICALP is

Figure 9. Strategies to gain information about preferred learning situations.
Thank you for your hard work in anatomy

Your feedback will help us to improve future learning in anatomy and to make the best use of our resources.

We value your efforts and our main objective is to help you develop into an autonomous person, responsible for your own learning throughout the rest of your life. As such, you will continue to absorb new information with enough confidence to adapt and apply it to changing situations.

Please type any other suggestions, ideas or comments into the box below. This information will be treated with the utmost confidentiality.

Figure 10. Acknowledgment of the learner to facilitate unexpected information.

REFERENCES


Hobbs, P. (1993) Director of the Centre for Computing in Economics at the University of Bristol at a seminar on "Developments in higher education in the UK" at Curtin, 24th November.


ABSTRACT

Academic staff and librarians form a vital partnership in the provision of quality teaching and learning experiences for tertiary students. The Curtin University Library and Information Service has designed a Library Checklist for Unit Coordinators to encourage the partnership between academics and librarians. This paper outlines a number of library related tasks to be considered by academic staff when preparing and presenting teaching programs. Whilst the Checklist focuses on a particular Curtin initiative the issues raised are equally relevant to other universities.

INTRODUCTION

Academic staff and librarians form a vital partnership in the provision of quality teaching and learning experiences for tertiary students.

University libraries provide academic staff with access to information and a range of services to assist in the preparation, delivery and evaluation of effective teaching programs. In turn academic staff assist librarians through the careful preparation and presentation of courses such that student difficulties and frustrations in using the library are minimised. Academic staff also play an important role in developing library collections to support their teaching programs.

This paper will examine some of the many ways in which librarians and academics work together to provide a quality teaching and learning environment for students. Although the paper focuses on particular initiative at the Curtin University Library and Information Service, namely the Library Checklist for Unit Coordinators (see Figure 1), the issues raised are equally relevant to other universities.

CURTIN UNIVERSITY CHECKLIST

The Curtin University Library and Information Service will be trialing a Library Checklist for Unit Coordinators in Semester 1 1994 which is designed to encourage cooperation between academics and librarians to ensure the resources and services of the library are fully utilised. The Checklist outlines a number of library related tasks to be considered by academic staff when preparing their teaching programs. These tasks are outlined in detail below.
Step 1: Checking the library catalogue
When co-ordinating a unit it is important to know what resources exist in the library to support your teaching program. A search of the library catalogue can be conducted in the library or in many cases from your office. If required, librarians can provide assistance in developing an appropriate search strategy. Alternatively librarians can search the catalogue for you and arrange a printout of all the resources held in the library on a specific subject.

Step 2: Identifying new resources
It is essential to identify new resources and sources of information to ensure teaching programs and recommended readings are up-to-date.

CD-Rom technology provides fast and efficient access to journal literature across a wide range of subject areas. A CD-ROM search will enable you to keep abreast of developments in your field by allowing you to identify references to recent journal articles on specific topics. Articles can be ordered through the Inter-Library Loan service if not held in the library. Recent articles can then be used as background information in teaching programs or as recommended readings for students (see Step 4: Reading Lists).

New resources and sources of information can also be identified through regular visits to the New Books and New Serials displays within the library. Regular visits to the library will also help maintain familiarity with the library resources and services your students will be expected to use.

New resources can also be identified from publishers promotional literature and your professional reading as outlined in Step 3.

Step 3: Ordering new resources
The ordering of new resources is one of the most important areas where academics and librarians work together to create the best possible learning environment for students. The library is dependent on academic staff ordering resources for the library's collection.

Publishers provide libraries with a vast array of literature promoting their products. At Curtin University the literature received by the library is forwarded to the relevant schools. This may be to a designated academic staff member within the school, or to individual staff members known by librarians to have an interest in a particular subject area. You should find out how publishers' literature is distributed to, and within, your school in order to effectively contribute to the development of the library's collection.

In addition to ordering from publishers' promotional literature academic staff are encouraged to order new material identified from their professional reading. Most academic journals have a book review section from which new books can be identified. The library also holds journals which are devoted entirely to reviews of new books. A list of popular review journals is included in the attached bibliography.

Once the required items are identified, order forms are completed and returned to the library. In many cases the library places orders with overseas suppliers and therefore a significant delay can be expected in receiving books. Items required for Semester 1 would need to be ordered by the end of the previous semester at the latest.

Academic libraries vary in the methods used to calculate book budgets. You should become familiar with the method used in your library to maximise the benefits of the ordering process.
Bear in mind that book budgets are limited and some orders requested towards the end of the academic year may be returned to you for reconsideration.

Step 4: The reading list
Problems encountered by students in locating library resources are minimised by a well constructed reading list. Reading lists are provided to guide students to recommended readings for a particular unit being studied. Consideration should be given to the following points when preparing your reading list.

i) Referencing style
Students will often base their assignment bibliographies on the references provided in the course outline. The format of the reading list should, therefore, be the same as that required by students when completing their assignments. Many schools produce their own guides to student assignments in which the preferred referencing style is outlined. Libraries will also hold style manuals which describe in detail all the major referencing styles. Using an established format for your reading list will ensure all the information required to identify and retrieve items is provided.

A list of popular style manuals is included in the attached bibliography.

ii) Allocating priorities
You can assist students make the most effective use of their time by allocating priorities to items on the reading list. Students are often unable to assess the relative importance of readings and may ignore the more important references in favour of those that are less useful. Clearly distinguishing between essential and recommended readings on the reading list will minimise this problem.

iii) Reserve Collection
A common complaint by students concerns the availability of items on the reading list. If an item is likely to be in demand it should be placed in the Reserve Collection where shorter loan periods maximise student access. At the Curtin Library academic staff can complete forms indicating which items are required for the Reserve Collection. Library staff will retrieve these books, arrange placement in the Reserve Collection and generate a catalogue record. Copies of journal articles can be given to Reserve Collection staff for inclusion in the collection. Statistics on the use of Reserve Collection material are provided to academic staff an can be valuable in determining student use of the collection.

iv) Availability of items
Undergraduate students generally do not have access to Inter-Library Loan services and will have to travel to other libraries to borrow or use their resources. Not all students have equal access to transport and such a demand may create an unfair burden for some.

Are your students expected to obtain all their recommended readings from the university's library or are they expected to use the collections of other libraries? If students are expected to only use their university library, have all the recommended readings been checked for their availability within the library? If particular journals are not held in the library you can obtain copies of articles through the Inter-Library Loan service and have them placed in the Reserve Collections for student use.

If students are expected to use the collections of other libraries they should be made aware of this and relevant items on the reading list identified.
v) Dictionaries and encyclopaedias
Students undertaking a literature search must understand the topic being studied. This requires the student to define the terms within the topic. Students seeking definitions of terms in assignment topics are often referred to subject specific dictionaries and encyclopaedias by library staff. The use of subject dictionaries is also important when identifying alternative terms required to search CD-ROM databases or the library's online catalogue.

References to subject specific dictionaries and encyclopedias, if available, should be included in the reading list. These can be identified through a search of the library catalogue conducted in Step 1.

vi) Non-book materials
Students learn in different ways and for some students the use of audiovisual material enhances their learning experiences. The library contains resources in a wide range of formats including videorecordings, audiocassettes, models, and computer software. Students could be referred to these if they are appropriate for their particular unit of study. These resources can be identified through the search of the library catalogue conducted in Step 1.

Step 5: Assignment topics
Library Staff find that students having difficulty locating material for their assignments often lack a clear understanding of what they are being asked to do. In this situation librarians are often called upon to interpret the assignment questions for students. This can be avoided by making assignment questions unambiguous and by clearly outlining assignment requirements.

Students also have difficulty finding enough material within the library to complete assignments due to their inadequate search strategy or to a lack of library resources on a particular topic. A poor search strategy can be rectified with assistance from librarians, however, a lack of resources may force students to use the collections of other libraries. Resources held outside the university's library are not always easily accessible for many students. Prior to setting assignment topics some academic staff conduct brief searches of the library's catalogue and CD-ROM databases to ensure adequate resources exist within the library for students to complete their assignments.

Step 6: Reader education
An important role of the academic library is to educate students in the effective use of the library's resources and services. Academics and librarians share a key responsibility in developing information literate students, that is, students who are able to identify, retrieve and use information required to solve problems. Information literacy is a key competency increasingly demanded by employers of graduates.

One of the aims of library reader education is to develop the information literacy skills of students. At Curtin University the majority of first year students, and many other students, undertake some form of reader education in addition to basic library orientation tours. If your students are not receiving some form of library education you should consider contacting the library to arrange a suitable program. This may range from a very general overview of information sources in your subject area through to an in-depth study of specialised resources tailored to the specific requirements of a particular unit.

Library reader education is most effective when closely linked to the existing course structure, that is when the timing and content of the classes is most appropriate for the students' needs. You should contact the Information Services or Reference staff in your library to discuss the most appropriate level and timing for reader education sessions.
Step 7:  Impact on library considered
Library staff will appreciate being contacted about changes to courses or special demands likely to impact on the library's services. This may be a change in course structure with lectures being replaced with library assignments or a demand for a specific library resource by a large number of students. With prior notice librarians may be able to ensure that a sudden increase in demand for a particular resource will not affect student access.

Step 8, 9 and 10: Feedback
Evaluation of teaching programs is essential if a quality teaching and learning environment is to be maintained. Feedback from students is an important element of the evaluation process and time needs to be allocated within the teaching program for this purpose.

The Library Checklist points concerning the reading list and assignment topics could form a basis for some of the student feedback. Valuable information can be gained by asking students whether reading list references and library resources required to complete assignments were available, accessible, appropriate and readable. Students' responses may have implications for the teaching program and/or the services and resources of the library.

You can assist the development of a quality library service by forwarding to librarians student feedback concerning the library and any comments regarding your library experiences whilst preparing and conducting your teaching program. Similarly librarians will often be able to provide feedback on aspects of your program relating to the library and on your students' use of the library.

CONCLUSION

The vital partnership between academics and librarians in creating a quality teaching and learning environment has been demonstrated through a discussion of the Library Checklist For Unit Coordinators. Consideration of the ten steps on the Checklist will ensure the resources and services of the library are fully utilised when preparing and presenting teaching programs.

BIBLIOGRAPHY

Articles


Style Manuals


**Review Journals**

- Australian Bookseller & Publisher.
- Book Review Digest.
- Book Review Index.
- Bookseller: The Organ of the Booktrade.
LIBRARY CHECKLIST FOR UNIT COORDINATORS

1. Have I checked the Library catalogue to ascertain what resources are held in my subject area? □

2. Have I identified new resources?
e.g. examined blurbs, conducted a CD-ROM search? □

3. Have I placed orders with the Library for resources needed by, or useful to, students next semester? □

4. Have I prepared a reading list where:
   i) references are consistent with the recommended referencing style? □
   ii) references have been identified as 'essential' or 'recommended'? □
   iii) high priority or high demand items have been identified and placed in Reserve Collection? □
   iv) all reading list items are available in the Library? □
       e.g. do I need to obtain inter-library loans from other libraries?
       OR items not available in the Library have been identified? □
   v) a subject specific dictionary or encyclopaedia has been included? □
   vi) non-book material has been included if appropriate? □
       e.g. videos, software, models.

5. i) Have I given enough information about assignment requirements? □
    e.g. is the question clear, has the length and format been explained?
   ii) Have I checked that there are resources available to complete the assignment?
       e.g. CD-ROM search conducted? □

6. Have I contacted Information Services to discuss reader education requirements? □

7. Have I contacted Information Services regarding any major changes to my course which are likely to impact on the Library? □

8. Have I allocated time to obtain feedback from students?
e.g. were resources available, accessible, appropriate, readable? □

9. Have I provided feedback to the Library staff? □

10. Have I obtained feedback from the Library staff? □
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Emotions and Feelings in Student-Centred Tutorials

ABSTRACT

This paper developed out of a 1993 National Teaching Development Grant which I used to run weekly sessions to improve the tutoring skills of relatively inexperienced tutors in the School of Social Sciences and Asian Languages at Curtin University of Technology. The focus of the paper is an analysis of how emotions and feelings can influence both the facilitation style of the tutor and the learning outcomes of the students in student-centred small group teaching. The paper also draws upon my experiences and the insights that I gained as a student in the unit Facilitation and Group Process Skills 563 run by Ms Christine Hogan of the Curtin Business School during Semester One, 1993. The paper will draw heavily upon the theoretical insights provided by John Heron (1989). In The Facilitator's Handbook Heron (1989: 12) focuses on personal development and interactive group skills and he attaches great importance in the affective domain (emotions and feelings) in group dynamics. Heron's theories and strategies for improving group learning are very relevant for university tutorials.

INTRODUCTION

The tutorial can be a very important way of learning in universities. Well run tutorials meet several important goals of higher education. Effective group discussion in tutorials:

- Develops analytical skills by enabling students to compare ideas and interpretations.
- Develops deep approaches to the processing of information.
- Develops the ability to work creatively with ideas.
- Develops skills in teamwork, co-operative learning and resolving differences and conflicts.
- Develops communication skills including presentation, listening and interpreting non-verbal behaviour.

The student-centred tutor aims to transfer responsibility to the group. Brandes and Ginnis (1990: 13-16) list some of the principles of student-centred group learning.

- The learner is valued.
- The learners accept responsibility for their own learning.
- Learners are involved in planning, organisation and evaluation of their courses.
- A safe, supporting learning, environment is provided.
- Learning involves feelings.
- Learners interact with other learners.
- Learning is improved by fun, humour, spontaneity, risk-taking and intuition.

In other words, the student-centred tutor becomes a facilitator of learning rather than the course specialist and authority.

However, regular surveys of staff and students at Curtin University, including the School of Social Sciences and Asian Languages, and overseas universities have identified major problems with group learning which results in poor learning outcomes. These problems include:

- The tutor turns the discussion into a lecture. In Heron's jargon he/she remains permanently in the hierarchical mode.
- The tutor talks too much, again in the hierarchical mode.
- Students are intimidated by an aggressive tutor.
- Students do not participate because they feel insecure.
- A student or group of students intimidate the tutor and/or the other students.
• Unresolved conflict destroys the security and trust of the group.
• Gender, class, cultural differences make it difficult for some students to contribute.

Tutorial groups often do not work either because the students do not have the skills necessary to learn effectively in groups or the tutor lacks the necessary group facilitation skills. Teaching small groups is a complex task requiring sound facilitation and leadership skills as well as a command of subject content, yet all too often the teaching is left to the least experienced teachers who are often senior students with little experience or training. Very often these tutors have to teach first year students whose group learning skills are the least developed. In addition, the feelings of the tutors and the students further complicate the facilitation and learning processes. For these reasons, the tutor often remains the teacher, instructor or trainer - the holder and transmitter of knowledge - rather than the facilitator of learning.

