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INSIDE

Developing the NUS Graduate *Par Excellence*: The Importance *of* Continual Curricula Reform

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The NUS Graduate: Establishing NUS' Reputation

Since its beginnings in 1905, NUS has undergone phenomenal changes in search of distinction. By actively participating in all these changes, the Government, our visionary and able vice-chancellors, dedicated staff and administrators and all our students have collectively established the excellent reputation that we now have today whereby the NUS degree is well recognised locally and internationally.

As a university is judged by the quality of its graduates (and its faculty), NUS will remain a brand name amidst the many institutions of higher education in the world only if we are able to continue to produce suitably trained graduates who are in high demand because they are able to provide top service. Consequently, the education/training process that we provide for the NUS Student should be examined in greater detail.

Strategically, we must identify the type and quality of graduates whom we **want** to produce and **can** produce. Such strategies will govern the calibre of students we deem suitable to educate and also that of faculty who provide the education. Tactically, **curricula** that stretch the students' intellectual minds and stimulate their intellectual curiosity, as well as a conducive learning **environment** are also important factors for attracting quality students and academic staff to join NUS and collectively produce the desired outcomes of NUS. Because the desired outcomes differ with time, we should also constantly review both curricula and environment accordingly.

The NUS Student and Curriculum: Past and Present

For the purpose of this essay, I will highlight two distinct phases of curriculum development in the history of engineering education at NUS. The first phase of development took place from the early 60s to the late 70s when the School of Engineering was established at the then University of Singapore during the launch of Singapore's industrialisation programme. The aim of engineering education then was to churn out quickly as large a workforce as possible at the professional level. This was a necessary measure, as Singapore's industries were essentially assembly plants that were labour-intensive. Degree accreditation from UK professional institutions was used to benchmark our engineering curricula.

Until the late 70s, our faculties/schools were located at Bukit Timah, Prince Edward Road, Lady Hill and Sepoy Lines. In 1978, a common campus was founded at Kent Ridge to create an environment that would in future facilitate interdisciplinary activities. The second phase of curriculum development next took place from the early 80s into the 90s as Singapore's economy boomed. During this period, the focus shifted from promoting labour-intensive towards capital-intensive industries, with the substantial increase in the workforce salary fuelling the change from low to high tech economy. Professional courses such as engineering, accountancy and

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Developing the NUS Graduate *Par Excellence*

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business administration were heavily subscribed. However, many bright students chose to study humanities and become administrators in both public and private organisations. Engineering and science graduates were also readily absorbed into the administrative and financial sectors.

Two parallel paths of undergraduate engineering education were available from the two universities in Singapore (NUS and Nanyang Technological University) to meet its manpower requirement. With NUS' emphasis in research, especially collaborative research with industry, the NUS curriculum was re-structured introducing more graduate courses, especially the part-time Masters' programmes. Many research institutes and research centres were established and hosted by NUS. Immersed in this environment, the NUS student was given ample exposure to key academic issues, entrepreneurship, and understanding of world cultures.

The NUS Graduate of the Future

At the start of this new millennium, not only has its own economy matured, but Singapore must now also confront global competition to survive. 'Global economy', 'knowledge economy', 'global knowledge enterprise', and 'foreign talent' are common buzzwords that sum up the demands of the new worldwide, Information Technology-driven economy. To meet such challenges, the strategies and tactics for educating/training the NUS student must necessarily be changed accordingly.

When contemplating curricula reform, two basic questions should be considered among many:

- Why should a prospective student select NUS, and not another university?
- Why should the employer select graduates from NUS and not from other universities or polytechnics?

A prospective student will choose the tertiary institution with education programmes that will satisfy their **intellectual curiosity** and concern for high **market value**. But if immediate market value is the student's main consideration, then rapid changes in global demands and shifts in location of employers will result in transient market values of graduates. As a result, over-emphasising market value by prospective students and by faculty/school curriculum committees will be both short-term and imprudent. Instead, a good balance between training the intellect and training for market value is necessary. Therefore, for NUS to attract the best and brightest of students, we must tailor our academic programmes towards developing students' personal, intellectual, professional and communicative potentials. After completing these programmes, the NUS graduate will be able to continue acquiring further skills independently to sustain his or her market value regardless of the disciplines majored at NUS.

The future NUS graduate will then be one who is, on the one hand, professionally competent within a chosen discipline or disciplines, and on the other hand, intellectually broad-based and highly adaptable to become cosmopolitan men or women with leadership qualities. To achieve these aims, the NUS curricula must strongly emphasise developing the students' **rigorous understanding** of fundamental principles and their ability to **generate new knowledge** through applications of these principles. The NUS curricula must also facilitate **breadth of study** to satisfy the NUS student's intellectual curiosity, interests and aspirations. In addition, the NUS curricula must leverage on the expertise of other faculties/schools/institutions, local or overseas, to facilitate **cross-pollination** of ideas and knowledge to generate new niche areas and territories.

Given NUS' comprehensive structure as a university and our adoption of the flexible Modular System, we are capable of achieving the above objectives. Yet to further realise the vision of NUS as 'the intellectual and entrepreneurial pulse of Singapore', many new multi-disciplinary initiatives have been introduced, such as Minor Programmes, Specialisation Areas, Cross-Faculty Modules, Elective Modules and others that have been jointly proposed by faculties and departments. The implementation of the University Scholars Programme and the General Education Requirement will nurture NUS students to become leaders: these programmes will intensively stretch their intellect as well as enable them to learn the essential modes of inquiry in their quest for knowledge within and outside of their disciplines.

Value-adding vs. Value-creating

When considering curricula development, we should perhaps make another careful distinction between value-adding and value-creating. What I define as value-adding in curriculum development is the process by which we often trim and add topics in existing modules, or we consolidate existing modules, rearranging and expanding existing topics into different modules. In this way, dated materials are weeded out and state-of-the-art materials are covered in order to better prepare the NUS student for the working world. In business language, such a process is driven by market forces and often short-term, requiring frequent reviews.

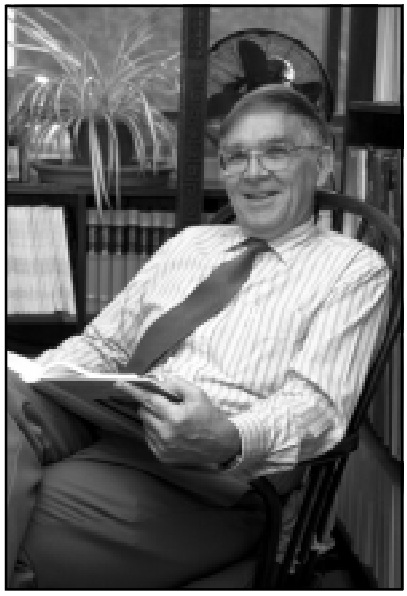
In contrast, we can radically reform our curricula and this requires both vision and boldness. Successful implementation of such curricula will create value within the NUS student. In business parlance, this means to take the initiative to create demand for new products and stimulate market forces, for instance in the development and marketing of products and services such as SONY Walkman, MacDonald's fast food and FedEx rapid mail delivery.

So this concept begs the questions: Can we value-create our curricula? How can we achieve this? I have no answer, but I believe that by leveraging on the strengths of NUS' faculties and schools, we can create new disciplines such as Engineering Science, Engineering Humanities, Engineering Art, etc. For instance, I understand that a well-known US university has offered a degree course in Computer Music. New niche areas can be created through this radical approach, and often the reward and the competitive edge that are derived will last a long time.

