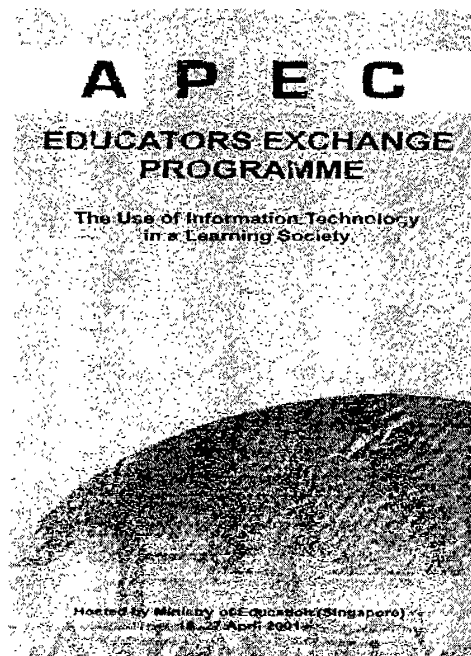# 亞太經濟合作(APEC)會議

「教育人員交換計劃」－學習型社會的資訊運用

(The Use of Information Technology in a Learning Society)

出國人：　服務機關：國立成功大學
　　　　　職　　稱：計網中心教研組組長
　　　　　姓　　名：蔣榮先
出國地區：新加坡
出國期間：九十年四月十七日至十九日
報告日期：九十年四月二十七日

CO1
/C09001799

目　錄

壹、 會議目的

　　本次有關「學習型社會的資訊運用」會議源起於第二屆 APEC 教育部長會議；該次會議為了因應千禧年的環球變遷，及新世紀帶來的人類思維轉換，所設定的會議的主題是：二十一世紀的學習型社會之教育(Education for Learning Societies in the 21st Century)。而其中重要的一項子題－「學習型社會的資訊運用」係由新加坡政府負責主導及籌劃，負責參與之會員體為澳大利亞、加拿大、中國大陸、中華台北、香港及馬來西亞。因而此次我國教育部發函各級學校參與此次會議，並鼓勵各級學校教師參與教育人員交換計畫，此次個人很榮幸代表學校參與此次會議。由於出席之各會員體代表均無大學教授與會，個人在資訊之專業性及敬業精神上均明顯領先各國，使得各會員體官方代表均對我頗為禮遇，個人深感欣慰與感激。同時，也藉此會議之便透過教育人員交換計劃之機會，期能為國家實現學術外交之功能，提昇國家能見度，進而使我國在國際社會中受到認同與肯定。

貳、　會議過程與心得

　　本次會議於四月十六日上午假新加坡教育部大樓由地主國新

加坡教育部長張志賢先生揭幕，會議行程總計十二天，相當冗

長；大部分會員體代表均僅參加部分之行程，而個人代表學校參

加之行程為十七日至十九日共三天，重要之參觀交流行程如下：

Date	Programme
17 Apr (Tues)	
0900-1100	**Visit to ETD Production Centre** IT Training for Teachers Media and Infrastructure Support
1400-1700	**Participation in IT Training Workshops** Educational Technology Development Technologies for Learning at Digital Lab@Vista
18 Apr (Wed)	
0900-1700	**Attachment to schools - Integration of IT at schools** The Chinese High School 673 Bt Timah Road
19 Apr (Thur)	
0900-1700	**Attachment to schools - Integration of IT at schools** Dunman Secondary School 21 Tampines Street 45

　　參觀之重點乃在體驗由於科技發展一日千里，造成知識生產

的快速，形成知識的爆炸，使個體有學習的必要；也由於知識的

迅速過時，使個人必須不斷的更新知識。再次，由於社會變遷時距的縮短，知識的作用，無論是在生活、工作或個人的發展上，均比過去扮演更重要的角色，發揮更積極的功能。個人必須持續充實或更新，才能免於落伍，不為社會所淘汰。因此，在資訊社會中不斷的充實知識，追求新知，已成為個人生活的方式，也是個人生存的條件。這不但是個人學習的原動力，也是建立終身學習社會的基礎。