DISCUSSION

Heron's theoretical insights are a valuable heuristic for understanding the working of university tutorials. One of the underlying problems is that tutors often completely ignore or are ignorant of the emotional context. Heron (1989: 30) writes of the "alienation of intellect" by which a group which only pursues intellectual objectives can suffer alienation in which the members focus purely on the cognitive aspects and ignore the emotional. By pursuing only intellectual objectives, the group becomes emotionally dead. Individuals play roles in which they erect defensive barriers. There is, consequently, little interaction or free exchange of ideas which are so important for developing higher order learning skills. In fact, the university tutorials in many aspects epitomise the archetype of Heron's alienation of intellect in which personal and interpersonal skills are largely ignored (Heron 1989:30).

The emotionally dead group will be particularly strongly influenced by the anxieties of its participants (Heron 1989: 33). Tutor responses to the SAID process (Situation, Affective, Domain, Interpretation and Decisions) that I conducted with new tutors raised their anxieties. (See Appendix One.) Will I be liked by the group? Will the group accept my credentials and authority? Will I be able to control the group? What will happen if I can't answer a question or if I make a mistake?

These anxieties are all based on the very common feelings of fear, anxiety, confusion, loneliness, shyness, anger, embarrassment and humiliation. As humans, we all experience these feelings at times when we are moving out of our comfort zones into new learning experiences. Unfortunately in many university tutorials these feelings predominate particularly among some individual and cultural groups. Less frequent are the feelings associated with the joy of learning: being elated, excited, delighted, accepted, pleased and happy. While some negative feelings are perfectly normal in the group situation and in fact are inevitable if individuals and the group are to develop and grow, they will, if not acknowledged and confronted, have very harmful consequences for the group's dynamic and for the learning outcomes of individuals.

The complex role of feelings in the group dynamics is discussed by Johnson and Johnson (1991: 426-429). They maintain that it is essential that the facilitator assesses accurately his or her own feelings. They make the obvious, but important, point that a person's feelings are "great sources of information about what is happening within a group and what sorts of problems are occurring in the relationships among the members" (Johnson and Johnson: 426-427).

However, Johnson and Johnson (1989: 427) issue two warnings: feelings are subject of bias, distortion, and misunderstanding especially when the person is threatened, anxious or very tense. For example, one tutor spoke of how a group of very anxious first-year students felt that she was
angry with them because she did not smile. Their anxiety caused them to misread the tutor's non-verbal communication, interpreting concentration as hostility. Secondly, feelings can be a reflection of a facilitator's own fears and anxieties rather than what is actually taking place in the group. Being hypersensitive to one's own feelings can distort the tutor's perception of the students and severely limit his/her facilitation of learning.

Numerous studies, such as Tyson (1989:77), have shown how emotional overload, for example accumulated hostility, and emotional blocks resulting in defence mechanisms can severely distort communication. As Johnson and Johnson (1991: 426) point out, it is crucial to understand ourselves and the potential causes of our feelings.

We turn again to Heron for insights into how ignoring feelings can affect the dynamics of tutorials and the learning process. In particular, his statement that the group can become locked into a defensive mode, which can take one of three forms: either submission, or flight or attack (Heron 1989: 35), is particularly useful. Anybody with experience of running tutorials at university can relate to these modes.

In the submission mode students become passive and heavily dependent upon the tutor. In this state they are to a large extent, disempowered. They wait to be told what to do and do not develop independent learning and critical skills. They will not question or comment unless asked directly. The tutorials are strongly tutor rather than student centred.

In the flight mode, discussion is often about trivial matters. Real problems associated with learning are avoided. The tutorial discussion turns into anecdotes and a general sharing of experiences without a real effort being made to confront the analytical and other intellectual challenges. Students become adept at playing games such as getting the tutor to get on his/her hobby horse during which the group can relax. Griffiths and Partington (1992 Part 1:62) provide interesting examples of the types of games which students play to divert the tutor.

The third option is to attack. The tutor's authority and credibility are questioned. Alternatively a member of the tutorial group may ridicule the comments or suggestions of other members of the group. Older students returning the study are particularly likely to go on the attack, often because they suffer from what academics call Mature-Age Syndrome, which is characterised by excessive self-doubt, great insecurity and a compelling need to succeed.

Mature age students often try to dominate discussions particularly when the rest of the group are younger with more limited life experiences. The old student may also be likely to challenge the authority of the tutor who is a junior member of staff. He/she may also set either intentionally or subconsciously to destroy the positive group dynamic. A common tactic is to ridicule the contributions of others.

Of course the tutor also has feelings and may also adopt one of the submission, flight and attack modes. When submissive, the tutor refuses to confront intellectual and interpersonal problems. Very often he or she will give students good marks simply to avoid having to confront inadequate or inappropriate behaviour or performance. Such tutors are often desperate for approval and are very vulnerable to being exploited by pushy or aggressive students.

In the flight mode, the tutor may act in collusion with the group of students in turning the tutorial into a fun session - being one of the gang and spending much of the time talking about irrelevant issues, joking, and discussing personal issues. Often such a tutor is popular with students because he/she is a good performer who keeps the students amused although at the expense of the learning
process. Such tutorials often end up with everybody feeling well but with no worthwhile learning outcomes.

In the attack mode the tutor appears aloof, ultra critical and arrogant - the public stereotype of the academic. Often in the guise of academic rigour the tutor may intimidate or bully students. In such a mode the tutor feels safe using his/her power to keep control. Any poor learning outcomes can be attributed to lazy, stupid or unmotivated students. Although it is difficult to generalise, very often such a tutor is found in the so-called hard sciences.

The tutor in the attack mode may be totally insensitive to the feeling of the students and may in fact act in a manner that is professionally inappropriate - often offensive. One student that I interviewed recounted how her essay was returned with the comment "This is a load of bullshit." Tutors in the attack mode are often very insensitive to gender and cultural issues and resort to stereotyping: "Women are lazy thinkers." "Asian students cheat all the time." "Students these days are a bunch of lazy bludgers."

Identifying the negative impact of feelings is easy but doing something about confronting the issue and improving the quality of tutorials is much more difficult. University tutors very seldom receive any training in running groups. They are appointed and promoted on the basis of their academic credentials. Moreover, the heavy emphasis on content in most courses, which is a major cause of poor learning, means that the tutorial too often turns into a monologue by the tutor desperately trying to provide all the information. An overload curriculum means that the tutor is forced to remain permanently in a hierarchical mode. (See Ramsden 1992: 156-161 for a discussion of problems with tutorials and other small groups).

Because of the particularly sensitive nature of feelings, helping the tutor who has difficulty with feelings may be very difficult. Indeed, some tutors may require extensive therapy before they can be effective. Very often, for example, the tutor may be the victim of irrational ideas and beliefs. The tutor may hold the belief that if some members of the group disapprove, that he/she must be wrong or bad. Psychotherapist Albert Ellis (1975) recognised that often crippling power of irrational thinking asserting that emotions have nothing to do with actual events. Unrealistic self-talk, the product of irrational thinking, produces stressors that create anxiety, anger and depression which can severely limit the effectiveness of the tutor.

There are a wide range of strategies to help individuals cope with irrational thinking (Davis 1988: 90-118). Unfortunately, such individuals are usually not willing to seek help ironically because of their problem. This dilemma - those who need help the most are least likely to ask for it - is one that faces academic staff developers. In addition, reduced resources mean that tutorial groups are far too large and the physical environment not conducive to good group learning. For example, it is often difficult to generate good group dynamics in a formal classroom setting.

Despite the problems I believe, however, that it is possible to improve group learning and teaching. My work with the first year tutors in the Tutor Skills Project suggest that even with a small amount of training that tutors can rapidly improve their facilitation skills. In ten one-hour sessions we identified some simple strategies to improve group dynamics.

For example, the tutors now appreciate the need to create a comfortable, if challenging, environment in which the feelings of all - tutor and student - are acknowledged. One simple strategy they used was to get students to learn each other's names. By using simple icebreakers they were able to get rid of some of the excessive anxiety, fear and worry. A simple icebreaker is to get each student to tell the group how he/she got his/her name.
The weekly meetings of tutors also helped sensitise the tutors to the need to consider their own and their students' feelings. They now realise more clearly that good facilitation skills require that they confront their own fears and anxieties and make the effort not to project their own feelings or to use the tutorials to meet their own emotional needs. One tutor who had been experiencing considerable difficulties in relating to his group is now working on developing his eye contact to monitor how the group and individuals are behaving.

The tutors also found that the time spent laying down clear guidelines about tutor and student rights and responsibilities was very useful. The rules included taking turns when speaking, listening carefully, acknowledging positive contributions and criticising in a constructive fashion. Simply by identifying and articulating basic ground rules even those tutors who were inclined to be passive have found that they are comfortable with intervening when the rules are broken - usually unintentionally. There are now a number of useful manuals, such as Bertola and Murphy (1994), Radloff and Murphy (1993), Lublin (1987) and Habeshaw, Habeshaw and Gibbs (1988), that tutors can consult to help them structure their tutorials so as to reduce stress and anxiety.

An interesting strategy was the use of self-disclosure on the tutor's part. As Johnson (1990: 32) points out, healthy relationships are built on self-disclosure which creates trust and a bond between members of a group. Self-disclosure is particularly empowering when it is made by an authority figure such as a tutor. While self-disclosure has its dangers in that the tutor may be seen to be vulnerable or self-indulgent, the tutors' experience was that both they and the students established closer rapport once the tutor made clear that he/she shared many of the group's fears and anxieties. Students who know for example that even the most successful tutors at times suffer self-doubt can make them - especially timid students - feel better. The tutor who is able to discuss his/her problems in writing assignments, for example, can encourage the students to reflect upon and improve their writing.

Yet another strategy that worked very well was helping tutors develop their basic facilitation skills. For example, some of them experimented with breaking up their very large groups into small sub-groups and were delighted to find that not only did the students learn much better but they - the tutors - were much more relaxed and effective.

CONCLUSION

Perhaps the most effective long-term strategy to improve tutors' skills is to get staff to engage in action research into their own teaching, including monitoring and reflecting upon their own emotions. Action research is now being used as a tool for academic staff development in many universities (see Zuber-Skerritt 1992). Action research was central to the Tutor Skills Project and provided important insights and an improvement in tutoring skills.

In writing this paper, I of course have been engaged in action research myself. The process of researching, writing and reflecting upon the issues raised in this paper have enabled me to integrate facilitation theory, especially that of Heron, with practice. One consequence is that now I am more confident and feel more empowered to improve the quality of my own tutoring. I will also encourage other staff, both experienced and inexperienced, to reflect upon their tutoring, to try out different techniques, and to recognise the key role of feelings in creating a positive, healthy, learning environment for both tutor and student.
APPENDIX
SAID PROCESS

This questionnaire was completed by the Tutor Skills Project tutors after their first tutorial. We then analysed and discussed their responses.

A. Situation

1. What images do you recall during the first tutorial?
2. What people do you remember during the first tutorial?
3. What phrases or comment struck you?

B. Affective Domain

1. What emotions did you feel?
   Before the tutorial?
   During the tutorial?
   After the tutorial?
   Now?

C. Interpretation

1. What was the most important insight you obtained about teaching and learning from the tutorial that you ran?
2. What was the most important thing you learnt that you can apply in your next tutorial?

D. Decisions

1. What will you do differently in your next tutorial?
2. What one piece of advice would you give an inexperienced tutor?
REFERENCES

Bertola, P and Murphy, E (1994) *Tutoring in the Social Sciences and Humanities*. Bentley, Curtin University.


Radloff, A and Murphy, E (1993) *Teaching at University*. Bentley, Curtin University.


ABSTRACT

The author of this paper has taught English, Film, Media and Cultural Studies in a variety of institutions over the past 18 years. Over the past 6 years he has trained as Psychotherapist and Counsellor. The paper looks at how and where it is appropriate to work with student's feelings in education, particularly within the Humanities.

The paper suggests that the academic discourse is founded on judgement, and "getting it right"; which creates a learning environment of fear and inhibition in which students are encouraged to ignore, and devalue their own subjective, emotional responses. The paper argues that education ought to educate students intellectually about their feelings/emotions and that such education will be most effective when working "experientially" in such a way that students will both experience emotional states as well as understanding them. The paper looks at some practical examples and raises questions about the appropriateness, safety and boundaries of such work.

INTRODUCTION

I have taught in English, Media, Film and Cultural Studies for almost 20 years. Recently a central question has emerged for me: how much should I be working with students's feelings, intuitions and emotional response? Both their emotional responses to the subjects I'm teaching (films and TV are mostly designed to emotionally excite and stimulate viewers to laughter, tears, fear excitement, etc.) but also the emotional states that they are in regardless of the class content. What is appropriate in this area for 'good education'?

At issue here is the whole question of what education is about. In a review article of Cassandra Pybus's recent book on Sidney Orr, Jeffrey Minson notes the growing tendency of a "confessional" approach to teaching which rests upon blurring distinctions between the status and personal comportment of the teacher (and head of department) and those appropriate to relations of friendship or psychological counselling." Minson is aware of the dangers in this but my general argument supports such approaches. This makes sense to me if we choose to see education not as a simple site/institution/discourse of rational instruction and training but rather as one of healing - which aims to make people saner, and healthier (and in so doing recognizes the fact that most people have been hurt, damaged or abused in some areas of their lives, and that schools and education have in the past been one of the sites for this abuse.)

THE EDUCATION SYSTEM

The education system at present is based on certain fundamental structuring principles which are liable to have a detrimental and inhibiting effect upon students. The three aspects I want to foreground are: judgement, competition and getting it right.

The problem with judgement and judging things is that it is not just about seeing what works and what doesn't, what is effective and efficient; it carries moral overtones of good and bad, right and wrong, so that anything that is judged against is morally wanting and deserves condemnation. If
we are judged wrong we will feel bad about ourselves. A judging system tends towards intolerance. Judging as a way of approaching the world is commonly internalised so that we constantly make critical judgements on others and ourselves. Many people find themselves inadequate and 'beat up' on themselves. One of the great assets of counselling work is its non-judgemental aspect. (This does not necessarily mean approval of everything someone does, but it does not mean moral condemnation.) Furthermore judging systems tend to be too narrow, too black and white. They don't allow for the possibility of a range of truths, or different truths, nor do they encourage us to accept other positions, hear other people. The dominant discourse of education is too often arguing and conflict; making and proving your point against others. It is not about cooperation or finding consensus. A stress on objective truth also negates and devalues subjective truths. We have to recognize the existence of multiple truths.

Competition is also at the centre of the educational world. While judgement and competition may act as an incentive for some, for the majority they teach us that we are failures. It's about setting people against each other, creating hierarchies of success and failure. While one person wins everyone else loses, we are set to work against one another rather than cooperatively.

Competition and judgement lead to the need for "getting it right". But rather than encouraging people to be visibly active, the need to get it right is inhibiting. First it sets up great fears: anything which isn't right will be scorned. There must be just one right answer. In this situation the fear of getting it wrong and being consequently humiliated is likely to outweigh the rewards for getting it right; so the safest thing to do in class is to keep quiet and to deny a whole range of possible thoughts, ideas and feelings which we have learnt are unacceptable. It's best to play it safe by remaining invisible; only when you are 100% certain of having the right answer do you speak up. The major and tragic consequence of this is that it doesn't encourage exploration, lateral thinking or risk-taking which are essential parts of development.