Conclusion

NUS now enjoys an excellent reputation. However, we cannot afford to rest on our laurels. We must continue to revisit our modes of education and move forward, for the success factors of the past and present may not guarantee success in the future. By sharing and utilising the rich supply of expertise and resources available within and outside NUS, we can both add and create value in the education programmes we offer our students. In this way, the NUS graduate will have undergone programmes that will enable them to readily crossover into different disciplines and develop new disciplines that will determine his or her market value. ■

On Stimulating Students with Scientific Method



Associate Professor John Elliott
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There are numerous excellent books making science accessible to the general public. They follow a tradition of public education that goes back at least to T.H. Huxley, famous for his public lectures on evolution, physiology and other scientific topics, in the 19th century. As science became increasingly specialised and arcane, such books become ever more desirable. However, the emphasis is now away from specialism in undergraduate education, and towards a general education.

This should be welcomed. It is not good to have educated men and women ignorant of basic science in a world so utterly dependent on technology. However, it means that university teachers in the sciences, like Huxley before them, cannot assume that all their students are familiar with the basics of science.

In the social sciences, this problem has always been present. For example, the NUS intake of students in the Faculty of Arts and Social Sciences has always drawn heavily from Arts and Commerce 'A' level streams. In Psychology, the student intake has been from Science:Arts:Commerce in roughly the proportion 1:2:1. Therefore, it has always been necessary to enlighten (or disillusion) students as to the nature of scientific Psychology, even before it was university policy to require breadth across faculties. Moreover, even students from a science background are not always clear about the nature of scientific enquiry.

First (or early) impressions are important. A ploy used successfully on me when I was an undergraduate was to present and discuss a problem in human behaviour that ought to be answerable. In my case, I think it was something to do with how one would decide between the rival merits of different chocolate bars—a mundane topic but not as easy to solve as it might superficially appear. My colleagues and I have sometimes adopted a similar approach, in which we indicate the range of research topics ongoing in the department/programme, and what these involve in practical terms. The principle is to create some enthusiasm by helping students to see the wood as a whole, in its diverse glory, before they plunge into the trees.

In employing such methods, the teacher's enthusiasm is vital. Student feedback very often mentions enthusiasm with appreciation. But how does one inspire enthusiasm about dry stuff like the pedantries of methodology, the niceties of questionnaire construction, or the details of statistical analysis of data?

In a context of critical thinking, this is quite possible. One has only to open *The Straits Times*, and examples of claims, counterclaims and reports of findings or issues are there for the taking. Once students realise that there are flaws to be detected, they become quite motivated. For instance, it has recently been discovered that long distance travel may create a liability to deep vein thrombosis[1]. Blood clots, forming in the veins of the legs of sedentary passengers, may later circulate and block smaller vessels, resulting in coronary thrombosis or stroke. On 23 January 2001, nicely in time for the first few lectures of the semester, *The Straits Times* reported British research with student volunteers in the use of tight socks "similar to compression stockings worn by patients in danger of developing potentially fatal blood clots after operations".

Unfortunately, the researchers had apparently combined the tight socks with aspirin, which thins the blood. Consequently, it was impossible to know whether the reduced levels of calf swelling found in the treatment group were the result of the socks, the aspirin, or a combination of both. It is possible that the newspaper report did not do justice to the researchers. Nevertheless, getting students to spot and discuss the problem as reported provided an excellent real-life illustration of what on the face of it was a breach of a fundamental requirement of good experimental design—do not confound your variables. The example was one of several that provoked considerable student discussion in the forum provided for the purpose. Not only did it serve to clarify the necessity of only altering one variable at a time, it helped illustrate the need to be critical when reading reports.

Stimulating interest by showing the relevance of methodology and clear thinking is perhaps easier in Psychology than in some disciplines, since everyone has personal experience of people. However, it is a technique that I believe serves well generally the earlier in the course the better. It can be extended to more numerate skills, for example inviting students to determine by a suitable test whether reported numerical trends (e.g. in crime or birth rates) are significant. The technique is much better if the students can be got to find the flaws for themselves, rather than having them spelled out didactically, so that the lecturer/tutor acts as an enthusiastic facilitator rather than as a demonstrator. ■

[1] *I am grateful to my colleague, Dr Lynne Tan, for agreeing to the use of this example, which comes from our joint teaching.*

Real-life Learning

Associate Professor Clive Briffett
Affiliate, CDTL
Department of Real Estate

The current enthusiasm generated for virtual reality seems to have lost all sense of trying to achieve the ultimate experience: Experience of the Real World! So I would like to offer some suggestions for conducting courses with real-life inputs that engender enthusiastic participation and bring about meaningful experiences leading to active implementation in the real world.

In the 1960s, Professor Reg Revans, a remarkable practitioner-academic based in the Manchester College of Science and Technology, took on the UK business school community and lost. Experienced in working in mines and hospitals then, he proposed mutually supportive management methods to tackle local troubles. Because he heavily criticised existing business management schools for trying to teach management in the classroom instead of on the job, his ideas were thrown out as they were thought to divide the faculty (Revans, 1980). The lucrative MBA courses that were emerging at the time meant big money and status to those running them and adopting so-called action learning programmes at the work place were considered to be a poor substitute. The professor left for Belgium where he received more enthusiastic support for his ideas and worked there for ten years in exile.

Today, the concepts of action learning, as defined in the paper 'Putting Action Learning into Action' (Boddy, 1981), are conducted all over the world. The idea is simple. The formula for learning that Revans provided for is as follows:

Learning = programmed learning
(books, lectures, tutorials, etc.)
+ questions + ACTION + reflection

In this model, questions about real live issues are discussed in groups and must lead to something being done. Subsequently, the group must follow through with an assessment of the effectiveness of those actions.

In other words, run a workshop at the workplace involving real people with real problems and get the group to come up with action proposals that will solve them. Different character and personality backgrounds, levels of expertise and education, lengths of experience and familiarity with different aspects of the company's activities combine to solve a problem. Feedback often shows that problems more often arise from attitudes (rather than technical constraints) and from specialist behavioural beliefs and values (rather than market forces). Group dynamics can assist in identifying problems within a different context and engendering ownership responsibilities sufficient to solve them.

What has the above got to do with real-life learning in the university? Well, the principle of interaction with real problems on a multi-disciplinary basis in a hands-on situation can increase stimulation and motivation sufficient to implant learning that leads to active implementation. Such principles can be incorporated into any academic courses so as to make them more practice-based and aligned with what is actually going on in the real world.

Ask any of your ex-students what they remember most about their undergraduate days and they will inevitably cite some practical experience derived from skills training in the field site, an outside visit or a practical laboratory experiment they conducted themselves. Alternatively, they may recall an eccentric practitioner who shared his real-life work, a weekend retreat or an overseas trip designed to gain actual hands-on experiences. Rarely will they recollect the details of any indoor weekly lecture or the drudgery of sit-down, inwardly digesting tutorial presentations. In other words, real-life experience made more impact, put things into perspective, made students feel, smell and hear the sights and sounds of life and positively react to them. Try as we may, the virtual experiences of computer simulations or the interactive events of campus-based life will never entirely fulfil the human senses and instil new innovative learning paradigms like the real thing in the outside world.

Most staff would admit that voluntary participation in tutorials is very weak amongst many of our local students. Questions asked are usually minimal, reactions limited and visible stimulation low. The reasons are all too familiar: lack of confidence, face saving, insufficient prior knowledge of the subject, inappropriate seating arrangements, excessive domination by the tutor, lack of interest, calculative minimal involvement, risk aversion, means-to-an-end strategy, etc.

Having suffered through all these problems over the last fifteen years, I have devised a number of strategies that I would like to share with you:

- Minimise your classroom-style tutorials and avoid holding regular, repetitive-style events each week. In lieu of classroom tutorials, organise project briefings with small groups (of not more than six students) in your office, or encourage students to consult with other staff from other faculties and with external consultants.
- Inject variety into your programme by organising competitive discussions, consultant workshops, site visits, weekend field trips, outside speaker seminars, student one-day conferences, integrated projects, computer simulation games exercises, video sessions, etc.

- Avoid asking direct questions of large groups. Instead, encourage students to actively involve themselves in small groups so that you can interact with each group as they participate in projects. Never give any lectures in tutorials.
- Get the students to run their own tutorials. Keep your intervention to a minimum.
- Present your own case studies based on current research and encourage students to assess and comment on these studies.
- Set exercises designed to evaluate completed practical work by using an assessment checklist. In my case, I run a review process on the quality of Environmental Impact Statements and students are encouraged to assess these in small groups and compare them.
- Set project work based on real-life problems in society that are topical. Test students on their creative and participative skills. Devise ways in which one project can lead into another so as to utilise material already collated.
- Encourage good initiative and devise peer assessment methods that students can get involved in. Give immediate feedback to project work submitted and discuss directly with the students.
- In cross-faculty elective modules, select groups comprising international and cross-faculty students. Such a multi-faceted mixture often leads to increased self-learning from each other.

To illustrate how real-life learning was injected into a Fourth Year undergraduate, Environmental Studies course, a one-day/optional weekend site visit was arranged to the Banyan Tree Resort, Bintan, during which students were asked to evaluate for themselves whether the development was indeed an environmentally friendly response to resort design as it claims to be.

Site visit to Banyan Tree Resort, Bintan (March 1998)

The objectives of this site visit were to gain:

- hands-on experience of a real-life development project in an ecologically sensitive area;
- first-hand accounts from practitioners (e.g. planners, designers, hotel management and maintenance personnel) about problems experienced and how they were resolved on-site;
- awareness of different types of environmental impacts that need to be considered and how each can be assessed through impact analysis;
- appreciation of users' needs and how they were met;
- understanding of how local Bintan residents have benefited from such developments (e.g. increased employment opportunities, demand for locally produced food stuff and for the supply of local building materials);
- knowledge of how such developments affect the wider environment including an assessment of cumulative effects arising from other adjoining developments nearby.

Student feedback showed that they gained the following outcomes from this study:

- a very pleasant and fulfilling experience;
- an insight into the importance of minimising damage to existing fragile ecosystems through environmental planning, design and management processes;
- a broader appreciation of socio-cultural effects caused by such developments and the associated changes in lifestyle they might have for local residents;
- a practical demonstration of how one such development should not be considered in isolation but be seen as part of a country, regional or total global environment.

And for the few who stayed over the weekend, the relaxing and stimulating experience of being treated as special guests was a fitting end to a pleasant real-life experience not to be easily forgotten.

Essentially the philosophy associated with real-life learning is to make learning appear to be fun, yet demanding, and to be full of variety, but requiring a need to adopt a structured and organised approach. Making projects challenging and interesting encourages greater motivation. If you are worried about individual assessment, design three projects, one for individuals, the second for small two or three person groups, and the third for five to six person groups. Using a wide range of activities that are designed for the student to take an active role, to be fully involved and to get enthused through interaction with peers will hopefully reflect the experiences of the real world. It is perhaps pertinent to note that in the real world, the rate of learning must be equal to, or greater than, the rate of change (Garratt, 1997). After all it will not be long before students become real people who have to perform in the market.

Site visit to Banyan Tree Resort, Bintan (March 1998)

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Site visit to Semakau Offshore Landfill (January 2000)

Advising Graduate Students on How to Write Technical Papers

Associate Professor C.M. Wang
Associate Director, CDTL
Department of Civil Engineering

When doing research, as much effort should be put into writing a paper on the work done as was expended in the preparation/execution of the project and the subsequent data analysis. So as not to waste the time spent on the research, the paper should clearly present the objectives, research methodology and findings of the research to the reviewer/reader.

Unfortunately, our graduate students tend to write their research papers in a hurry so that they can get on with the next research project. With so little time given to preparing each paper, it is no wonder that a relatively large number of papers are not acceptable for publication due to poor presentation. Consequently in this article, I wish to share with fellow teachers the advice that I give to my graduate students on how to write technical papers.

Writing Tips

A good research paper is one that is "clearly, precisely and attractively" written such that not only is the reader enticed to read it, but also he or she can easily understand the contents[1]. Contrary to popular belief, clear equations are insufficient for effective communication in a scientific paper; they should be accompanied by clear prose that leads the reader through the paper. The following are some guidelines for your students to consider when writing different sections of a scientific research paper:

Title: Make the title short, attention grabbing, and above all, reflect the central theme of the paper. It should not claim generality when the paper is specific in nature.

Author's name and affiliation: Spell your name and affiliation in the same way for each paper so that all your papers are cited accurately. Include your email address if you wish for readers to communicate directly with you.

Abstract: People make a decision to read or not to read the rest of the paper based on the abstract. So summarise concisely the main claims (and secondary claims, if any) of the paper and the conclusions drawn from the study. Limit the number of claims to prevent confusing the reader as to what the key message of the paper is. Reserve other major claims for future papers. Do not include references, figures and equations in this section.

Introduction: Describe briefly the importance of the area of study. State why your paper should be published (e.g. explain how your work fills an important gap in existing knowledge/provides new methods for solving difficult problems). Provide the background of the current work (e.g. review existing literature or give an overview/history of the problem).

Problem definition: Define the problem/topic studied, explain basic terminology, and establish clearly both the objectives and hypothesis/ assumptions of your paper. Note that papers are often rejected for publication because authors provide only objectives without any hypothesis.

Theoretical formulation, materials and methods: Present the theoretical formulations and assumptions plainly. List comprehensively all materials and methodology used so that readers are able to reproduce your study. For experimental studies, do not describe everything through a diary of events; instead, reorganise details into a coherent account. Use more efficient and accurate methods, rather than outdated techniques. Give credit to other people's work through references: furnish details of concepts discussed and/or refer to sources.

Results: Tabulate results, but withhold the inferences for the 'Discussion' section. As papers with tabulated results will obtain more citations because later researchers can use your results for comparative purposes, compose tables well with proper headings for rows and columns. If possible, use attractive figures, graphs and other diagrammatic representations to illustrate data clearly—well-designed figures make the paper come alive. Common faults in research papers include inappropriate usage of tables and figures that confuse readers, display of wrong statistical tests, and/or lack of sound statistical analyses.

Discussion: Reviewers will accept your paper for publication if they are convinced that your results are valid. So provide adequate and convincing arguments, mathematical proofs, examples, equations, statistics, patterns/trends, opinions and ideas beyond the collection of tabulated and graphed numbers. Make comparisons with previous researchers' results (if any). Suggest applications for your work. Propose future work, but be frank and realistic about what needs to be done as a continuation.

Conclusion: Summarise/highlight and stress main ideas and contributions.

Acknowledgements: Give credit to persons and organisations for any technical and/or financial help you received while completing the study. Also acknowledge any copyrighted material for which you have permission to use.

References: Give complete information on references.

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What To Do on the First Day of a Class

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The first impression is crucial in any work dealing with people, and more so with students attending a new course. As the first day of a class will often set the tone right for the rest of the course, I would like to offer some suggestions on what to do during that crucial day.

Breaking the Ice

1. Be friendly: Course evaluation research has shown that students appreciate instructors who show interest in them as individuals. Once established, this rapport often improves student motivation and attitude towards the course. Becoming acquainted with your students also fosters a congenial environment that will help to stimulate discussion on coursework later on. Some ways to build rapport include the following:

- **Arrive at the classroom at least 15 minutes early** so you can check that the various facilities are in order and chat informally with students as they arrive.
- **Introduce yourself.** Who you are and what you are like will interest new students. So begin a relationship with your students by sharing something of yourself and about your enthusiasm for the subject. You can also direct students to your webpage for more information.
- **Introduce the other staff members** who will be teaching the course.
- **Get to know each student's name.** In a small class, ask students to introduce themselves and talk about the reasons for taking the course or their interests. You can also get students to pair up, introduce themselves to each other and then perhaps share a positive comment about their partner with the rest of the group. Both methods usually create a more relaxed atmosphere and help students to get to know one another in a new class. Another method, perhaps more suitable for a bigger class, is to ask students to write their names clearly in large letters on place cards or sticky labels for all to see.