There is one other educational element to note: the tendency to privilege intellect over emotion, the rational over intuition, the head over the heart. This tendency closes off many areas of perception, feeling, experience and understanding. Male western culture is very closed down to these areas. It is difficult for many of us to be in touch with what we are feeling at any one moment since we have learnt from an early age to hide, ignore or suppress our feelings. This is a terrible loss to our truths. Not looking at these areas means ignoring huge areas of human experience.

The results of this kind of education system, based on fear, failure and only some of our experiences, are debilitating: they close students down, they inhibit them, they block their energy. Every year new students arrive full of energy, life and expectation, with an eagerness to learn and every year, after about 4 months, we can see them beginning to close down, lose this energy as the system gets to them.

Such a system is going to bring up emotional responses so that students in class may feel timid or anxious and this of course will affect their learning processes. But more significantly, whatever we do as teachers, students are going to come to class in various emotional states, carrying their emotional/psychic baggage - depressed, bored, happy, angry, upset, etc. If this is not acknowledged, even just giving a space for clearing it, letting it go, it will inevitably affect the learning situation.

EXAMPLES

I want to explore this through a couple of practical examples. I first became aware of how students' emotional states influenced their learning when I started to listen carefully to class discussions and realized that often a student's comments on a film, novel or character in a TV
programme were a direct reflection of themselves. Their critical comments on something external were actually an expression of their own internal emotional state and their character. In talking about a film students were really talking about, describing themselves, though quite unconsciously. This was most obvious in the category of what I call my 'off the wall student'.

The 'off the wall student' may be bright but their perceptions and textual readings are often misreadings. The problem is that they bring their own emotional agendas, unconsciously, to whatever issue/film is up for discussion, producing quite aberrant readings. For example students who have been emotionally, physically or sexually abused and have not resolved this abuse are likely to bring this into their film readings. They may read any and every text in the light of their abuse. On occasion this will be productive for the class; for example someone who has been sexually abused will quickly notice the implications of sexual abuse in the films of Jane Campion. Their perceptions will draw other students' attention to these darker areas. But they may look at all film representations of sexual relationships through this light, always seeing sexual abuse and thus producing clear textual misreadings.

I taught a student a few years ago who was by no means an 'off the wall student'. We watched the film THE TIMES OF HARVEY MILK a documentary about the life and assassination of the first gay mayor in San Francisco. The student was very upset by the actual real film footage which showed his body after the assassination. This could have led the class into an interesting discussion on the issues of censorship and media representations of violence, but there was an emotional charge in her response which suggested something deeper was going on and that a rational discussion about the 'issues' would not be particularly productive. By allowing her time and space to stay with and explore her emotion she talked about the car accident she had been in with her father when she was 3 years old, in which he had been killed. Her reading of the film seemed to be determined by this: the sight of Harvey's body reminding her of the sight of her father's body. Harvey's death was forcing her to confront her own father's death which was too painful, which she wanted to hide and suppress; this led to her reading of the film as too graphically violent (an intellectual way of arguing against the film). Wanting the film not to show the body was about not wanting to face the painful memory. However through talking about her father's death and crying in the class, she was able to face and feel some of the grief and let it go. This was positive for her in its own right. But it was only this emotional clearing which allowed her to then see the film in a fresh light and realize that in the film's terms showing Harvey's body was a way of celebrating him and mourning his death. She was now able to understand the film intellectually, feel it emotionally and understand her own process of reading, or rather misreading the film. Without clearing the emotional process around her father's death she would have remained blocked to the film. It was a moment of healing, empowerment and intellectual progress for her.

The 'off the wall student' is at one end of the spectrum, but this other student reminds us that we all will have emotional issues we bring unconsciously to our work. We need to consciously put ourselves into the picture in study, to acknowledge how our own prejudices and predilections, our own unconsciousnesses affect our perceptions; and only through awareness and clearing of these will we be able to fully understand whatever we are looking at.

In teaching situations we will find ourselves confronted by a problem when dealing with these emotional issues in our students' perceptions. What do we do? Do we focus on the emotional issues which may take us into difficult areas and may not be appropriate to the subject at hand? Or do we ignore them, cover it up, pretend it's not happening and carry on with the film analysis? This is not an easy question because all too often we are not sufficiently trained in dealing with these issues nor is the education system one which takes account of them. Part of the answer lies in providing students with an 'education of the emotions'.

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AN EDUCATION OF THE EMOTIONS

All educational institutions need to take account of their students' (and teachers') emotional issues and provide structures and frameworks for dealing with them. There are 4 areas that I want to stress.

1. The first is to foster an educational climate and environment which both allows for and makes a safe space for emotional issues. This kind of environment would be very different from the one based on judgement, competition and getting it right. It would be non-judgemental, encouraging support rather than competition, and acknowledging the validity and significance of the emotional. A safe space would allow room for exploration when and if it felt appropriate.

2. An education of the emotions would recognize the centrality in education of the maxim 'Know Thyself'. Rather than always focusing outwards, so that we learn about things and the world outside ourselves, it is vital to educate people to understand themselves (and others) internally. Such a move towards self-knowledge and understanding could transform education.

3. To provide this we need an intellectual framework to explain and understand these processes, so we are developing a rational understanding of ourselves.

4. This intellectual framework needs to be balanced by experiential work and exercises which allow students to understand the processes fully; to understand their emotions from the inside, through experiences which are carefully and supportively presented to them.

I want to say more about these last two areas. In relation to an intellectual framework it means working at a psychological level using concepts and understandings developed through psychology, counselling and various forms of psychotherapy. (I don't think this means limiting this area to those students studying psychology; such understandings should be made across the curriculum to all students.) One of the simplest and most useful is to use a Gestalt framework. This argues that what we see in the world around us are reflections of ourselves: other people, films, everything we come into contact with, we understand and interpret through our own psyches. The world operates as a mirror so that when we look at someone we recognize certain character aspects and qualities which are part of ourselves (though we may not consciously own these). Suggesting such an approach to students of film is often a major revelation for them as they see that their readings and interpretations are in fact a reflection of their own characters. We have explored this suggesting people make a list of their favourite films and film scenes as a 'desert island' selection and then inviting them to look closely at these as a fascinating reflection and map of their own character. (The exercise can be done by anyone and is wonderfully illuminating.) Using such frameworks we can begin to understand concepts such as projection, transference, repression, and how these relate to our emotional lives.

In relation to experiential work I have been developing a range of exercises - some at quite a fun, superficial level, others which go much deeper. These involve getting students in touch with their emotional, intuitive responses, leaving behind any framework of intellectually 'right' answers, as well as working in a supportive safe group environment. So we have worked with a 'talking stick' which offers a space for people to speak their own truths and simply be heard by others; with drawing pictures and using these for further exploration; with visualisations; with dreamwork approaches to films. All this work allows students to go to a non-intellectual level and discover aspects of themselves which are often ignored or denied. They also often result in discussions.
which are much more significant because they are coming from students' real experiences and because they take place in a framework where people are prepared to listen to each other.

In some ways this kind of work is in the tradition of progressive Humanities work which used films, poems, stories, paintings, etc. as a stimulus for getting students in touch with their creative and expressive sides. What's different is going beyond self-expression to self-understanding; understanding of themselves and other people, of their emotional processes and their characters; working at both the emotional and intellectual level.

CONCLUSIONS

The question remains as to how appropriate this kind of work is in our current education system. It is potentially quite dangerous territory which some students may, rightly, not want to explore. It needs care, safety, trust, clear groundrules and teachers who know what they are doing. I can see many reasons for suggesting this is inappropriate for education; it is the work of the counsellor or some other specialist. However I do think it is appropriate for us to try to set up a system where such work is possible. First, my own experiences in reading and training as a counsellor and my observations of students have made me realize how many of them have been abused in some way and that these abuses will be affecting their learning potential. To ignore them is to collude in our students' underachieving. Second we have an educational duty, as teachers, scientists, explorers to explore all areas of human experience - as long as this is done safely and caringly. If we don't explore everything learning is a sham. The absence of work on the emotional, intuitive, right brain aspects of human culture needs to be corrected. Any subject which is interested in the processes of human communication, as in all the Humanities and Social Sciences, must engage in these aspects.

Not to deal with and face deep emotional issues is to encourage them to remain buried and hidden. Crucially this kind of work is seen as problematic in education because as a culture we still tend to ignore and hide our emotions. But not dealing with them won't make them go away.

A healthy culture needs to explore these issues - in lots of arenas. Individuals' and societies' outward actions are closely linked to their inner psyches. What happens in the outside world are reflections and projections of our inner, often hidden, states. Becoming conscious of our hidden 'shadow' side, to use Jung's term, will begin to take away its power. Though the women's movement and some cultures have prioritised this inner world, Western male culture has not. If we seriously wish to understand social issues of conflict, war, oppression, inequality and the environment and contribute to positive change we need to be able to focus inwardly as well as outwardly, to start educating people, and ourselves, to handle our emotional and psychic baggage in experiential as well as more abstract social and ideological terms.

Educationally as we move towards the new millenium we face many challenges: the challenge of how to acknowledge and deal with emotional issues will be central. I hope through this paper to have contributed to what will be a continuing debate and the changes which can be made.

FOOTNOTE

1 Jeffrey Minson 'Pastoral shades: Sidney Orr and the eroticisation of teaching' in The Australian Universities Review, Vol 36, 1993, No 2, NTEU.
Writing is recognised as an important but perhaps the most neglected skill requiring attention and improvement at tertiary level. Writing is also central to structuring, organising and understanding a subject. Writing can also bring the past under present consideration, and help to anticipate the future. Reflective writing allows the development of a self-critical approach to one's knowledge, and a functional understanding of a discipline.

Making writing personal in the form of a journal allows for self-reflection which brings the detailed specialised knowledge and contextual concerns of the discipline within the personal world view, or personal paradigm, of the individual. This paper outlines the usefulness of journal writing assignments, and their use in a unit on interpersonal communication and behaviour management.

**WRITING IS AN ESSENTIAL SKILL AT ANY LEVEL OF ACHIEVEMENT**

Since writing is central to all learning, the tertiary teacher has to take responsibility for improving writing. Without careful nurturing of writing skills, achievement in a course will be adversely affected (Nightingale, 1986). Davis (1993) provides a range of arguments, and a whole assemblage of tactics to promote writing across the curriculum. Among the best arguments supporting writing across the curriculum are those by Fulwiler (1987), and Zinsser (1988). Their arguments are summarised by Weinberg (1993). Moore (1993) provides empirical evidence for the benefits of supporting writing in biology, and Selfe, Petersen & Nahrgang (1986) does the same for mathematics.

Some academics argue that students should come from school with established writing skills at a level sufficient to serve them throughout their study at university, and even beyond graduation. This is an unreasonable expectation in that it assumes writing skill development to be complete by the end of the school years, would need no further nurturing, and would perhaps be impervious to further instruction. An underlying implication is that writing skill, sufficient for year 12, would need no improvement to cope with years 13, 14 and 15, ie for the achievement of a first degree; and would last into years 16-20 etc through higher degree levels. It appears that we are faced with a set of beliefs which treat writing the same way that IQ was thought about all those years ago ie. as though fixed by the age of 16 when it became a constant, only to decay steadily through adulthood.

In contrast to this view we have to accept that writing (like IQ) can be improved with training and practice at any age, and we should certainly expect writing skills to continue to be developed throughout a student's career at university. Even if schools have done their job well, we at university still have a duty to promote student writing. And if schools fail in their duty to advance the literacy of pupils, should we compound this fault when their pupils become our students? Obviously not, but then this is not the only consideration. It is important to decide who should be responsible for the literacy of students who come to university to enrol in a particular course, committing themselves to a particular profession, a preferred discipline. It is not the general improvement in literacy that they need, but the development of specialised skills planned and taught by professionals in a particular discipline.
Thus a most important question concerns the special requirements for literacy within each particular discipline. Skill development has to be promoted separately within every discipline: students may write well in one subject in which they may have reached a high standard of knowledge, practical skill, and literacy; and appallingly badly in another that they may have just started, or have been studying for some time. And where writing courses are run by English or specialised writing units, for example, complaints about the poor standard of writing of students completing such courses would seem strange or incomprehensible to staff in these units, since the standard of performance achieved and assessed within the unit could be excellent, while it remains rudimentary where the requirement is to write in the context of their specialised discipline.

The reason for the disparity of writing skill between disciplines becomes obvious when one considers the nature of expertise within a discipline. Adopting a Kuhnian perspective may make the matter clear. Each discipline has a separate and different culture that must be respected if one hopes to promote suitable professional development and behaviour in that discipline. This requires learning the detailed language appropriate to that discipline, and learning to use it appropriately in context. Unfortunately, many of those teaching at university do not accept that it is their role to introduce students to the culture of their discipline, as well as to its content. How often are intelligent students considered illiterate within a particular discipline only because they have not been provided with the opportunity to practise their writing (and oral) skills within a context appropriate to the specialised knowledge requirements of that discipline? We may never know how much such beliefs among some staff have denied students appropriate educational assistance. What we do know is that to achieve contextual appropriateness requires a reflective process. Self-reflection may be a good way of enhancing reflective understanding, and students may be in the best position to help themselves to learn. All we have to do is to arrange learning situations in which they can do this.

Unless students are able to take into their own world-view the detailed contextual concerns of the discipline, they will forever be treating the material as more guff to be remembered for future regurgitation, until the unpleasant forced feeding ceases. Perhaps what we are offering many students is a "bulimic" education - with massed groups of students cramming in as much as possible, and then performing regurgitation, in concert, in examination rooms throughout whole university systems. Fostering the cultural milieu appropriate to the particular discipline being taught would prevent learning pathologies such as these from developing in the first place. But such acculturation is a difficult process to organise. We are lucky that children are flexible just at the time when they need to be able to survive primary socialisation. They are highly active at this time, allowing them to practise skills often, and in a variety of settings. To do the same for students would require a strongly supportive environment within which appropriate theoretical and practical skills can be nurtured, and where activity levels could be maintained at a high level. Although difficult to achieve, it is possible to target activities to support appropriate skills. Any priority listing of critical skills would place writing at or near the top since writing competence is basic to the effective functioning of most professionals. In considering how writing may be made an active part of the learning and instructional process it is important to consider introducing tasks or assignments that turn students into producers and consumers of their product whilst also maintaining their role as part of the academic community.

Encouraging writing has a number of consequences. It helps students to recognise their existing knowledge and understanding of a subject, allows them to monitor their ongoing learning, clarifies their thinking about a topic, and teaches them to structure their ideas in text form to suit a particular audience. In doing this they provide feedback both to themselves to their peers, and to their instructor.
All of these functions are important so that we have to ask why writing assignments are not more extensively used in all classes. The reasons are easily found in the variety of pressures preventing more writing assignments being set.