2. Introduce the course: The first session is an ideal opportunity to introduce to students the course objectives, course outlines/syllabus, assessment criteria, assignments, expectations of student participation, learning activities and reading resources for the subject. Such items should preferably be listed in a handout. In addition, encourage students to raise questions and concerns regarding the course.

3. Lay the ground rules: Although students should learn autonomously, set some simple ground rules in classroom management so as to optimise learning and minimise unnecessary disruption. Common ground rules may include: punctuality in starting and ending the lesson, mandatory contribution in learning activities, deadlines for assignments, and showing respect while others are speaking. To obtain the students' compliance, obtain their feedback on the feasibility of the ground rules.

Conducting the First Lesson

While the first session can be used to introduce the course, including the first lesson during that session may stimulate the students' interest in the subject. Conducting the first lesson early will also help you to know more about the students and their attitudes, motivation, interpersonal skills, learning styles and prior knowledge about the subject. Advance awareness of the gaps in the students' knowledge will help you to plan subsequent lessons.

To involve students in the learning process, use a diversity of approaches, e.g. combine direct instructional modes with active learning strategies. The more active the learning strategy used, the more you will be able to direct students' attention to the relevance of the lesson and interest them in the rest of the course. The learning activities conducted should allow interaction in a non-threatening manner (e.g. assign group tasks). Avoid being critical or judgmental; give encouragement and praise when appropriate. A possible lesson plan for the first session could be as follows:

- Present the learning objectives for the lesson.
- Give a short ungraded quiz to test degree of pre-existing knowledge. Alternatively, start the session with a group brainstorming or discussion on a 'real-life' problem.
- Explain the basic concepts of the subject matter. If possible, provide some linkage to previous courses the students may have learnt. Handouts given should be concise, effective and efficient.
- Depending on the availability of time, incorporate additional activities (e.g. case studies, problem solving) to reinforce learning.
- In closing, give encouragement and constructive feedback about the class interaction and summarise key issues covered in the class. To stimulate further intellectual curiosity, present a take-home problem to the students.

Evaluating the Lesson

To help you evaluate the quality of learning, request students to reflect on the lesson at the end of the first session. Ask them to write down two key points about what they have learnt during the lesson, what they like best about the lesson, and/or questions and concerns they still have about the course. Tailor future sessions to address some of these needs. Consequently, this process of reflecting on what went right and which aspects need to be modified in our lesson planning inevitably helps us improve our teaching effectiveness. ■

Problem-Based Learning *Symposium 2001*

Theme:
Issues & Challenges

Date:
29 August 2001

Venue:
NUSS Guild House
Kent Ridge

Call for Registration

The need for a paradigm shift and the re-defined goals of education are by now familiar: we want our learners to be able to learn effectively, independently and continually. How might we help them to achieve this?

Problem-based learning (PBL) is increasingly seen as a useful approach. In PBL, learning is problem-motivated, active, interactive and collaborative, thereby empowering learners to initiate and manage their own learning. Hence, the goal of this symposium is to introduce some concepts of PBL, and to demonstrate how these are typically worked out in current implementations of PBL at NUS. At present, these are largely in the applied disciplines that clearly lend themselves to the PBL approach. A further and equally important goal is to explore how PBL might be extended to other disciplines in a variety of contexts and constraints.

Educators of today who want to find out how this alternative teaching strategy is used to enhance student learning are encouraged to attend the symposium. The registration fee is S$103 and includes morning and afternoon teas, lunch and conference materials.

For more information about the event and/or to register online, please refer to *http://www.cdtl.nus.edu.sg/pbl/*. Alternatively, please contact:

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How NUS Students Learn: An Update

After a fruitful year of research, the three-year long study on NUS students' motivation and strategies to learning and studying is now entering its second year and has been modified in the process. Scrutiny of the initial data collected indicated that: (a) the Biggs' (1987) original approaches to learning model was not very successful in measuring NUS students' study approaches, and (b) the Study Process Questionnaire used in this project needed some changes to suit the Singaporean context. Consequently, in-depth analyses were carried out to identify questions that needed modification based on cultural aspects, use of language, and perception and understanding of the questions. To corroborate these changes, a small-scale qualitative study comprising of interviews with students was carried out in April 2001.

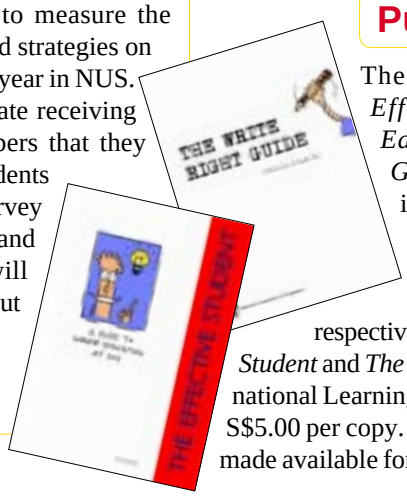
During July and August 2001, CDTL will be conducting a second university-wide survey of second year students using a revised questionnaire. The objective is to measure the changes in students' attitudes, motivation and strategies on learning after they have completed their first year in NUS. To carry out this survey, we would appreciate receiving the same assistance from all faculty members that they extended last year. We also thank all the students who participated in the July–August 2000 survey and subsequent smaller qualitative surveys and interviews. We hope that NUS students will continue to freely offer valuable comments about their learning approaches. ■

Stay COOL and DRY!

Since CDTL moved to its present premises on the 6th and 7th floor of the Central Library Annexe in mid-1998, both staff and students have sweated profusely under the hot sun or been drenched by rain while walking along the uncovered stretch between LT4 and CDTL.

Well, we have good news—everyone will no longer need to suffer! Since mid-March, workmen have been busy erecting a covered walkway along the above-mentioned route. So from now on, expect to arrive at our office cooler and drier than ever before! With this improved and more comfortable access in place, we hope to see you more often at CDTL. ■

Publications Going Public



The success of previous editions of *The Effective Student: A Guide to Higher Education at NUS* and *The Write Right Guide: An NUS Writing Guide* (given free to incoming freshmen) have been so encouraging that we have printed a limited number of extra copies of the latest edition of each title (8th and 3rd editions respectively) for sale to the public. Both *The Effective Student* and *The Write Right Guide* will be sold at this year's national Learning Festival in October for a nominal price of S$5.00 per copy. In addition, *The Write Right Guide* will be made available for sale to all local junior colleges. ■

Announcement & Call for Papers

TLHE 2002 Symposium

2nd Symposium on Teaching and Learning in Higher Education

Theme:

Paradigm Shift in Higher Education

4–6 September 2002

Following the success of the First Symposium on Teaching and Learning in Higher Education held in July 2000 at NUS, this Second Symposium will continue to bring together teachers to promote and exchange ideas, solutions and experiences across a broad range of topics related to teaching and learning in higher education today. The emphasis is on the changes in learning processes and learning outcomes as a result of the shift from the instruction paradigm to the learning paradigm. Our ultimate goal is the increased awareness of pedagogical issues that result in enhanced teaching and learning.

The official language of the symposium is English. A pre-symposium workshop will be conducted by eminent educationists on 3 September 2002. In addition, an exhibition showing the latest teaching aids/equipment and books on teaching and learning will be held in conjunction with the symposium.

Call for Papers: Three copies of abstracts (not exceeding 300 words) should be sent to the symposium secretariat by email, fax or post. Abstracts should clearly indicate the corresponding author's mailing address, telephone and fax numbers, as well as email address. Authors of accepted abstracts will be asked to submit the final paper of 6 pages, including figures, tables and other illustrations. Both abstracts and final papers will be fully reviewed. The symposium proceedings will be published in book-form and made available to all participants at the conference. (*NB*: By submitting a paper, you are committing to have at least one author register for the conference if the paper is accepted.)

Important Dates:

Submission of abstracts	1 December 2001
Preliminary acceptance	2 January 2002
Submission of 6-page manuscript *(3 hard copies and 1 soft copy)*	1 March 2002
Notification of final acceptance	1 May 2002
Final paper submission *(camera ready)*	1 June 2002
Early registration deadline	1 July 2002

Registration: The registration fee for the symposium is S$400, if the payment is made before 1 July 2002, and S$450 after this date. (Cheques/bank drafts should be made payable to National University of Singapore). The fee will cover a copy of the symposium proceedings, admission to all sessions, lunch and refreshments. The registration fee for the pre-symposium workshop is S$100.

For more information about the event and/or to register online, please refer to *http://www.cdtl.nus.edu.sg/tlhe/*. Alternatively, please contact:

Ms Rita Roop
Centre for Development of Teaching & Learning
National University of Singapore
10 Kent Ridge Crescent
Singapore 119260
Email: *cdtrrk@nus.edu.sg*
Tel: 65-874 8884 • Fax: 65-777 0342

Landmark Workshops

CDTL recently hosted two important sets of workshops. The first set was a series of four dialogue sessions conducted by the University Curriculum Committee to discuss the new General Education Requirement (GER) scheme. Held on 2, 5, 14 and 16 March 2001, these sessions were attended by over 110 staff members and offered a wonderful opportunity for staff to seek clarification about the rationale behind the GER and the mechanics of its implementation. In general, participants enjoyed the frank and open discussions and found the exchange of views fruitful. *(For more information about the issues raised, look out for a forthcoming issue of* CDTL Brief *that will summarise the proceedings of these dialogue sessions.)*

The second set consisted of a meeting between Deputy Vice-Chancellor Prof Chong Chi Tat and various Deans and Heads of Departments held on 21 April 2001. During this dialogue session entitled 'Ensuring Quality of Teaching/Learning: Roles of Deans and Heads', CDTL Deputy Director Prof K.P. Mohanan gave an overview of recent staff policy changes and curricula innovations before chairing the ensuing discussion. For more than two hours, the Deans and Heads raised questions on performance appraisal, teacher appraisal, peer review, student feedback, curricula matters, as well as service issues that Prof Chong clarified immediately where possible. With regards to problems that required further study and investigation, Prof Chong promised that these will be looked into in due course.

Photographs: Dialogue sessions with Deans and Heads (21 April 2001)

TEACHING & LEARNING highlights

Faculty of Arts & Social Sciences

New Teaching Initiative

The Department of Geography has devised a module in which students take responsibility for their own learning. 'Learning by doing' is the motto of the new GE 3230 *Geography Field Studies* module. Students have to engage in a variety of teamwork projects involving different kinds of fieldwork in an overseas context. The module encourages students to test out methods learnt in classroom settings and apply them in different situations. Students also learn to explore the gaps and links between 'field studies' and 'classroom' teaching. Projects are designed to encourage teamwork, creativity and knowledge of basic skills required to collect primary data.

During May and June 2001, 29 students took part in an overseas *Field Studies* course in Northern Thailand. Students involved themselves in various projects related to broad themes such as: urban and cultural landscapes; cultural tourism and hill-tribe peoples; ecological tourism; highland development projects and small village communities; migrant communities in Northern Thailand; and the clashes between resource exploitation and environmental conservation. Future *Field Studies* modules are scheduled for Thailand, Malaysia and Indonesia. ■

Students learn about the myriad of ethnic groups and migrant communities of Northern Thailand

Faculty of Business Administration

Advanced Modules for USP Students

Two special advanced modules have been designed specially for University Scholars Programme (USP) students to challenge and develop their intellectual and creative potential. The course, *Conflict Resolution: Negotiation and Mediation*, introduces the theory of negotiation and conflict resolution through short debriefs, discussions and papers. To foster negotiation and mediation skills effectively, the course features an open, experiential approach that allows for maximum participation, experimentation and self-reflective learning. Participants are expected to apply and demonstrate acquired knowledge through practice and exercises. Moreover, participants from different backgrounds are selected for the course so that they can interact and share different perspectives on conflict resolution. A good classroom environment is also maintained to encourage participants' creativity and spontaneity.

Synthesising the theory and practice of Treasury Managment

The other course, *Treasury Management*, synthesises the theory and practice of treasury management. Exposed to a wide range of theoretical financial concepts, tools and techniques as applied to treasury activities, USP students will gain an understanding of international financial markets, the accompanying financial instruments and innovations, the key functions of a Treasury department in a multinational firm, and latest trends in treasury management. To obtain current market practices and informational prices, students can also access a subscription-based electronic information provider of financial and economic data. ■

Faculty of Dentistry

Teaching Outside of the Classroom

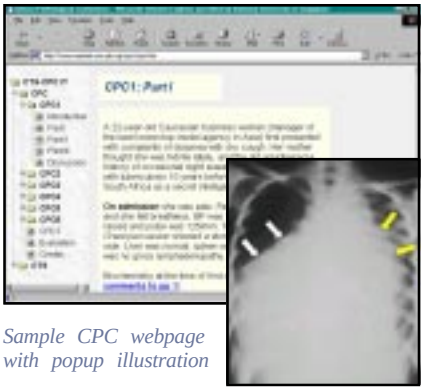
Classroom teaching has limits in exposing students to certain environments and/or experiences. In our *Community Health Study* module, we have designed a series of lectures that are tied in with tutorials and field trips. One of the projects, entitled 'Caries risk assessment of Singaporean kindergarten children', allows Third Year dental students to physically enter society, assess the needs of people/children, and develop a deeper sense of responsibility for the community. Students are guided to establish a new learning mode, involving the cognitive, affective, and volitional components of their minds. Through this more holistic approach, we hope to bring joy, creativity, and a sense of community to dental students who will be Singapore's next generation of oral health caregivers. ■

Dental students assessing the dental health of kindergarten children (May 2000)

Faculty of Medicine

Clinico-Pathological Conferences Go Online

The Clinico-Pathological Conference (CPC) is an important teaching experience for Fourth and Fifth Year medical students. CPCs have been in the curriculum of the Medical Faculty for many years and used to be traditional classroom affairs. Since 2000, the CPC format has been transformed into a completely IT-based, online exercise. The aims were to present clinical information in a structured, holistic manner that is meaningful and engaging as well as simulates the real world of clinical practice and decision-making. The multi-faceted, multi-disciplinary, interactive presentations are sequenced with breaks that elicit responses to multiple-choice questions and direct discussions with staff clinicians. They are linked to appropriate reference texts and other web-based resources that elaborate on the case under discussion. An additional bonus is that students now no longer have to travel across town from their different hospital attachments to attend CPCs. ■



Sample CPC webpage with popup illustration

Faculty of Science

Read & Present: Developing Thinking & Communication Skills in Biology

In the course, AB4220 *Behavioural Ecology*, students not only learn the course contents, but also develop analytical and critical thinking as well as communication skills. Each week, all students read a research publication specifically chosen by the lecturer for its wide theoretical basis, introduction to critical research methods and/or broad species and geographic coverage. Each student must take turns to give a small class presentation on the weekly paper and then generate a discussion among classmates. Consequently, students must know the factual material and develop communication strategies. If necessary, students are helped to plan their sessions. All students and the lecturer must also participate in the discussions. In this innovative teaching method, the lecturer only functions as a facilitator of the process, rather than as a leader or a dominator in the weekly discussion, thereby encouraging students to learn how to 'learn by themselves'. ■