OBSTACLES TO USING WRITING ASSIGNMENTS

The most frequently voiced objection to using writing assignments is the lack of time, and the marking load resulting from such assignments. Instead there is increasing reliance upon "objective" testing. At the same time there tends to be recognition that writing is important so that there will still be at least one major writing assignment left in the assessment process. With no component writing skills being addressed in the unit, and beliefs about writing ability being impervious to instruction or practice, such an assignment is unlikely to serve its purpose either as a learning or an assessment device. The result is a failure to recognise the potential of the student to make a contribution to the process of writing and assessment, and will also lead to student resistance, to heightened writing anxieties, and writing blocks, and an even greater reliance upon "objective" testing.

OVERCOMING THE OBSTACLES

It is possible to overcome obstacles to writing by using short writing activities as an integral part of a unit. Such activities should involve peers in the process having them reading, and reflecting upon their own and another's pieces. Writing may be done in lectures using the think-write-pair-share procedure, or any of a range of other tactics. Linking writing to reflective understanding, involving peers, providing a range of writing activities, recognising that only a very few of the writing products need to be assessed, although many can benefit from peer feedback. Or one can use minimal marking (Haswell, 1983) which results in efficient error detection and correction by students.

Fulwiler (1986b) argues for changing staff attitudes towards writing, and shows how it may be done, and Davis (1993) describes a range of alternative activities that may be used. Unfortunately many academics in considering how to improve writing in their discipline imagine that some outside expert is needed to present a one off "how to" workshop for students. Such means have been shown to be quite good for producing a warm inner glow in participants, but the actual influence on writing is negligible. The reason is obvious: it is the instructor who needs training workshops in order to become able to support the particular specialised writing requirements of their own discipline to students. Samson and Radloff (1992) have recognised this in their text to help students by helping staff with a format to use in teaching the procedural knowledge required for effective writing. Perhaps these approaches succeed to the extent that they are able to reduce the anxieties of staff and of students about writing, to encourage a range of different forms, increase the number of items, and in the process also change attitudes towards writing (Fulwiler, 1986b).

There are many ways in which writing can be managed. For a list of possible writing activities see Davis (1993) who includes and has sensible things to say about many writing activities. Perhaps the most versatile of any of these is journalling.

Keeping a journal is a writing activity which has particular value for coordinating one's thinking, and also in managing time over short, as well as long periods. There are disadvantages, however. Allport (1942) noted that journals are subjective (so that entries cannot be verified) and depend upon the transitoriness of memory. But even invented entries have a subjective reality. Any
reconstruction of past events may be only slightly less fanciful than pure fabrication, and each
would have a useful place in the fuller development of the individual. The skill development that
follows from practice also makes the role of the journal much clearer over time.

One advantage of a journal is that it is the immediate narrative record of ongoing experience.
Notes or comments made some time after an event are reconstructions and subject to distortion.
Perhaps the chief advantage is that journalling is one of the key activities required by many
professions. Despite this central role played by such records, however, there do not appear to be
any systematic attempts to teach such record keeping to students.

JOURNAL WRITING

Journal writing is a highly flexible activity which can be adapted to serve any of a range of
functions. Many professions involve the use of records, some of which have legal status such as
minutes of meetings, ships logs, police diaries, and accountants' balance sheets or audit records.
Keeping a journal, although it is central to many important professional functions is, however, not
part of the structure of many units or courses.

Keeping a journal involves personal autobiographical reflective writing. This can be made highly
task relevant, and can vary with the discipline concerned. It involves writers recognising their
current knowledge about a subject, and traps time since once an entry has been made, this can be
returned to later. It can also reflect a student's current perspective about the future. Looking over
past records immerses the writer in a reflective process which depends upon movement in time to
yield important information about changes, and changing conceptions which have been reached in
the course of the writing. In a very real sense a journal is a time machine, designed to manage time
since it represents all time, past as well as future. Such writing and reflection, with peer group
writing and reading and discussion can powerfully influence the depth of engagement with a
subject, as well as the degree of commitment towards mastery. The journal thus provides a
cumulative record of the development of ideas and of personal growth. It encourages writing and
rewriting, increases overall writing output, can often have a therapeutic effect with students
gaining relevant and important insights about their academic and personal life, and it does all of
this while encouraging appropriate professional behaviour. Given the many advantages of
journalling this form of writing assignment is becoming increasingly popular.

AN EXAMPLE OF JOURNAL USE

The use of student journals has been developed over a number of years in Behavioural Science
units. One such is Behavioural Science 366, a unit in the post-registration programme in the
School of Nursing at Curtin University. The unit deals with the skills of interpersonal
communication, and the application of behaviour management strategies in a health context. All
units in the degree are offered internally, as well as by distance education (external study). Having
to adapt the unit for external study forced serious consideration of the way in which the subject had
been taught, and how a unit which included much group and clinical type skill training could be
managed effectively in the external mode. Such considerations led to the adoption of a journal as a
major vehicle to carry the activities and assignments comprising the unit, with self-direction and
self-management as the main focus. The textbook for this unit, Watson and Tharp (1992), now in
its 6th edition, is structured around self-direction and behaviour management, and supports
journalling.

The journal involved both narrative recording, as well as the use of structured activities set around
critical personal events, and the use of charting to follow the course of selected measurement of
subjective and objective states associated with these events, following the usual antecedents, behaviours and consequences format used in cognitive-behaviour management clinical procedures.

There are twelve activities built into the unit, and made a part of journal writing. Only three of these activities are assessed, thus reducing the marking load. Assessment was based on a marking guide consisting of a set of criteria and weightings. Students were required to self-assess using this guide before submitting each assignment. There is also a final examination.

Although students rate the workload for this unit as somewhat higher than the average, feedback has been generally quite favourable, with some of the activities receiving high ratings. A number of students have also reported that the unit has led to considerable change, and empowerment in both their personal and their professional lives. The intention was always to teach skill development through self-management. The improvement and learning that has resulted reminds one that collaborative learning, now much in favour, is primarily a process involving the I-Me relationship. Provided one can conduct a dialogue with oneself, collaboration follows. Yet how many instructors inadvertently, or deliberately, discourage what they see as incestuous self concern. It is more acceptable to encourage such procedures when they are tied to an obviously valuable product such as a journal.

Using journals with students is made easier if one adheres to some simple principles. One should start with short in-class activities, and use peer groups for feedback and motivation. These can be built upon to lead to journalling. Brief in-class writing sessions can continue, until students are doing many of the components of journal writing in and out of class. It helps if instructors model journal use, and keep a journal themselves. This is also quite valuable, especially if it is built around the management of the unit.

Journal writing is a versatile method of introducing writing into a unit. It can help to develop student writing skills, reduce anxiety about writing and provide opportunities for students to work collaboratively in learning tasks. Most importantly, journal writing provides students with a context in which they can become more reflective about their learning experiences and begin to develop a professional approach to their discipline.

REFERENCES


SELF-DIRECTED LEARNING IN A POSTGRADUATE UNIT IN SCIENCE AND MATHEMATICS EDUCATION

ABSTRACT

This paper describes and evaluates self-directed learning in a postgraduate unit in pedagogical content knowledge for teachers of science and mathematics. The unit is collaboratively designed and implemented and based on the premise that teachers, as students, can take as much responsibility as the tutor for setting the goals of the unit, planning the learning activities and assessing their achievement. The paper describes the rationale underlying the unit, outlines its structure and summarises the findings of a formal, participatory evaluation of the unit. The evaluation focused on questions including: Did the unit contribute to the students' growth as learners? Did the unit contribute to the students' growth as professionals? Did the unit work? The results indicate that the elements contributing to the unit's continued effectiveness relate to the success of the collaborative design, the opportunity for teachers to practise the skills of self-directed learning, and the cooperative and supportive learning environment which results.

This paper is concerned with self-directed learning in a postgraduate unit for teachers of science and mathematics. Science/Mathematics Education 501 (Foundations and Issues) is a semester-length unit in pedagogical content knowledge which forms part of a postgraduate diploma qualification for experienced teachers. The students are usually practicing teachers who study part-time for two years to complete the course requirements. The unit is based on Science Education 501 which was developed and first taught by Dr David Boud in 1976. Its significant feature is that it is designed, taught and assessed collaboratively by staff and students, in contrast to the usual tertiary courses where staff are responsible for the content, teaching and assessment and the students are relatively passive participants. Since 1976 the unit has operated in much the same way, although it has been coordinated by several different staff. The class size has varied between four (in the first year) and about 25 students.

Since its inauguration, the unit has been regarded as very successful, based on informal indicators such as positive student reaction and the very low (often zero) dropout rate. In 1991, a formal, participatory evaluation of SME 501 was undertaken by the author, the faculty member responsible for the unit (Rennie, 1992). The evaluation focused on questions including: Did the unit contribute to the students' growth as learners? Did the unit contribute to the students' growth as professionals? Did the unit work? This paper describes the rationale underlying the unit, outlines its structure and summarises the findings of the evaluation.

RATIONALE FOR SCIENCE/MATHEMATICS EDUCATION 501

In the wider context of the Postgraduate Diploma, Science/Mathematics Education 501 has the following aims:

- to develop an awareness of the context in which science and mathematics education takes place and the range of constraints and opportunities that exist on research and development in this field;
• to assist students to respond creatively to the changes that take place within the educational system;
• to assist students to develop the personal skills required to continue their professional development outside the institution;
• to provide the foundation for students to develop basic skills in the field of science and mathematics education so that they may be able to initiate and undertake research and development within their own teaching situation;
• to familiarise students with the current literature in science and mathematics education.

These aims are pursued as much by the style and approach of the unit as by the specific subject matter included. The development of the original unit and an account of its first offering is presented by Boud and one of the unit's first students, Michael Prosser (Boud & Prosser, 1980). They describe how Boud based the development of his collaborative unit on two premises: an espoused theory about the nature of an educated person, and the principle of parity between staff and students in the conduct of a unit for postgraduate students. The first premise assumes that educated persons who operate as full professionals in any area of activity have the following characteristics:

They are self-directing and self-motivating: that is, they are able to specify clear goals for their activities, they can design a program of learning activities drawing upon all the necessary resources to pursue their goals, and they are able to evaluate their performance of the tasks they have established and judge the extent to which their goals have been met. Such people do not act in isolation but can draw upon the resources they need wherever they may be found both within and outside educational institutions. (Boud & Prosser, 1980, p. 27)

Acceptance of this premise requires the provision of learning opportunities and a social environment in which students can be assisted to achieve the skills of self-directed learning. Such a unit cannot be one in which the tutor unilaterally determines the goals, content, teaching methods and assessment procedures, rather, the teachers and students must collaborate to create a mutually designed unit. Boud and Prosser (1980) draw attention to parallels between their definition of the educated person and the concept of the self-directed learner espoused by Knowles. According to Knowles (1975, p.18), in self-directed learning individuals or groups "take the initiative in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing learning strategies, and evaluating learning outcomes". When undertaken by a group, this concept of self-directed learning describes how a collaboratively designed unit operates.

The second premise concerns parity between tutor and students. It is based on the principles of equality of consideration, that is, the needs and interests, skills and resources which each person brings to the community are equally worthy of consideration, and equality of opportunity, that is, any person can contribute or intervene at any time she/he judges appropriate. Importantly, these principles do not assign equal value to each person's needs, skills and contributions, rather, they state that equal attention must be given to the consideration of the needs and judgements of each person. From this comes what Boud and Prosser called 'a ground rule', "that anyone, staff or student, can intervene at any time if they feel their needs and interests are not being met" (Boud & Prosser, 1980, p. 26).

Acceptance of a rationale such as this has two implications: First, the tutor must believe, unreservedly, that students can act as self-directed, independent learners who are able to define their own goals, design their own program and assess their own achievements. If in doubt, the tutor is likely to begin to impose his/her own needs and interests on the students. Second, Boud and
Prosser (1980, p.27) suggest that, other things equal, high expectations of students on the part of the tutor will make for higher achievement. Thus the tutor must not only believe students can be responsible for their learning, she/he must expect them to do it effectively. Consequently, the unit must be structured to allow students to grow as self-directed learners and as professionals in their field.

STRUCTURE OF THE UNIT

The SME 501 unit has four-hour evening sessions each week of the 15-week semester. The activities during the 15 weeks are of three kinds: those concerned with initial planning and unit design; the ongoing planning and analysis of progress as the unit is implemented; and the concluding activities of assessment and evaluation.

INITIAL PLANNING AND UNIT DESIGN

Students are welcomed prior to attendance at the first class session by a letter which includes a statement of the aims for SME 501 and describes the unit as participative and collaborative. The letter also asks students to consider their reasons for enrolling in the unit and requests that they write out at least four personal goals, in rank order, that they hope to achieve in the unit.

At the first session, after introductions, the tutor describes the rationale underlying the unit and its implications for how the unit would be designed and the group would operate. Students are invited to question, and consider whether they wish to accept, the rationale. Students have always accepted the rationale, and the group then begins the task of goal setting for the unit. Individuals take turns in presenting their goals, which are then sorted into categories (for example, by topic or kind of skill) and each category examined for clarity of meaning and suitability for inclusion in the unit (in terms of available resources, prerequisite knowledge, and so on). If necessary, the number of goals is pruned according to the group's ranking of importance. As an example, in 1991, students' personal goals were pooled and clarified into a series of questions grouped into these categories: assessment for grading, assessment for diagnosis of students' learning, easing the transition between junior and senior high school, teaching low ability students, increasing the relevance of science and mathematics curricula, literacy in mathematics, developing problem-solving skills, increasing student motivation, and improving own educational knowledge.

All decisions about the acceptance or otherwise of goals are made by consensus. As Boud and Prosser (1980, p.28) emphasise, during the discussion of the goals (and indeed during the entire unit) "all participants are expected and encouraged to make their views known and have them heard by the rest of the group. The views of an individual are not always accepted but it is important that each person feels that his/her opinion has been recognised by the group. "In this way, the principles of parity are observed: the needs and interests of each person are equally considered, and each person has opportunity to contribute to the decisions finally made.

Attention is now turned to how the goals will be achieved. Subgroups are formed to take responsibility for particular goal categories. They meet together, or with the tutor, to discuss unit content, plan the learning activities, draw upon available resources (both material and human, within and outside of the group) and ensure that their plans are coherent with the overall program and match the identified goals. The planning subgroups may need to meet again or consult with the whole group to assist and direct their activities. Their planning culminates in the implementation of the learning tasks they have prepared to achieve the goals. This might take the form, for example, of a lecture and discussion involving a visiting expert, class activities led by group members or an out-of-class visit. The group as a whole ensures the coordination of efforts...
during the ongoing process analysis (see below), and the tutor simply becomes a member of one of the subgroups and plays a similar role to the students.