Group discussion during AB4220 tutorials

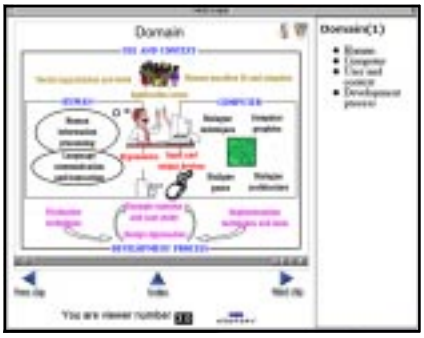
Timetable 'Deregulation' to Achieve Small-group Teaching in Lab Sessions

Achieving small-group teaching in laboratory sessions, especially for big classes, is often difficult due to timetable constraints, scarcity of equipment and teaching assistants, etc. After much consideration in the Department of Biological Sciences, timetable constraints were identified as the root of the problem. So efforts were made to 'deregulate' the timetable of the BL1103 *Physiology* practicals. A small laboratory was dedicated for this module. Every experiment was scheduled 9–12 times per week such that the practical schedule truly complemented the lectures. With the help of CITA (Science), a software was developed that enabled students to sign up for their desired slots at the beginning of the term, which solved the problem of timetable clashes. It also allowed students to run the practicals at their own pace. Computers and software were purchased for data-acquisition and to give on-screen instructions. Consequently, students were able to do their experiments independently. Even though a small number of teaching assistants were mobilised, a TA:student ratio of between 1:5 to 1:15 was achieved. ■

Students accessing computerised aid for BL1103 practicals

School of Computing

Multimedia Learning Clips



Making concrete abstract concepts of human-computer interaction via multimedia clips

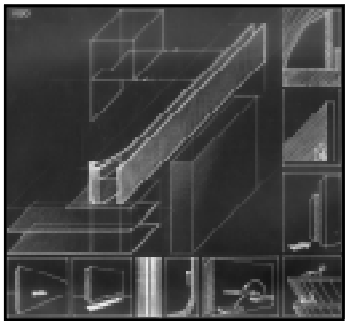
The School of Computing offers a course, CS3240, on *Human-Computer Interaction*. We have been developing multimedia learning clips as resources to aid student understanding of the course material. Designed on the principles of visualisation and concretisation, these clips help to reify abstract ideas and concepts through the predominant use of visual and animated content (text is used only minimally) with synchronised audio narration to explain the content. Navigation controls are available to move to a preceding or following clip so that students can view the clips in logical sequence if they want a mini-lecture. The multimedia clips are developed in the QuickTime format and deployed on a streaming server, allowing students anytime, anywhere access to the learning resource.

During Semester 2 of academic year 2000/2001, we surveyed students on the helpfulness of the multimedia clips in facilitating their learning of course materials. 4% of students said that it made no difference, 23% said that it helped a little, 37% said that it helped moderately, 23% said that it helped a lot, and 2% said that it helped tremendously. Although 11% of students reported that they had not tried to access the multimedia clips, we are very encouraged that on the whole 85% found the clips helpful for learning. ■

School of Design & Environment

Seeing Deeply in Architecture: Unraveling the Narrative

The challenge to First Year architecture students was this: to design architecture with its milieu of spatial sequences and sensorial nuances through the appreciation and analysis of a piece of poetry or prose. This narrative approach, though new to the student, is not an uncommon form of design impetus and process in architecture. Several seminal projects sharing this heritage include the Danteum by Giuseppe Terragni and Daniel Liebeskind's Jewish Museum in Berlin. The potency of the narrative is evidenced in its ability to be both the scaffolding from which to launch the design process as well as the compass by which consistent perspective is gained during the varied stages of design development. The student's journey from the immateriality of the 'word' to the materiality of the 'built' began with works which spanned Wallace Stevens to Alfian Sa'at and culminated in a range of projects as rich and diverse as their origins. ■



Student work based on No Other City: The Ethos Anthology of Urban Poetry

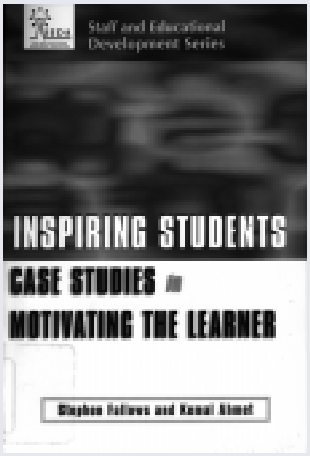
Calling All Writers...

CDTL invites articles on any teaching and learning topic for its various newsletters and information sheets, such as **CDTLink**, **CDTL Brief**, **Ideas on Teaching**, and **Successful Learning**.

To submit articles for consideration or to obtain more information, please contact:

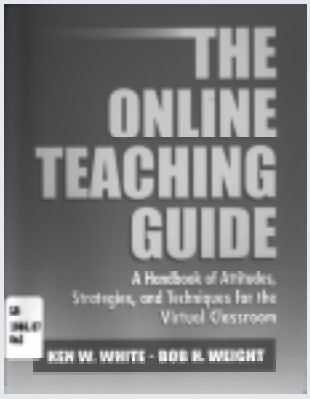
Ms Verena Tay • Centre for Development of Teaching & Learning • National University of Singapore • 10 Kent Ridge Crescent, Singapore 119260 • Email: *cdttayv@nus.edu.sg* • Tel: 65-874 8047 • Fax: 65-777 0342 ■

Book Reviews



Title: *Inspiring Students: Case Studies in Motivating the Learner*
Authors: Stephen Fallows & Kemal Ahmet (eds.)
Publisher: Kogan Page, London, 1999
Pages: 192 pp (Paperback)
Source: CL Main Shelves
Call No.: LB 1065 Ins

With the increasing emphasis on cross-disciplinary studies, students have to study other subjects beyond their primary academic pursuits, whether they like it or not. A compilation of 19 essays, *Inspiring Students* shares welcomed information on how to motivate students to learn subjects that they are not interested in. Part of the Staff and Educational Development Association series of books, *Inspiring Students* contains British, American, Canadian and Australian case studies of how to effectively teach science, business, communications, health studies, mathematics, computer studies, and statistics to disinterested students. A comprehensive survey of what strategies work in cross-disciplinary teaching. ■



Title: *The Online Teaching Guide: A Handbook of Attitudes, Strategies, and Techniques for the Virtual Classroom*
Authors: Ken W. White & Bob H. Weight (eds.)
Publisher: Allyn and Bacon, Boston, 2000
Pages: 192 pp (Paperback)
Source: CL Main Shelves
Call No.: LB 1044.87 Onl

With the spread of online teaching throughout the world, *The Online Teaching Guide* is a timely publication. Drawing from the over 100 years of collective teaching experience by the faculty members at the University of Phoenix Online Campus, the book presents numerous practical guidelines on how to create and manage online classrooms in 14 easy-to-read essays. In particular, *The Online Teaching Guide* contains much advice on how to provide and maintain interpersonal contact and effective teaching through an impersonal medium such as an online campus. Other key issues dealt with are curriculum design, assessment and feedback. The experienced or novice online educator will find the book essential reading. ■

Advising Graduate Students on How to Write Technical Papers

...continued from page 6

Appendices: Insert, as appendices, information that is not provided in the main text (e.g. questionnaires and software used).

Besides paying attention to good organisation and unambiguous presentation of objectives, facts and conclusions, you should spell accurately and write grammatically so that the reader does not have extra problems in understanding what you are trying to say.

Concluding Remarks

We as teachers play a critical role in helping our graduate students to become effective writers. Apart from encouraging students to say what they mean clearly, precisely, concisely, and attractively, we can also relate to them the satisfaction of having one's research paper being cited and appreciated by fellow researchers as well as being archived for perpetuity (if the paper is published). Suitably inspired, students will probably begin to write their own papers. The more experience they gain in writing papers well, the easier they will find to write even more and better papers.

Endnote

1. G. Batchelor. (1997). 'Research as a Life Style'. *Applied Mechanics Review, ASME*. Vol. 50, No. 8, R11-R20. ■

New **Faces** at CDTL

We are pleased to introduce to you our latest group of CDTL Affiliates:

- A/Prof W.A.M. Alwis (Dept of Civil Engineering),
- A/Prof Grace Ong Hui Lian (Faculty of Dentistry),
- Prof Jeffrey Pinsler (Faculty of Law),
- Dr N. Sriram (Dept of Social Work & Psychology),
- A/Prof Benito C. Tan (Dept of Biological Sciences),
- A/Prof Tan Chay Hoon (Dept of Pharmacology),
- Mr Tan Tuck Choy (Dept of Computer Science), and
- A/Prof Albert Teo (Dept of Management & Organisation),

their appointments being effective from May 2001 till June 2002. They will serve as resource personnel and support CDTL's work by contributing their ideas, giving feedback on projects as well as help in CDTL's training programmes.

We also welcome Ms Ong Ming Hoon who joined us in October 2000 as a Management Support Officer, and Ms Mok Leh Woon who will serve as a temporary Research Assistant from 14 May till mid-August 2001. ■

Continuing **Professional Development** for NUS Faculty

Rationale

Effective teaching that facilitates high quality learning is an important mission of NUS, documented in the university's strategic plan. To achieve this, NUS is continually exploring how it can enhance the quality of its teaching programmes.

In July 2000, the Professional Development Programme (PDP) for new faculty was implemented and now lays the foundation for good teaching practices. While such a programme is helpful, it is believed that more can and should be done for the advancement and growth of all faculty members in NUS. As part of NUS' overall strategy for faculty development, the Continuing Professional Development Programme (CDPD) has been introduced to encourage all NUS faculty to continually upgrade their professional skills.

Aims and Objectives

The CPDP has three broad aims:

- To encourage academic staff to keep current of trends and thinking in the areas of teaching and learning.
- To promote and propagate good practices and techniques in teaching.
- To enhance staff awareness of their own teaching, thereby leading to reflective teaching and innovations in teaching for effective learning.

Description of CPDP

The Continuing Professional Development Programme (CPDP) consists of 2 components:

A. Faculty Enrichment Programme (FEP)

The Centre for Development of Teaching & Learning (CDTL) will conduct a series of 2-hour sessions—seminars, dialogue sessions, workshops—for faculty to attend. These sessions will deal with a variety of topics on one or more of 5 identified dimensions of education:

1. *Classroom practices*

These sessions will focus on instructional skills (e.g. effective lecturing, interactive lecturing, conducting tutorials/labs). They will also deal with mechanics and tools like lecture delivery style (e.g. voice projection, speaking pace, variation, gestures), class management techniques, IVLE, the use of *PowerPoint*, audio-visual aids, etc.

2. *Means of instruction and assessment*

These sessions will concentrate on pedagogically sound practices and the means to achieve various learning outcomes (e.g. syllabuses, teaching materials, classroom activities, assessment, use of educational technology).

3. *Methodological principles*

These sessions will deal with the principles underpinning good practices, such as active learning, collaborative learning, interactive teaching, problem-based learning, case study method, and so on. Awareness of the options at this level is the first stage in the shift of focus from the instructor and the process of instruction in the instruction paradigm to the learner and the process of learning in the learning paradigm

4. *Higher order learning outcomes*

These sessions will concentrate on learning outcomes that go beyond understanding and application of knowledge. Such learning outcomes include evidence-based knowledge, learning transfer, independent learning, critical thinking, creative problem solving, independent inquiry (i.e. knowledge construction), and so on. Effective functioning at this level is what distinguishes an outstanding educator from an excellent teacher.

5. *Issues in educational psychology and pedagogical theory*

These sessions will focus on more macro issues such as educational paradigms, constructivism, learning theories, theories of knowledge, goals of higher education, teacher appraisal, and so on. Such sessions will be relevant for: (a) educationists and education reformers (at the department, faculty and university levels), and (b) people in positions of power who make decisions on hiring, promotion, tenure, and policies.

Attendance at faculty-level workshops and courses offered by other institutions of higher learning on pedagogical matters may also be considered on a case-by-case basis as participation in the FEP.

B. Ancillary Activities Programme (AAP)

As part of the Ancillary Activities Programme, faculty members might consider engaging in activities such as the following:

- conducting workshops and seminars,
- attending conferences, and/or
- writing/publishing papers,

that deal with topics of pedagogical interest and/or are informed by reflection on teaching and learning in the department, faculty or university.

How CPDP Works

To participate in the CPDP, staff members should involve themselves in both the FEP and the AAP. Documentation of such activities is to be included for purposes of review/ appraisal in the Teaching Portfolio (Re: Annex A to OHR Paper 0053/2001, Item 3: 'Participation in Educational Programmes'). For more information about the CPDP, please check: http://www.cdtl.nus.edu.sg/cpdp. ■

The Flashlight Program

NUS is a subscribing member of the *Flashlight Program for the Study and Improvement of Educational Uses of Technology*. Flashlight, in turn, is a program of the Teaching, Learning, and Technology Group, an affiliate of the American Association for Higher Education.

The Flashlight Program helps institutions study the ways in which technology can be used to improve education. These findings can be used to validate good practice, spot problems, and improve teaching and learning with technology. The Program offers a wide range of assistance in the form of:

- world-famous toolkits (e.g. *Current Student Inventory*);
- workshops, talks, and conferences;
- consulting and external evaluation;
- *The Flashlight Network*, an electronic newsletter;
- resources (including articles, case studies, beta instruments, etc.).

In 1992, the Flashlight Program began developing an evaluation 'tool kit' of validated survey items, cost analysis methods, and other resources that educational institutions could use to study and steer their own uses of technology. The creation of such a tool kit was prompted by the facts that: (a) certain hopes and fears about specific uses of technology are quite universal, and (b) many of those uses of technology tend to produce better learning outcomes (according to decades of educational research).

As a tool, Flashlight has several features that are highly relevant to the field of assessment and program evaluation:

- It focuses on choices about learning and teaching made by students and educators (how they use technology) as a way of explaining the outcomes of technology investment.
- It focuses on the practices that tend to produce better learning outcomes as a way of reinforcing data on outcomes, or if data on outcomes are not directly measurable, as a way of estimating quality.
- It surveys and summarises changes in teaching and learning practice across the large number of courses that are typically needed to create substantial improvements in programmatic outcomes.
- It investigates negative and positive hypotheses about technology.
- It develops an evaluation tool kit that is easy enough to understand and use so that the necessary numbers of faculty and staff can be involved in designing studies, gathering data, and using results.

In particular, the Flashlight *Current Student Inventory* has many potential uses:

- It shapes efforts to use technology to improve courses, courses of study, and other facets of an instructional program.
- It provides grounding of departmental and institutional efforts to create a 'vision worth working toward'.
- It assesses and reshapes technology-based services (e.g. library and academic computing).
- It plans programs to improve the accessibility of the instructional program (e.g. distance learning).
- It restructures student evaluation of faculty performance.
- It provides data about a course of study or the institution that individual faculty can use as a context for thinking about their own teaching.
- It designs evaluations of grant-funded projects.

A most valuable service of the Flashlight Program is *Flashlight Online*. *Flashlight Online* provides web-based access to an e-version of Flashlight's *Current Student Inventory*, the toolkit for designing surveys that help to assess the effectiveness of educational uses of technology. With *Flashlight Online*, faculty members of NUS can easily create and deploy surveys to assess the effectiveness of their use of technology for the purpose of teaching and learning.

If you wish to have a *Flashlight Online* user account, please submit your application from the following URL: *http://www.cdtl.nus.edu.sg/flp/*. If you have any enquiries, please feel free to contact Associate Professor Chee Yam San, the NUS Flashlight Online administrator, at *dcscys@nus.edu.sg* or Ext. 2902.

Useful Links

AAHE Teaching, Learning, and Technology Group. *http://www.tltgroup.org/*.