**Ongoing Activities**

Planning does not finish during the first session because in a collaborative, group-designed unit, it is necessary that the group continually checks to ensure that the unit is progressing and remains on track to achieve the chosen goals. Each week the first 30 minutes is set aside for this purpose, a segment called the process analysis. The remaining time includes two 90-minute sessions separated by a 30-minute meal break.

The process analysis serves three purposes. First, the class considers the previous session and evaluates it in terms of its achievement of the unit goals. This is assisted by the process commentary – a summary of what went on and important outcomes. This is prepared by one student on a rotated basis so that every participant has a record of what occurred, but only one person needs to keep notes. Second, the process analysis enables overall progress to be assessed, the rethinking or reformulation of goals, if necessary, and allows the planning subgroups to consult with the whole group. Third, the process analysis has a group-building function, as all members are encouraged to raise concerns or issues which require consideration or resolution. In essence, the process analysis is a continuous, formative evaluation and as a result, the learning process is highly self-correcting. As Boud and Prosser (1980) note, the tutor needs to facilitate this section early in the unit (and also prepare the first process commentary) but this need is diminished as group members gain confidence.

It usually takes three or four weeks before the program of learning activities planned by the students are in place, thus, in the early weeks three activities are organised by the tutor. One is a library visit to familiarise students with the resources available there, including computerised search procedures which were not available when many students last undertook studies. Another is a session on small group instructional strategies organised by the tutor as a cooperative learning exercise, with small groups learning a particular strategy and then teaching it to the whole group. The third is an analysis of recent educational reports prepared by government or other authorities. Each student is given a copy of a different report and prepares a short class presentation on the report's implications. This activity was initiated partly in response to a recurring personal goal of the students to increase their awareness of what was happening in education beyond their own school.

**Concluding Activities**

The final session is devoted to student assessment and unit evaluation. To fulfil institutional requirements each student must be given a numerical grade, but the collaborative nature of the unit requires that the group, rather than the tutor, be responsible for student assessment. In recent years, students have decided that they wished to be assessed as a group and to receive the same grade. During the final two or three weeks, they engage in a process of self-assessment, and in the final session, discuss their achievements and negotiate among themselves what grade they think is appropriate. It is usual to find that the grade decided by the students is realistic.

Peer assessment has played a varying role in student assessment over the years. Sometimes participants have rated each other in a formal (usually anonymous) way, but students are often reluctant to assign ratings. Although offered as an option, peer assessment has not been an explicit part of the assessment for several years. However, because of the group's cohesiveness and their willingness to discuss successes or otherwise as the unit progresses, peer assessment plays an ongoing but unobtrusive role in students' assessment of their own performance.
The unit evaluation, in part, is a consequence of the process of self-assessment. If students have set their own goals, the extent to which they have been able to achieve them is also a measure of the success of the unit. The unit rationale and its implementation are discussed with the advantage of hindsight and such discussion is always of value to the tutor. Overall, the unit has been rated very positively by students and consequently the rationale has remained unchanged. It is an outcome of the rationale that the specific goals, and hence the content, change each year, according to the needs and interests of the current student group, and so the unit is able to remain relevant and up-to-date.

EVALUATION OF THE UNIT

Focus of the Evaluation
The design of the evaluation of SME 501 took into account two important features. First, SME 501 is an established, ongoing unit, so elements of both formative and summative evaluation were included. Summative evaluation was strengthened by the opportunity that existed to collect data from former students who could reflect on their experiences with the benefit of hindsight and thus consider the unit in a broader context. Second, rather than being carried out by an impartial outsider, the evaluation was prompted and carried out by the author who, as the current tutor in the unit, was clearly a "stakeholder" in the outcome. Consequently, the evaluation model was that described by Shapiro (1988) as participatory evaluation, which recognises the difficulty inherent in attempting to maintain the facade of an objective outsider and acknowledges the intrinsic subjectivity. Participatory evaluation is interactive in its approach, uses both qualitative and quantitative methodologies and is appropriate for the assessment of projects where interaction between the participants and the evaluator is expected (Shapiro, 1988).

The criteria for evaluation concern both the process and impact of the SME 501 unit. Because the specific content and learning activities change annually, they are not necessarily a relevant focus. Instead, the central questions of importance are about the rationale of the unit and how it was structured to enable students to grow as self-directed learners and as professionals in their field. The means to achieve this end were to involve students collaboratively in the planning, delivery and assessment of the unit so they would have opportunity to practise the skills of self-directed learning in areas relevant to their profession. Four questions guided the evaluation:

1. Were the students involved in the planning, implementation and assessment of the course? Specifically, how involved were students in planning and implementing the course? Were students' ideas and opinions valued? Did students have control over their assessment?
2. Did the course contribute to the students' growth as learners? Specifically, were students given responsibility for their own learning? Did they gain confidence in themselves as learners? Did the course enhance students' ability to think about and reflect on their learning? Did the course give students opportunities to work with, and learn from, others?
3. Did the course contribute to the students' growth as professionals? Specifically, was the course relevant to their work as teachers? Were students motivated to do further study? Did the course enhance students' feelings of professionalism?
4. Did the course work? Specifically, did students react positively to the course? How do students describe their reactions to the course? Did they enjoy it?

Data Collection
The evaluation was carried out using data collected from three sources. First, the participants in the 1991 unit, including the tutor, provided journals, other written material prepared as part of the unit, and their reflective notes made for self-assessment. Additionally, data were obtained from an independent report of interviews with the 1991 participants conducted by a visiting professor.
Second, the tutor's files of unit documents were available for the years 1988 through 1991. These recorded material relating to the development of goals, the content and materials used in each session, process commentaries made for each week, and the tutor's summative notes made at the final assessment and evaluation session each year. Third, a questionnaire was mailed to past students who had completed SME 501 since 1980. Of this group of approximately 100, 38 questionnaires were returned from the 66 students for whom addresses were available. Assuming that the remaining 28 questionnaires were correctly delivered, the response rate is 58%. However, the sample may not be representative because those who did respond may be those who remembered positive rather than negative experiences. The questionnaire was designed according to the questions which guided the evaluation and to provide opportunity for respondents to comment on any aspect they wished. Its development is described fully in the major report of the project (Rennie, 1992).

RESULTS

The results are summarised under four headings corresponding to the questions used to guide the evaluation. Because no evidence was found suggesting that responses varied according to the year in which the class was taken, interpretations of data from the written materials and interviews from the 1991 class are combined with findings from the questionnaire. Full data are available in the project report (Rennie, 1992).

Student Involvement in Unit Design and Implementation

The questionnaire results indicated that respondents felt more involved in the design and implementation of SME 501 than in previous postgraduate units, and the majority of comments indicated that such involvement recognised students' needs and gave them responsibility. Thirty five of the 36 respondents found the value given to their ideas was a positive experience, reporting that this made them feel respected and valued. Most of the respondents reported the self assessment component to be challenging, but giving them more control and making them look at what they had achieved.

Students' Growth as Learners

Responses to this issue were very positive. The unit is remembered as placing considerable responsibility on students to learn and two thirds of the respondents indicated that SME 501 allowed them to develop more confidence as learners than did other units. Respondents unanimously reported that they gained benefit from discussion with other students in this unit and the advantages of learning in a cooperative way were invariably a focus during discussions at final sessions relating to assessment and unit evaluation. In the words of one student: "It showed me I could learn by myself if I tried."

Students' Growth as Professionals

Students were asked to comment on the relevance of SME 501 to them, their learning and motivation to do further study and their feeling of professionalism. Of what they had learned in the unit, students most valued their broadened perspective of science/mathematics education. Other comments related to the outcomes of the cooperative learning approach used in the unit, the beneficial experience of working with others and improved communication skills. SME 501 had a positive effect on students' motivation to do further study and this was often discussed in assessment sessions as an unexpected outcome of the unit. As one student wrote "For the first time I had direct input into what I, personally, wanted to learn. This definitely gave me a positive attitude toward further study." In response to a general question about professionalism, 35 students made positive comments and three reported little change.
Did the Unit Work?

The results reported so far are mainly derived from students' summative reflections about the unit and they combine to suggest that the unit is remarkably successful. However, in order to focus on the process of the collaborative design and implementation, students were asked to describe their feelings two to three weeks into the unit and also after 10 to 12 weeks. In all, 39 different adjectives were used by respondents to describe their early feelings, about half reflected a questioning attitude and half reflected stimulation or motivation. However, all of the 37 different adjectives used to describe feelings near the end of the unit were positive, suggesting that the positive response to the unit evolved from somewhat ambivalent feelings at the beginning.

Clarification of this evolution of feelings comes from the contemporary records made in journals, the reflective analyses of the 1991 class in their interviews, and notes made about the discussions in the final unit sessions. Taking responsibility for the design of their own unit was a new experience for students and while some found it challenging, others floundered. In recognition of students' initial discomfort, tutors had introduced the practice of requiring each student to prepare a short class presentation about the implications of a different education report. Students reported that they not only enjoyed the insights obtained by this task but that this practice had provided some stability while the planning for the achievement of the groups' other goals took shape.

The final part of the questionnaire asked students what three things were most worthwhile in SME 501 and what should be changed. The latter question induced little response, aside from several requests for more staff support during the early planning stages. These respondents all took the unit before 1986, so it may be that the introduction of the task to review educational reports has alleviated this concern. The perceived value of the unit was encapsulated by students' responses to the former question. Overwhelmingly, students stated that they were dealing with their own and current issues (20 comments), and that they were always interacting, as part of a group or networking with other teachers (24 comments). Other comments all referred to aspects of the collaborative presentation. As one respondent put it: "working with others, learning with others, thinking with others." This pattern of response is strongly supported by the written documents, the self-assessment discussions and the 1991 students' interviews.

DISCUSSION

There seems little doubt that the unit has been successful, and the data supporting this conclusion point to at least three reasons why the unit works. First, because it is collaboratively planned and implemented, the students quickly become committed to the unit. Everyone has at least one of their personal goals included, so the value of everyone's interests and contributions is immediately recognised. Further, because the content and activities are chosen by the students, the unit is always dealing with issues current to teachers, and thus stays up-to-date. The employment of resources outside of the group also generates a forward, rather than a retrospective, approach to teachers' concerns and problems.

Second, in the SME 501 class, teachers, as students, learn by exploring abstract issues in science and mathematics education by obtaining and pooling information, sharing ideas, comparing points of view, challenging inconsistencies, testing alternative ways of thinking, changing their minds sometimes, but at least opening their minds to other conceptions of the issues. By collaboratively designing the unit around teachers' own goals, its personal relevance is assured and participants are prepared to grapple cognitively with the content which results. No less important is the requirement that participants be involved in assessing their own learning.

Third, participants report a strong feeling of a "community of learning", rather than a teacher versus student atmosphere. The non-threatening environment, the feeling that "your ideas are
listened to", and that "others' views are respected, even if you disagree", are important successful aspects uncovered by the evaluation. The interaction which occurs between participants as they work together in planning, and in class sessions, particularly during the process analysis, ensures that the supportive environment is maintained.

In the opening Keynote Address at the 1994 Teaching and Learning Forum (Nightingale & O'Neil, 1994), Mike O'Neil listed the five conditions for "high quality learning" to occur: the learner is ready, has a reason for learning, explicitly relates previous knowledge to new, is active during the learning, and the environment offers adequate support for the learner. All of these conditions are implicit in the way the SME 501 operates. Its success is a result of the underlying rationale of the collaborative unit design, implementation and assessment. The effective goal setting and accomplishment occurring consistently over the years in this unit can be attributed in no small way to the fact that the participants were teachers who were experienced enough to begin to understand what they didn't know. In addition, the continuous evaluation of the unit through the process analysis was able to keep the unit on track for goal achievement, providing an additional measure of reinforcement to participants already motivated by their central involvement.

The role of the tutor is another factor to be considered. Unlike most staff-designed units, the tutor doesn't need to rely solely on his or her own resources and doesn't need to "know everything" the class might wish to include. An advantage of the collaborative design is that it is not only legitimate, but required, that other resources be identified and accessed. Most importantly, the tutor must be willing to step back and relinquish total control of the unit. As Boud and Prosser (1980) point out, she/he must believe that participants can be responsible for their own learning and expect them to do it effectively. The results of the evaluation show that students can and do accept that responsibility. By their commitment to the unit they become committed to the process of self-directed learning.

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REFERENCES


ABSTRACT

Permanant changes in the business environment initiated by a number of factors have increased the complexity of marketing decision making. This process directly affects the teaching approach of future marketing managers—they need to be well equipped with high level analytic and decision making skills. Traditional approaches to tackle the complexity of marketing decision making, by building sophisticated marketing models that will be able to produce answers to manager's questions, require significant technical background, not affordable for most marketing students. The use of PC spreadsheet models may help students in developing analytical skills in marketing without requiring strong previous knowledge in quantitative skills.

The experience in developing and implementing an incremental systematic approach to the teaching and learning of marketing analysis and decision making, using PC spreadsheets in the School of Management and Marketing at Curtin University, has demonstrated that this teaching-learning approach facilitates all learning activities such as memorising, decoding, creative thinking and student interaction in group learning. The discussion of the role of information technology, PC spreadsheets in particular, in a marketing curriculum is presented to encourage further teaching developments, based on the use of this new technology, in facilitating teaching-learning processes in marketing education.

FACTORS INITIATION THE NEED FOR A NEW TEACHING-LEARNING APPROACH IN MARKETING

Dynamic market factors caused by constant technological growth, internationalisation and deregulation of business, and shorter product life cycles have increased the complexity of the marketing decision making process. In some businesses, products life-cycles, which traditionally used to be relatively long, become as short as in the fashion industry. To be able to compete in the market, future decision-makers in marketing have to be well equipped with knowledge that enables them to rationalise marketing decisions. Significant advances in marketing science, widely supported by breakthrough developments in information technology, offer sophisticated Marketing Decision Support Systems (MDSS)—efficient managerial tools to find answers for many questions a marketing manager may have. The use of MDSS is related to the ability of the manager to communicate with them. All these interrelated developments are initiating the need for a new synergistic teaching-learning approach in marketing education, which capitalises on developments in marketing science and information technology (as it is delineated in Figure 1).
Multiple goals
Knowledge based
decision making
Interactive analysis

Complexity of MDS
Single sales response
Marketing science
Mktg-mix interaction
Experience based skills
Delayed response
Knowledge based on facts
Multiple 4P
Data-based research
Multiple goals
Model-building approach
Knowledged based decision making

Need for a new teaching and learning approach

Hardware
Software
Competiton
Technology
International
Deregulation
User-friendly
Low-cost
Information technology
Sophisticated
MDSS

Data-bases
Marketing models
Optimisation techniques

Figure 1 Factors initiating the need for a new teaching-learning approach in marketing education

Complexity Of Marketing Decision Making
Fast technological growth simultaneously provides organisations with both new market chances and with new competitive threats. To avoid threats and to utilise new growth potential, deep knowledge is needed about a number of factors affecting market response to managerial decisions. Achieving these goals is a very complex task, because several characteristics of the marketing environment make it difficult to predict and control the effect of marketing actions (Lilien et al., 1992).