Flashlight Online. *http://flashlightonline.wsu.edu/*.

Flashlight Program. *http://www.tltgroup.org/programs/flashlight.html*.

Rationale of the Flashlight Program. *http://www.tltgroup.org/programs/elephant.html*. ■

The IVLE Discussion Forum:

Creating an effective environment for debate & critique

Mr J.A. Gilles Doiron
Principal Educational Technologist, CDTL

If you haven't used the Integrated Virtual Learning Environment (IVLE) Discussion Forum feature in your course yet, you may wish to consider setting up one or many forums for your students to express and refine their understanding of important concepts. A discussion forum can enable effective learning when used by a small group with specific individual assignments to be posted for peer-to-peer review and critique.

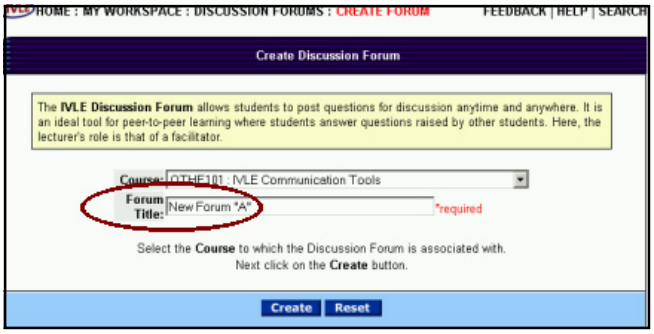
Creating Discussion Forums in IVLE

To take advantage of this feature you need to have already created an IVLE Course Outline for your particular course. IVLE tools such as the discussion forum, chat rooms, course FAQs, etc. are linked to the course title and course code submitted when the IVLE Course Outline was created. If you haven't created a Course Outline, access the IVLE workspace (*http://ivle.nus.edu.sg/*) and log in. At the top of the screen, click on 'Create'. Then fill-in the information requested and 'Submit' each section (Particulars, Lecturers, Schedule, Prerequisites, Synopsis, etc.) and your course outline information will become available to all.

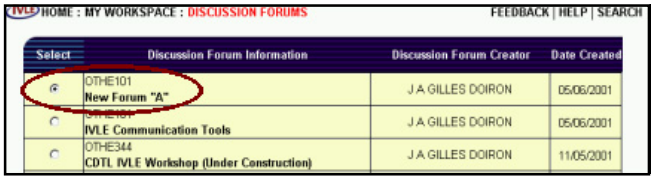
Now, to create a discussion forum. Access your IVLE WORKSPACE (*http://ivle.nus.edu.sg/workspace/staff.asp*) and select 'Discussion Forums' under 'Tools Setup' (right of the screen).

All of the Discussion Forums you have created are displayed on the DISCUSSION FORUMS screen. If you wish to modify or delete an already existing discussion forum, select it by clicking the radio button and then clicking 'Modify' or 'Delete' at the bottom of the screen. If you wish to create a new discussion forum, then click on 'Create Discussion Forum'.

The CREATE FORUM screen shows all the Course Outlines that you have created. Select the course outline for which you wish to create one or more discussion forums. As default setting, the course title is assigned to the discussion forum to be created. However, it is better that you key in a more meaningful title if you are going to create many forums for one course (i.e. one per work-group for many small groups). Click on 'Create' at the bottom of the screen. The forum is automatically created and ready for you to specify its properties and input your initial instructions.



Your new discussion forum is displayed on the DISCUSSION FORUMS screen. To modify it, select it by clicking the radio button and then click 'Modify' at the bottom of the screen.



You can modify the forum particulars such as the course code, title and start and end date; indicate the access rights i.e. open to all or to class roster only; and assign manager rights to other staff. You can also chose to be notified by email when new items are posted to the forum, and select the number of topics that the forum user will see on one screen. Finally, you may choose to delete messages after a certain number of days from their posting. However, this is NOT recommended for a collaborative group-work environment. As a revision, students should be able to review all messages posted during the semester.

Please note the 'Guideline' menu option. Advise your students to read these tips adapted from the European Telework Online (*http://www.eto.org.uk*), as they provide the first-time user with an understanding of discussion forum etiquette, and how to communicate effectively within the constraints of the discussion forum structure. All users of the discussion forum are also reminded to read the 'NUS Acceptable Use Policy' and the 'NUS Netiquette Guidelines'.

Continued next page...

The IVLE Discussion Forum

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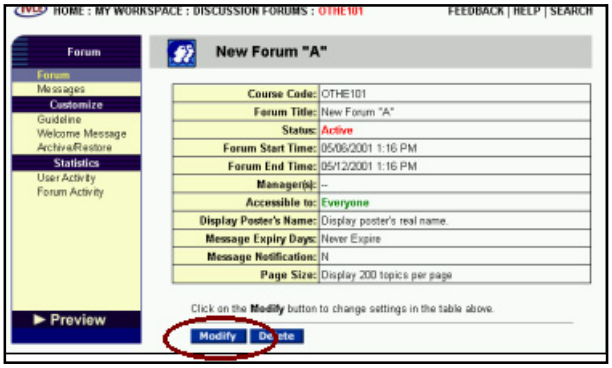
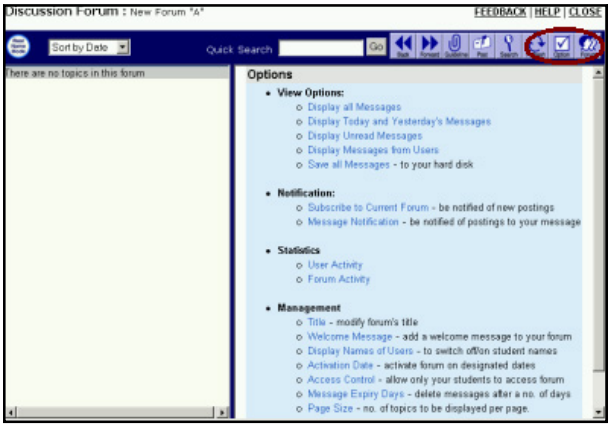
Your discussion forum should have a welcome message to its users. This welcome message could also include a set of instructions for online interaction and/or an online assignment. Keep in mind that students may need to be trained, i.e. in a face-to-face session, on how to use this communication tool and on what is expected of them in their assignment.

Mr J.A. Doiron conducting a computer applications workshop for CDTL (June 2001)

Also note that you can access information on who has accessed the forum. Specifically you can see who has posted topics and who has posted messages. You can also get a breakdown of the 'Forum Activity' indicating the total number of topics and messages, and the amount initiated by students and by staff.



These options for modifying your discussion forum are also available directly in the DISCUSSION FORUM environment. Access your newly created discussion forum and select the 'Option' icon at the top right of the screen. Note that there are a few additional features in the 'View Options' and that there is a 'Delete Messages' possibility under 'Management Options'. The 'Delete Messages' option allows you to either delete all messages in the forum (useful for housekeeping after the semester) or from an indicated time period. However you can delete any message in the forum at any time by clicking on it and using the delete key from the keyboard.



A Tool for Student-Centred Learning

In our quest to develop independent critical thinking learners, we must reflect and plan our strategies for student-centred learning activities and work-group social interaction. Online communication tools, such as the IVLE Discussion Forum, are a novel feature in the array of teaching and learning strategies. The IVLE Discussion Forum(s) for your course can be designed to create an opportunity for students to express their opinions and knowledge, evaluate the position of others, debate issues and synthesise new perspectives. The bad news is that there are few good models to emulate. The good news is that times of uncertainty create opportunity, and that your experience in using discussion forums may become a valued standard. ■

CDTL

The Centre for Development of Teaching and Learning (CDTL) engages in a wide range of activities to promote good teaching and learning at the National University of Singapore, including professional development, teaching and learning support, research on educational issues, and instructional design and development.

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