Measuring sales response to just a single marketing instrument, such as product design or advertising, is a challenging task. However, the decision maker should consider the response of all marketing instruments, take into consideration marketing mix interaction (interaction between marketing instruments), and also account for carryover effects and delayed response to marketing instruments either individually or collectively. Furthermore, marketing managers should make decisions taking into consideration both multiple products and multiple territories.

Top management may pursue multiple and often contradictory goals, as they may demand effort to increase long run market share and to achieve short run profitability at the same time. The manager also must forecast effects of competitive actions and other environmental changes on marketing prospects.

Finding the right answer in all these circumstances requires knowledge of how to reduce risk and achieve the optimal relationship between market response and marketing effort. Future marketing experts need to be well equipped with analytical marketing skills and prepared to tackle increasingly complex decision making tasks.

The Use Of Marketing Science For Decision Making
Faced with constantly increasing competition and shorter product life-cycles, many organisations have put significant efforts in creating wisdom about how markets work. The cumulative effect of systematic research done in marketing has resulted in the development of a range of marketing science applications. These applications provide interactive analysis tools and software that enable managers to make informed decisions.

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disciplines such as marketing management, marketing research, consumer behaviour and so on. New developments in information technology have made available powerful low-cost computers and user-friendly software, affordable to almost any non-technical manager. This technology offers flexibility in performing interactive analysis of market response to marketing instruments, as well as scenario analysis of the ultimate outcome of marketing actions under different competitive and environmental conditions.

A small number of organisations have taken advantage of earlier development in information technology--since powerful time-shearing mainframe computers have been available--to integrate databases, statistical analysis packages, marketing response models and optimisation techniques in sophisticated MDSS (Little 1979). Earlier versions of MDSS were designed to be used by technically oriented professionals in the organisations to provide specified managerial questions. Since earlier MDSS provided no user-friendly interface, and due to a limited number of computer literate business graduates, their personal use by non-technical marketing managers was almost negligible.

Further developments in both information technologies and in marketing provide significant evidence that marketing models will be more popular by managers in years to come. According to Rangaswamy and Wind (1991), improved software and hardware, more and better data, diffusion of workstations/networks, model/computer literate MBAs, and knowledge and theory accumulation in the 1990s will bring a much higher level of successful use of marketing models than ever before. The most recent versions of spreadsheet packages, however, provide an appropriate environment for building personal decision making systems that include most of the components of MDSS. Because of their popularity with managers, it is to be expected that spreadsheet models (see Lilien 1993) will significantly increase the use of models by managers in marketing analysis and decision making.

Mutual interactions of developments in information technology (new hardware and software), and new knowledge in marketing science (new concepts, theories, databases and models on response functions) constantly offer new analytical tools. As a result, existing expertise in marketing becomes quickly obsolete, and the need for new skills frequently emerges. To meet this challenge, educators in marketing have to develop an appropriate teaching-learning approach that enables the student's access to applications based on new developments in information technology and marketing science.

The pace of transition from experience-based decision making to marketing-science based decision making is dictated by the rate of adoption of information technology in marketing. Since industry practice dictates the requirement for training skills, the analytical and decision making skills of new graduates that can be easily appreciated by management promises better chances for students' success. In this regard, PC spreadsheets offer several advantages.

RELEVANCE OF PC SPREADSHEETS TO TEACHING IN MARKETING

Teaching marketing analysis and decision making is a complex pedagogical task. It presumes that students have a good knowledge of mathematics, statistics and computing. Many students do not have sufficient skills in all these disciplines. In these circumstances, the teacher has two possibilities:

- traditional teaching of marketing paradigms with or without market response functions, in combination with a case method approach that facilitates the development of students' intuitive sensitivity, or
- interactive analytical approach based on new available decision making technology such as spreadsheet models.
The former approach does not require development of significant teaching materials since there are texts and cases available. This approach, however, does not give the student a real possibility for interactive involvement in testing different alternative decisions and, and most of the time, leads to a superficial approach to learning. Marketing students need to be presented with highly structured training based on alternative quantifiable strategies effectively supporting their decisions in order to facilitate deeper analytical involvement in thinking. This enables comprehensive learning of the complexity of market factors. The latter approach provides students with the tools for testing different alternatives via simulation, searching for the most optimal solution. Consequently, students are actively involved in the process of analytical and deep thinking and learning. This requires from the teacher continuous development of teaching materials, exercises, evaluations and monitoring systems.

Most of the existing text and software combinations available for use either as textbooks (Lilien 1993) or as casebooks (Clarke 1993), lag significantly in the use of analytical, modelling and optimisation capability from the most recent spreadsheet programs. If a teacher uses only the ready made models from books, students will be deprived of some of the features of more up-to-date programs. They will start developing their own applications anyway based on the advantages that new software offers to make numerous possible shortcuts not available in earlier releases of software. To remain up-to-date, the teacher who uses spreadsheets in teaching must continuously develop new teaching-learning technological applications.

We have used PC spreadsheets in teaching in the past three years in the School of Management and Marketing at Curtin University of Technology. Along with ready made models from the software literature, we have developed our own interactive analytical marketing models. Recent generations of our honours marketing students have acquired a significantly high level of skills in using personal computers, and have used this technology to develop interactive analytical marketing and decision making skills that result in deeper learning and thinking. This teaching-learning technology has stimulated students to adopt, adapt and upgrade analytical and decision models. By integrating the knowledge within the curriculum they are also encouraged to design their own models. Now, students are not only active partners in the teaching and learning process, but also significant contributors to course structure, selection of literature and teaching-learning technology. This experience helped some former students to become efficient instructors in undergraduate programs in the school, and also to contribute to fast dissemination of the development of teaching technology within the school.

Dissemination of use of PC spreadsheets in teaching-learning, when almost every student has access to a PC, will increase significantly in the near future. PC's have become more affordable for students. Each student at Curtin Business School has access to two of the most popular spreadsheet programs via the Local Area Network. The first phase of the project idea has already successfully been tested with students in the Marketing Honours Program. Every honours student in our marketing program owns a PC. It is to be expected that within two years PC notebooks will be a requirement for enrolment in most advanced business schools in Australia.

Spreadsheet program packages have become very popular with business people, next only to word processing. Our experience using spreadsheets in teaching-learning provides evidence that the best effects of using new information technology can be achieved only if students use this analytical tool during their education.
SPREADSHEET MODELS AS TEACHING-LEARNING PRODUCTIVITY TOOLS

According to Harris and Bell (1990), during the learning process learners need to carry out a number of activities such as memorising, decoding, creating, and group interactions. Our experience has shown that all these activities can be significantly enhanced by using PC spreadsheet models as teaching-learning tools in marketing analysis and decision making, as specified in Figure 2.

The Role of Spreadsheet Models in Facilitating Memorising in Learning Process

Memorising complex relations in marketing is frequently an unmanageable problem not only for students, but also for experienced marketers. To avoid this problem, a method of abstraction is frequently used, so only key marketing variables are tracked to be able to find their underlying relationship with market response under scrutiny. Students often are forced to memorise formulae by heart. Using spreadsheet models that contain the nested formulae of particular response functions in the appropriate cells, students do not have to memorise equations any more. When students need to know a particular relationship, they can refer to the specific cell in the spreadsheet where the relevant nested formulae is embodied. The time saved can be used to develop a deep intuitive appreciation for, and understanding of, the underlying concepts. When students use the model for a long time, they will easily master the concepts; later on they will adopt, adapt, and further develop the models to meet their analytical needs. Long term use of the models will facilitate a selective (what is mostly needed), unforced (when they can afford), structured (in context) grasp of cause-effect relationships well documented in nested formulae in spreadsheets.
The Role of Spreadsheet Models in Facilitating the Decoding of Complex Relationship Between Marketing Variables and their Market Response

In the past, the user of a model had to have a complete grasp of the models to be able to perform any marketing analysis with it. If students lacked knowledge of one block of the model of the relationship between marketing input variables and marketing response, they usually failed using the model, because they had to do all calculations stepwise in order to replicate the model with new data. Students had to be able completely and in detail to decode the internal structure of the model to make it useful. Thanks to nested formulae in the spreadsheets, students will use models as ready made analytical tools for particular marketing analysis without contesting their internal structural validity. Through intuitive evaluation of the results of a model, students may efficiently use models as a tool for facilitating learning about the marketing possibilities and the market reality.

Spreadsheet models enable incremental learning. Students may start learning a model progressively by grasping initially only the input and output variables, which usually are not difficult for most students. Being documented with all necessary information in nested formulae in particular cells, spreadsheet models make a convenient learning tool; if students want to know more about the model, they can go further in grasping the underlying relationships between marketing variables and overall market response, or specific response to each marketing variable if the model provides such an analytical indicator.

The Role of Spreadsheet Models in Facilitating Students' Interaction in the Learning Process

PC spreadsheet models are highly effective facilitators of interaction between students in a class discussion. We usually divide the class into two groups—a group of managers and a group of researchers. They are assigned case analysis that involves marketing research and decision making. The group of managers are assigned to identify managerial issues in the case, while the group of researchers has to use spreadsheet models to develop sensitivity analysis and scenario testing to propose preliminary decisions. Groups of students playing the role of managers assess the degree to which the analyses via preliminary decision models support the decision. Interactions between the two groups approximate a real world situation, integrating the role of research and marketing decision making, and contributing to focused marketing research design.

PC spreadsheet models provide the means to produce a wide range of necessary indicators in marketing decision making. They enable students to substantiate their own points empirically. Otherwise, in a case analysis without spreadsheets, it was almost impossible to find a defined form of discussion, and as a result the class discussion shifted loosely from one issue to another to the dismay of the facilitator attempting to control it.

Using ready made models students become highly cooperative within the group, maximising support of other group members, and learning from the diverse background and types of learners. At the same time, competition between the groups in searching for empirical substantiation of students' viewpoints facilitates deep analytical thinking in a broader base. Students are proud of their models and they use them extensively in their assignments, even if they are not asked to do so.

The Role of Spreadsheet Models in Facilitating Creative Thinking

Using the model to explore marketing alternatives, students get involved in creative thinking. As a result, students develop the need for deep learning of marketing phenomena using marketing research. Since models are the expression of explicit relationships between marketing variables and their ultimate market response, assessing the results of simulation based on the models gives the students ability to develop not only a critical stand toward models but also about their own thinking.
THE ROLE OF SPREADSHEET MODELS IN FACILITATING MONITORING AND EVOLUTIONARY PROCEDURES OF THE TEACHING-LEARNING PROCESS

In teaching marketing analysis and decision making, students should be aware that the complex and dynamic nature of marketing implies that a single optimum solution can seldom be found. Business objectives also may be complex, and expressed through various objective functions. During seminars and computer supported discussions students should look for a range of solutions rather than for a single one, and through class discussion combine quantitative analysis with strategic qualitative assessment. The monitoring and evaluation system have to provide feedback on the degree to which this teaching technology is successful in facilitating analytical and deep student thinking and learning, and how this process is contributing to the development of comprehensive skills and confidence in marketing decision making.

Students' responses to marketing spreadsheet models and how they facilitate analysis and decision making in real world settings are the best evaluation of their use in the teaching-learning process and assessment. Our assessments have been based on the extent to which the technology contributes to developing deep approaches to learning using interactive spreadsheets in marketing analysis and decision making. In a complex marketing decision situation even when students use the same decision format, usually they come to different conclusions. Discussion to support students' proposed decisions has proved this to be an effective learning experience. Our monitoring and evaluation process has been implemented in the following way:

• through systematic evaluation and redesign of exercise questions, the answer to which may be found by using interactive spreadsheet models,
• by assessment of how appropriate the models are for testing the relationships between marketing input variables (product features, price, distribution support and promotion activities) and their market response that will enable deep thinking about various market phenomena,
• through facilitating discussion within groups, and enabling a healthy competition between the groups,
• by the contribution of models to teamwork cohesion and a sense of accountability and supporting the decision simulations in seminars, case analysis and discussions on project presentations,
• evaluation of the number of model blocks and complete interactive analytical models the students have used in their applied projects.

The teaching technology will be continuously modified in response to students' feedback. We consider monitoring and evaluation as a permanent process that continues during dissemination of results.

CONCLUSION

Marketing decision making is becoming more complex as result of many essential changes initiated by technological development, deregulation and internationalisation of business. New developments in marketing science and information technology, both hardware and software, enabled development of sophisticated systems for analysis and decision making. Recent PC spreadsheets provide a wide range of data management, analytical procedures and optimisation techniques in user-friendly interface with enhanced graphic capabilities. Spreadsheet enables state-of-the-art decision making tools to be available to a wide range of user, without requiring a strong technical background. Spreadsheets provide an efficient analytical tool using various databases and market response function models in searching for optimisation of final business outcomes in an increasingly complex marketing environment.
We have found the use of interactive marketing analysis in PC spreadsheet models to be very efficient teaching-learning tools that provide synergic use of models for learning underlying concepts, procedures and algorithms in the models, and to be of great use in providing answers to various real world managerial questions. Hands-on experience in interactive marketing analysis and decision making increases learning productivity by stimulating students to develop analytical thinking, by developing a deep learning approach to the process of complex marketing decision making that contributes to higher confidence in their own decisions, and by preparing them to be useful from the first day of their professional careers.

The teaching-learning approach based on PC spreadsheet models provides the means for productivity gains in all learning activities. Decoding response functions in nested formulae is no longer a requirement to use the model. Students can have an unforced selective, incremental approach to memorising cause-effect relationships embodied in well-documented nested formulae. This approach stimulates students' interaction in the learning process in both case analysis and applied projects. Spreadsheet models provide a formatted analytical framework that facilitates group work and group critical thinking, and evaluation that facilitates development of students' creative thinking in marketing.

REFERENCES


ABSTRACT

A Deputy Vice Chancellor's grant in 1993 made possible the integration of a writing support program with a regular Educational Psychology Unit. This unit is one of the core units for all first year teacher trainees in the Faculty of Education, Curtin University of Technology. The four sessions of the integrated program, titled "Handling Psychology Text", were taught by the authors. Students responded positively to the program and believed that their writing and assignment presentation skills improved as a result of participation in the program. Lecturers' subjective assessment of students' writing was that it was superior to student report writing in previous years.

INTRODUCTION

Teacher trainees in their first year of University study in the Faculty of Education are required to complete a number of writing assignments. Written work is viewed as offering hands-on experience for students, providing both summative and formative information about student understanding of topics covered, and making a contribution to student learning. Writing requires students to think about a topic, identify main ideas, evaluate the merit of competing ideas and use knowledge to shape and support argument. Writing about discipline-based content not only aids student understanding and supports 'deep learning', it also provides practice in content-specific language. Thus students are helped to become 'literate' in the discipline they are studying.

The practice of subject-based writing accords with the Christie (1992) Recommendation 17 that 'subject specialists should insert literacy issues into their courses'. Empirical evidence as well as our own experience has shown that we cannot assume that students have the skills needed for dealing with 'literacy issues'. Students need help firstly because of the differences in the writing demands between secondary and tertiary levels and secondly, because of the developmental nature of the writing process itself (Clanchy 1985). For many students, writing at university is a complex task. Students must deal with unfamiliar content at the same time as writing about theoretical issues in a form suitable to the discipline they are studying. As written expression, vocabulary and register styles are genre specific, opportunities for practice and the provision of support by those experienced in the discipline are needed to help students move towards content-area literacy.

This paper deals with a 'literacy' program which taught students how to prepare and write a tertiary-level assignment. The assignment was an integral part of the regular core unit in Educational Psychology which is a requirement for all first year teacher trainees. Actual class assignments were used during the four two-hour sessions to show students how to prepare and present a piece of academic writing in the mode appropriate to their Educational Psychology study. The sessions were called Handling Psychology Text (HPT) and were based on the Five-by-Three writing model the authors have developed over a number of years (Samson and Radloff, 1992a).
THE PROGRAM

The writing program as an integral component of a first year Educational Psychology unit. The ability to write reflectively is related to reasoning, to clarifying ideas, and to consolidating writers' understanding of the issues they are writing about. Our interest in writing is related to our desire to help students understand major concepts in Educational Psychology. Understanding is a prerequisite for efficient learning and we believe that one way to help students learn effectively is through the process of writing about the issues in the discipline they are studying. But if learning through writing is to be effective students must be shown how to write and how to go about their writing tasks.

We introduced students to the Five-by-Three writing model as an integral component of Educational Psychology topics. This meant that we gave students specific assistance to write the two project reports set in Semester 1. Writing assistance was thus embedded in the context of unit content and related assignments.

Current empirical evidence reinforces the view that any support program, for example, writing, general literacy, study skills, needs to be integrated with the subject discipline within which it will be used if its benefits are to be maximised. The benefits of the writing assistance were thereby maximised since support was incorporated as part of the context in which it was used (Samson and Radloff, 1993; Radloff and Samson, 1991).

Assistance with writing was offered to all students, and not only those who might be considered to need remedial help. Literacy support was also offered early in students' academic careers, reflecting the emphasis which Christie (1992) places on early support in Recommendation 18.

The Five-by-Three writing model

By combining the views of Hayes and Flower (1986) on the composing process and Polya (1956) on steps in problem-solving we conceptualised the writing process as a problem-solving activity. Hayes and Flower describe their model of writing in problem-solving terms and Polya developed a heuristic to solve mathematical problems. Polya's model consists of four problem-solving steps: understanding the problem, devising a plan, carrying out the plan, and looking back.

The advantage of linking writing with problem-solving is that it highlights the fact that writing can be thought of as a problem to be solved; that successful solution can be assisted by tackling the task systematically following a series of steps; that checking back and monitoring one's efforts are important elements of problem solving; that evaluating a finished product is an integral step in problem-solving; that beliefs and attitudes influence persistence and motivation; and that problem-solving can be done as a group activity.

The Five-by-Three model presents writing as a complex activity consisting of a set of skills which require practice and feedback to develop.

The model incorporates current theory on the writing process. It is simple to use and does not require the teacher to have specific English teaching or remediation teaching skills. We believe that any staff member in any subject discipline with any group could use the model.
FIVE-BY-THREE WRITING MODEL

PRE PLAN
- establish purpose
- define task
- write to develop your argument
- check for meaning and relevance

PLAN
- gather information
- decide on issues
- select format and structure: introduction, issues, conclusion

COMPOSE
- express ideas aloud
- write to develop your argument
- check for meaning and relevance

REVIEW
- check inclusion of content
- check structure and format
- edit

EVALUATE
- 'Did I answer the question?'
- 'Were my strategies effective?'
- 'How well did I carry out the task?'

The Five-by-Three Writing model is an extremely simple model to understand and to teach. Each of the five steps has three activities based on writing theory and research. The model which formed the basis of the sessions is explained in greater detail in In Writing (Samson and Radloff, 1992a).

The model recognises that student writing difficulties go beyond simple mechanics and include problems with expressing in writing new and unfamiliar ideas and concepts. Such a viewpoint is supported by the work of Taylor and Nightingale (1990).

Biggs and Moore (1993, p.370) claim that "writing involves three major processes: planning, sentence generation and revision". We believe that the model we have devised helps students in a simple, practical way to work towards those three processes. Biggs and Moore also say that "reflective writing...is the mode that addresses higher cognitive processes; it is recursive, transforming and constructing knowledge as much as transmitting it" (p.370). These principles also have been incorporated in the model, especially in step three, the Composing step, where students are required to listen to themselves say out aloud what it is they mean.

The target group and the pattern of integration.
The target group who participated in the integrated program were the Educational Psychology students we taught as part of our regular teaching responsibilities. These were not only the most convenient groups for us to use, they were the students to whom we taught Educational Psychology content, and as specialist staff in this area we believe that we are best placed to 'enhance the literacy capacities of teacher education students' in the content area of Educational Psychology (Christie, 1992, Recommendation 6 - 10).
The routine pattern of the Educational Psychology unit includes occasional weeks which are nominated as 'free' weeks to give students time for preparation of assignments. With the introduction of the HPT program, the former 'free' sessions were used to provide in-class support for student writing. This pattern meant that 8 weeks of the 12 week semester covered regular course content and 4 of 12 weeks were HPT sessions. It was not possible to control the timing of the HPT sessions because the time table had to fit the regular demands of semester teaching, including the Easter break, teaching practice and a major quiz session which accounted for the remainder of the 15-week semester. Dates for submission of student reports were co-ordinated with the writing program dates.

Presentation of Handling Psychology Text sessions
Both Samson and Radloff each taught her own Educational Psychology class as well as the HPT sessions. As there were six classes of Educational Psychology to be taught, another colleague taught four Psychology classes. Her HPT sessions were taken by Samson. This meant that three lecturers taught approximately 160 first year teacher trainees enrolled in Early Childhood, Primary and Secondary Education programs but only Samson and Radloff taught the HPT sessions to the total cohort of students.

An additional Faculty activity appeared to support our HPT program. All entering undergraduates are required to pass the Faculty Literacy Test which is conducted by Samson at the beginning of the academic year. The test in 1993 included essay writing, an editing exercise and spelling. By coincidence the HPT sessions also began early in the semester. The literacy test and the HPT writing support offered to first year students are quite separate activities. Nonetheless, together they appeared to have generated a valuable synergistic effect on student motivation and interest, as well as on the effort students made with their writing.

Students presented each week for their Educational Psychology class and in some weeks the theme was Educational Psychology content and in some interleaving weeks the theme dealt with the writing assignments set for the Unit. Subject material was inevitably included during the writing sessions. It was probably only the Lecturers who were aware of any differences as they switched to different modes of teaching. Ideal circumstances for individual lecturers might include the writing component as a small part of most lecture sessions and avoid the longer sessions entirely devoted to literacy support. Students seemed to treat the different topics - or the different Lecturer (as in the case of the other four Psychology classes) as routine. Actually the sessions were conducted as if they were regular Educational Psychology sessions and all other procedures were routine. Such familiarity only emphasised the natural contextual nature of the writing support and we believe contributed to the success of the integration from the students' perspective.

Assignments required students to conduct two mini-experiments and to write a report about each. The report included a two-page component dealing with the theoretical issues on which the experiment was based as well as issues related to the findings of the experiment itself. The reports were quite extensive and as well as the section on theoretical issues, included experimental procedure and results, discussion of issues and personal comment.

Instructional strategies
During the Handling Psychology sessions the writing task was presented as a problem to be solved and each step was modelled and practised using interactive small group learning. A step of the model was taught in each session with both the fourth and fifth steps being taught during the fourth HPT teaching session.

Strategies employed by the two Lecturers who taught the program were metacognitively based, that is, students were encouraged to be self-regulating and academically active; social interaction
with peers and Lecturer was included; Lecturers acted as mediators and scaffolders; debriefing, reflection and assessment were used at the conclusion of the exercise; and principles were elucidated and discussed in order to maximise transfer to other writing tasks.

We taught, modelled and had students practise the steps of the writing program using the two major project reports. The fact that we used content-specific writing added to the relevance of the program for students and encouraged them to take the program seriously. Support material for this program included an Assignment Assessment sheet which informs students of the criteria used to assess their work and gives them detailed feedback on their reports; an Essay Guide (Samson and Radloff, 1992b) which gives details of presentation, format and referencing requirements, rules affecting plagiarism and general hints about clear writing; and the *In Writing* booklet (Samson and Radloff, 1992a) which describes the Five-by-Three writing model. We also provided in the Unit Guide detailed written instructions for the completion of the project assignments.

**OUTCOMES**

At the end of the semester, students were given a 20 item questionnaire seeking their reactions to the program, their views about their writing skills in general and their understanding of the elements of an assignment in particular. The questionnaire results were analysed and a test applied to student beliefs about their pre and post assignment writing skills.

**Results from student questionnaire**

Responses to miscellaneous set of questions on HPT sessions Q12.1 to 12.18

<table>
<thead>
<tr>
<th>HPT sessions question number</th>
<th>response</th>
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<tbody>
<tr>
<td>12.1</td>
<td>140 students (96.55%) agreed that the 5x3 model was useful to include in HPT sessions</td>
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<tr>
<td>12.2</td>
<td>140 (96.55%) found the sessions easy to follow</td>
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<tr>
<td>12.3</td>
<td>135 (93.1%) believed the sessions helped with their writing</td>
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<tr>
<th>writing support question number</th>
<th>response</th>
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<tbody>
<tr>
<td>12.4</td>
<td>135 (93.1%) considered that sessions helped them to understand the importance of structuring their ideas</td>
</tr>
<tr>
<td>12.6</td>
<td>135 (93.1%) believed they improved the structure of their writing</td>
</tr>
<tr>
<td>12.7</td>
<td>133 (91.7%) found the skills useful for writing in other units</td>
</tr>
<tr>
<td>12.12</td>
<td>133 (91.7%) stated that they had opportunity to practise learned skills</td>
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<tr>
<th>faculty support, value of sessions and timing question number</th>
<th>response</th>
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<tbody>
<tr>
<td>12.15</td>
<td>138 (95.2%) agreed that the help given was provided at the right point in their university studies</td>
</tr>
<tr>
<td>12.16</td>
<td>121 (83.4%) thought that writing support should be offered as part of all units of study</td>
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<tr>
<td>12.17</td>
<td>131 (90.3%) considered they received sufficient help to improve their writing skills</td>
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<tr>
<td>12.9</td>
<td>142 (98.55%) believed the Faculty emphasised the importance of teacher literacy skills</td>
</tr>
<tr>
<td>12.18</td>
<td>138 (95.2%) supported the emphasis the Faculty gives to the importance of literacy skills for teachers</td>
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</tbody>
</table>
12.5 140 (95.55%) thought sessions were long enough
12.11 117 (80.7%) did not think the time between sessions was too long
12.14 144 (99.3%) thought spending time discussing requirements for a new assignment helped the writing process

Shift in student beliefs about their skills - Pre and Post sessions

A comparison was made between student beliefs about their writing and their writing skills pre and post sessions.

Q1 asked students to rate their writing skills before the sessions and Q9 asked students to rate their writing skills after the sessions. Prior to intervention 13.8% of students believed their writing skills to be average or above average. After intervention, 46.2% of students believed their writing skills to be average or above average. Such an increase in the number of students reflected a statistically significant shift.

Q2 asked students to judge their pre-session ability to preplan, plan, compose, review and evaluate as part of their essay writing skills. Question 11 asked whether students thought those skills had improved as a result of the HPT sessions. The number of students who believed that all these sub-skills, except composing, had improved, showed a statistically significant increase pre- and post-sessions. Figures indicated that students believed there was some improvement with their composing skills, but the difference between pre and post sessions was not statistically significant.

There was a wide range of responses to the following questions:

12.8 whether students would have liked more support to improve writing skills
42.7% saying they would have liked more, 30.8% were neutral, and 26.6 disagreed

12.13 whether the HPT sessions should have been offered as an option rather than as part of the first year Educational Psychology course
25.7% said program should have been an option, 26.4 were neutral and 47.9% disagreed

DISCUSSION

It was not possible to obtain objective measures of pre and post intervention student writing skills. Student beliefs about the HPT program, their writing skills and their views on the delivery of the program were the only measures we were able to take.

Students rated the program highly, 95.9% finding it extremely helpful or helpful. Although six students found it of no help or unhelpful, such a large majority who did find the program helpful supports our previous experience that students are positive in their attitudes to receiving help with 'literacy issues' (Radloff and Samson, 1991). This result confirms our view and those of the Dean and Faculty that such a program is worthwhile.

Question 12.11 indicated that 28 students (19.3 %) thought that time between the sessions was too long. Whilst not a significant number, nonetheless a number which suggests it might be useful to seek reasons from students for their responses. Each time the Lecturer taught the 'next' session, students appeared to have forgotten all that they had been taught during the previous teaching sessions. At first this was frustrating and cause for reflection about whether the previous session had not been taught as effectively as one would have hoped. However, by the repetition at the
fourth session, we began to see students' vagueness at the beginning of a session as a benefit, since the steps of the model taught so far would have to be retaught carefully once again. Teaching the sessions with such spaced intervals seemed expensive in terms of time, but by the end of the sessions we believe that students had been exposed to far more reinforcing teaching than they would have been had each step of the model been taught merely once at the beginning of the program.

Furthermore as the semester proceeded students were asking more pertinent questions and responding in a more pro-active way to the sessions than they had been at the beginning of the semester. The later sessions came at a time when students were actually writing assignments for the Educational Psychology Unit and for other units in their course and it is probable that at this stage they were realising the contextual gain for themselves. Alternatively, if it had been possible to teach students the whole model at the beginning of the semester in a much more compressed form, it is likely that students would not have identified to such an extent with the support given since they may not, at that stage, have realised the value of it to themselves.

Students' beliefs about their specific writing skills (mechanics), and their performance in the preparation of a report (format, structure, composition and reviewing), all showed improvement. 'Shape' and structure showed strongest improvement. All categories of beliefs indicated statistically significant improvement, except composing. This reinforces a previous study where we found students wanted more support than we had given with the composing process (Radloff and Samson, 1990; Radloff and Samson, 1991). Such a result confirms our experience that teaching 'how to' prepare, shape and present an assignment is an easier task than teaching students how to transform their thoughts into communicable prose that expresses what they intend. Teaching students how to express their ideas in writing is indeed a challenge, albeit not an insurmountable one, since students considered that there had been some improvement in their composing from pre to post HPT sessions.

With a view always to refining and improving the instructional strategies of the Five-by-Three writing model the questionnaire also sought student reaction to the content and delivery of the HPT sessions. Students strongly agreed that the writing model steps were extremely helpful or helpful. Responses to the 'Preplan' step were all in the nineties, with the tasks in the 'Evaluate' step having the lowest of the responses, in the high eighties (87.9%, 85.2%, 87.3%).

The majority of students found all the teaching helpful, but the teaching of the Reviewing and Evaluating steps was perceived as being less helpful than the other steps. Either the Lecturers taught the first three steps more effectively than the latter two or students genuinely did not find the Review and Evaluate steps of such importance to themselves.

Most students also supported the use of the Five by Three Writing model as a vehicle for teaching the HPT sessions and most believed that the sessions helped them with their writing. Further, they believed that they had received sufficient help to enable them to improve their writing skills. Markers of future writing which these students will complete may not agree entirely with this view.

Over 90% of students supported the emphasis the Faculty places on the literacy competence of its graduates. Despite a great deal of literacy-type activity such as the literacy test, aspects relating to it, for example, letters to students, notices of results by ID on public notice boards, remedial lessons and a repeat test for students who failed, as well as the HPT sessions, three students indicated that they did not believe the Faculty emphasised literacy skills. Such opinions are more likely to reflect a student's identification with Faculty activities than with reality.
The most ambiguous responses were given to two questions. One of these questions (12.8) showed that students were divided in their views as to whether they had received sufficient support. For those who would like more help, the Faculty offers an elective subject which is open to students wishing to improve their literacy competence.

The other question which had a wider range of responses than average was question 12.13 which sought student views on whether the HPT sessions should have been offered as an option rather than as part of the Educational Psychology Unit. Almost half did not agree with the option suggestion. Irrespective of student views, a support program which is not integrated within the context in which it will be applied does not match the professional views of the Lecturers who taught the HPT sessions and would not be supported by them.

**CONCLUSION**

The questionnaire indicated that students overwhelmingly supported the HPT program, the Five-by-Three writing model and the instructional strategies used to present the program. Students also appear to support the number of hours allotted to the program and the arrangement of sessions within the regular Educational Psychology teaching appear to have been well suited to the writing skills program.

Whether in fact assignment writing marks improved and whether student writing skills transferred to other subjects, are topics for future study.

The highlight of the HPT program as noted from the questionnaire is that students believed that their writing skills improved and their competence in managing a tertiary writing assignment were improved as a result of the Handling Psychology Text program. The view by the three Lecturers of the Unit (two of whom are the authors) was that the quality of the student projects was superior to that of previous years. This global assessment was based on an overview of all student writing which included two project reports and short essay tests.

The Handling Psychology Text program would not have been possible without the initial support from the Deputy Vice Chancellor, Professor Ian Reid. His encouragement coming as it did from central administration acted as confirmation to staff that their work was not only valuable but appreciated. The DVC's verbal encouragement was backed-up by the provision of funds to pay for the additional teaching offered in the HPT classes. Credit is also due to the Dean of the Faculty, Owen Watts, who encouraged the introduction of the program and was co-operative and very supportive. Thus administrative support facilitated the activities of the two Lecturers whose professional commitment to literacy support in context was validated.

'A major leap in literacy' skills was therefore made by students who benefited as a consequence of the parts played by "One Vice chancellor, one Dean, and two Lecturers."
The two Lecturers also gained valuable information since they found that:

- students can benefit from support for writing skills offered at the beginning of their studies
- students react positively to a writing support program
- student writing can develop in the context of their normal subject study
- opportunities for repetition and reinforcement of the writing steps enhance student writing development
- a simple program for writing which is practical and stresses the 'how to' of student writing is not difficult to teach
- subject specialists can incorporate assistance with writing into normal classes without themselves being English teachers
- for such intervention to be effective, support from the 'top' is necessary
REFERENCES


ABSTRACT

Over a number of years we have noticed a general lack of ability of students to explain themselves in essay style answers. It was our impression that students may have known the information but seemed unable to convey it in a logical and expanded written form. Therefore their achievements were limited by this assessment method. Exposure to the Five-by Three Steps in Writing model at a workshop run by Alex Radloff and Joanne Samson made us aware that firstly, the problem was universal and secondly, that our unit assessment structure failed to provide essay writing practice.

In an attempt to rectify this deficiency we introduced Microthemes - short logical explanations of microbiological concepts to give students practice at expressing their knowledge as applied to course content. Evaluations have been completed and are being analysed. Early indications suggest that students have benefited from this opportunity to improve their writing skills in Microbiology.

INTRODUCTION

A newspaper article appearing in 'The West Australian' on January 20th 1994 summarised the findings of a study by The Australian Association of Graduate Employers. The headline 'Study Reveals Skills Failure' and the main thrust of the article, came as no surprise to us. The cost to industry was however, an aspect we had not appreciated. Over a number of years of teaching microbiology to students in the first and second years of the Medical Science course, as well as to students in Nursing courses, we had become increasingly concerned about the poor writing skills of these students. In general, students scored well in assessments involving multi-choice and short answer questions. However in paragraph and essay style questions, students scored poorly, tended to be overgeneralised, lacking in depth and fragmented.

Our established semester assessments had comprised; a mid semester theory paper, a final theory paper, a practical examination and a continuous assessment component. The continuous assessment component was made up of spot tests and practical class reports. In all of these assessments the only time any significant amount of writing was required was in the final theory paper. Thus there was little or no opportunity to give students feedback or guidelines to assist them with what we saw as a major problem.

Attendance at the Teaching and Learning Forum 1993 introduced us to Alex Radloff and Joanne Samson's "5x3' Model for Effective Writing." [1] We expressed a willingness to be involved in their research 'Becoming discipline literate using a team teaching approach.'

It was participation with Alex and Jo that really awakened in us an awareness of the importance of good writing in the overall learning process. We recognised the need for practice in writing and feedback to students. Thus we sought a way to incorporate these elements into our already busy semester program, but wondered how best to do so in an environment where student numbers are ever increasing and staff marking overload is ever real.
A paper by Kathryn Martin [2] was forwarded to us by Alex Radloff. This seemed to be the solution to our problem. Since we were teaching microbiology, what better name than Microthemes.

MICROTHERMES - WHAT ARE THEY?

We trialed Microthemes with the second year Medical Science students. The students were given a handout explaining the idea and with a list of questions and dates for submission. Below is some of the information contained in that document:

Microthemes:
- are short, logical explanations of microbiological concepts or topics
- are designed to review specific learning concepts and increase recall of facts or procedures
- aim to give you practice at writing down your ideas and showing your understanding of a specific topic
- require NO MORE than one page answers - for some half a page will suffice

Our Trial Program
- Involved 3 "sets" of microthemes to be submitted at designated times during semester
- Each "set" involved 4-5 microthemes with some choice within each set
- Used questions from student's practical manual in some instances
- In some instances microtheme questions were used directly in examination papers

Examples of the questions are given below:

4. For this question answer EITHER 4a OR 4b.
   a) A 21 year old female presents at her Doctor's surgery with symptoms of urinary tract infection. A sample of urine is analysed and reveals the following results:

   35 leucocytes/µl
   18 rbc's/µl
   130 epithelial cells/µl
   cellular casts ++
   bacteria +++

   Discuss the above results and make appropriate recommendations on which the Doctor can make his diagnosis. Remember to include normal parameters and a discussion of these for comparison.

11. Haemophilus influenzae type b can be a normal or transient inhabitant of the human nasopharynx. It is also an important and frequent pathogen of children in which it is the most frequent cause of purulent meningitis. Discuss the pathway(s) which enable the organism to gain entry into the CSF. Associate the potential pathogen with high-risk age groups and mention recent preventative developments.

EVALUATIONS

To determine the impact of microthemes we surveyed the students three times during semester. Survey 1 was carried out immediately following the submission of the first set of microthemes. Survey 2 was held one week after the mid semester test. Survey 3 was carried out after all three sets of microthemes had been submitted and marked.
Below are some results from selected questions from each of the evaluations. The analyses are only in preliminary stages but in our opinion, comments made by students were very encouraging. Examples of these are shown beneath each question.

**From evaluation 1**

<table>
<thead>
<tr>
<th>Q2 What was your initial reaction to Microthemes?</th>
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<tbody>
<tr>
<td>Good idea</td>
</tr>
<tr>
<td>O.K.</td>
</tr>
<tr>
<td>Bad - I hate writing</td>
</tr>
</tbody>
</table>

**Sample Statements**

"a lot better than spot tests" "helps with revision of theory" "link with application of information learnt to real situations" "motivates us to open up the micro textbook" "at first I thought nothing of them really, but after I realised what a benefit they've been..." "the more you write something down, the more you seem to remember it"

<table>
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<tr>
<th>Q5 Now that you have worked on, handed in, and been tested on, Microthemes, how do you feel about the idea now?</th>
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</thead>
<tbody>
<tr>
<td>Good idea</td>
</tr>
<tr>
<td>O.K.</td>
</tr>
<tr>
<td>O.K. but too much work</td>
</tr>
<tr>
<td>Bad news - I can't see any news in them</td>
</tr>
</tbody>
</table>

**Sample Statements**

"it is a good idea to give more practice in writing. It also increases my knowledge of certain topics and makes me think about them.... but an extra work load" "the time allowed to complete them was good, I could do one or two questions a week without panicking" "I feel at least I have been reading something for Microbiology" "by writing it down I remember the answers better. By having them corrected and handed back I have a better idea of how to answer that sort of question in the exam if it came up" "it really reinforces the information we learn in the prac and lectures. Forcing you to go over the information in depth rather than just cramming for exams, makes the info stick"

**Responses to question 2** have determined that most students were receptive to the new idea. We realised that our students were exposed to a change in the program and needed to be sure that this did not negatively influence their response to Microthemes. From the data it is apparent that this was not the case.
Question 5 results indicate that following initial exposure to the Microtheme concept, students still felt positive about the idea.

From evaluation 2
Now that you have written your mid semester test, do you feel that the groundwork done in Microthemes helped you determine the standard of answers expected of you in paragraph/essay style questions?

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<tbody>
<tr>
<td>Yes</td>
<td>51</td>
</tr>
<tr>
<td>No</td>
<td>2</td>
</tr>
<tr>
<td>Undecided</td>
<td>3</td>
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Sample statements
"made us read the question" "enabled me to spell all the big words" "because the discussion of the questions in class made us more confident and understanding in the proper way of presenting the answers as well as to analyse a question" "the microtheme marking scheme helped to show the depth of answers required" "It took 1 year of microbiology and the introduction of microthemes to show me that the answer required must be a comprehensive answer containing all relevant information on that subject, even if the question doesn't specifically ask for that information"

Results of evaluation 2 indicate that students unanimously agreed that Microthemes helped them determine the expectations and standards required in paragraph/essay style questions.

From evaluation 3

Q1 Did the Microtheme concept aid your learning process?

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<td>Yes</td>
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<td>0</td>
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<td>Undecided</td>
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Sample Statements
"did research on topics that I probably otherwise wouldn't have" "revise and broaden the topics we have covered" "it helped reinforce the ideas and topics so they could be more easily understood and remembered" "provides continuous feedback as to whether or not you're on the right track" "to hear and write something down in a lecture or practical session is good - but to research it and have to think about it makes it sink in"
Q2 Do you feel your writing skills have improved in relation to essay-style answers?

- Yes [21]
- No [11]
- Undecided [12]

No sample statements as none requested.

Q6 Has your attitude to writing as a learning tool altered because of your experiences with the Microtheme concept?

- Yes [25]
- No [17]
- Undecided [1]

No response

Sample Statements
"I remember more if I write it down" "appreciate the usefulness of this activity now as you made the topics relevant" "it has improved my writing not only in microbiology but also other areas" "enjoy writing and learning more when I understand what is being asked and I have knowledge of the topic"

Q7 Did you discuss ideas about Microtheme answers prior to submitting your own answers?

- Yes [28]
- No [16]

Sample Statements
"feedback following submission and marking promoted learning" "to reinforce ideas and confidence in our own answers" "brings more ideas into the picture"

Answers to the third evaluation require some explanation. In question 1, the number of respondents was down due to absenteeism and also due to the fact that we did not make it compulsory for students to complete any of the questionnaires. Most students indicated that the exercise aided their learning process. In question 2, students were not asked to make written additional comments, but verbal discussions with some students suggested that the wording of the question may have been poor.
In response to question 6 a lot of students did not offer a comment. Also many of the 'no' responses were qualified by a statement which emphasised that writing was a tool already used as part of their study technique.

The number of negative responses to question 7 turned out to be due to a concern in some students that we were looking for cheats. This was contrary to our intent in asking the question—we were trying to assess if small group learning had taken place!

Overall we feel we can best summarise our observations as:

\[
\text{MICROTHEMES + RECEPTIVE STUDENT} = \text{PROMOTION OF STUDENT-CENTRED LEARNING AND HIGHER LEVELS OF ACHIEVEMENT}
\]

OUTCOMES

a) \hspace{1cm} FOR STUDENTS:
Analysis of student perceptions regarding Microthemes indicates that promotion of learning and higher levels of achievement did occur because:

i) student research was stimulated - from textbooks, library and even from reference laboratories.

ii) revision and recall of information was initiated and application of knowledge to case-studies added interest and meaning to learning.

iii) small and large group discussion was promoted resulting in a useful exchange of ideas and expansion in overall knowledge.

iv) feedback from staff, especially in regard to identified weak areas or misunderstood concepts, aided student learning.

v) students were better prepared for essay style questions. This appeared to improve examination performance, but equally importantly, we felt this was an essential skill to acquire for their future.

b) \hspace{1cm} FOR STAFF

i) we believe that the Microtheme program improved the quality of teaching in our unit.

ii) the feedback that we received enabled us to identify strengths and weaknesses in the groups understanding. This allowed revision to be tailored to specific areas.

iii) as student performance improved, we felt we had made a positive contribution to the quality of student learning and thus to the quality of our graduates.

iv) discussions that were generated were stimulating and encouraging, breaking down some of those inhibitions which often seem to stifle tutorial sessions.

v) students appeared to enjoy applying their knowledge to 'real-life' situations through case studies. Learning achieved a purpose.

vi) as a result of our involvement with the Teaching Learning Group and Alex Radloff in particular, we established a network for exchange of ideas and information.

vii) marking became less onerous, as well structured and logical answers were more frequently encountered. However, it would be remiss of us not to point out that this type of assessment does involve a great deal of time in marking.
CONCLUSIONS AND RECOMMENDATIONS

We have concluded from this trial program that practice in writing is the key to assisting students to improve their writing skills. Giving clear guidelines about essay structure such as those used in the '5 x 3' model also benefits students greatly. Carefully worded questions in which assessment criteria are included and feedback is given provide a meaningful tool to assist student learning. We propose to replace our mid-semester theory test with Microthemes. In this way we hope to alleviate the impact of the additional marking generated by this assessment method. For each new group of students we intend to run a tutorial session on essay writing using the experience gained from working with Alex Radloff and Joanne Samson. We also intend to introduce Microthemes into the microbiology unit for first years, in the hope that writing and learning will be further enhanced by increased exposure to assessments of this nature.

REFERENCES