此外，參與討論之各會員體代表也一致認為，由於世界經濟的發展以及資訊的交流，使世界各國相互依存的關係日益密切，地球村民休戚相關，利害與共。因此，個人必須學習與整體地球村相處合作的能力。同時，國際間經由貿易、旅遊、電視等媒體的傳播，使全球生活彼此密切影響，地球村民生活越來越相似，但不同文化間的衝擊依然存在。各會員體代表也對新加坡在實施資訊教育的過程中投入的心力，抱持相當肯定的態度。個人並期盼在這樣日益多元化的地球村中，我們國家在面對教育體系的改革與挑戰時能夠以更為積極的態度去面對。

參、　　學習重點－各國網路教學環境之評估

此次出席會議之另一目的，係目前本校計網中心正評估網路教學平台及網路教學環境之建置，正好可以利用此機會觀摩亞洲各國目前實施之現況，以作為本校規劃之參考。

大致而言，APEC 會員體國家中以新加坡在網路教學環境之建置上投入較大之心力，故個人特別商請赴新加坡全國在網路教學上使用最廣泛的國立新加坡大學(National University of Singapore)參觀，以實地瞭解在這樣一個全亞洲排名第五的大學中實施網路教學的現況。

以下將簡略介紹該校目前開發及使用之網路教學平台，並比較其優劣點：

1、新加坡大學之網路教學環境係由該校之 Centre for Instructional Technology (CIT)負責，該中心類似本校計網中心所屬之多媒體製作中心，編制上除專職之主任外，另有專職程式設計人員約二十人，該中心自行開發及維護自有之 網 路 教 學 環 境 － Integrated Virtual Learning Environment (IVLE)，以提供給全校 1,800 教師，及 28,000 學生使用，目前宣稱已有 700 門課程(從單純講義上載及具影音授課功能者皆計入)。同時該教學軟體目前已授權給包括英

國，菲律賓及馬來西亞等 14 所大學所使用，就實施成效而言，確實足以借鏡。

2、 值得思考的是，該系統自 1998 年上線使用，功能十分完備，且學生使用非常普及，但該校對"網路教學"之定位卻十分清楚－網路教學之目的在於輔助及補救正規授課之不足，即學生永遠得進教室上課，該校不接受經由網路教學授課或考試而取得之學分認證措施，以該校實施多年之經驗卻不接受學分直接承認措施，足見網路教學確實有其限制性，有關這點擬提供教務處在規劃學分承認制度上參考。

3、 個人覺得 CIT 這個單位是結合遠距、網路教學及視訊會議而成的。而成大在這方面的器材不輸給新加坡大學，只是他們整合的比較好而已，若將教務處格致堂、計中多媒體中心及醫學院視聽中心結合，其實就像新加坡大學的 CIT。

4、 授課內容經拍攝後帶子，再經後製與教材結合後，呈現於網路上供學生傳統教學外之再學習媒介，而個人至該中心參觀及使用後發現網路教學的畫面，乃新加坡大學用微軟提供的 Media Server 就可簡易做出影音及教材同步的畫面。在一年半前本校工設系鄧怡莘老師已採用此模式。計中多媒體中心也有做成手冊及提供網路教學教師轉 asf 檔案的服務。

5、 目前多媒體中心負責網路教學師生的經費報帳及技術支援、管理多媒體中心並教導來本單位學習的學生、配合計中其它組的網頁製作、負責編擬計中的新生簡報及撰寫視訊簡介腳本、舉辦座談會等...，而人力部分則僅一位約聘人員，若依新加坡大學 CIT 的模式，配合未來成大網路教學平台之建立，計中多媒體中心變成專門協助全校老師教材製作、後製處理

的單位，老師只要專心在自己的專業領域即可，若朝向此發展，其人員有增加之必要及專職負責的工作區分（才能深耕其工作，做出專業的成品）、需要採購很多有版權的多媒體軟體及素材美工圖片，其工作人員必須時常在自已負責的領域對外進修習得新的技法及軟體以便協助全校不同老師的需求。

以下即為新加坡大學CIT所使用之設備

醫學院的視訊
會議室已有此
設備

台上的設備，格
致堂都有了

這部份就像本校的格致堂、華立廳及國際會議廳

這部份就像本校的格
致堂及國際會議廳的
控制室
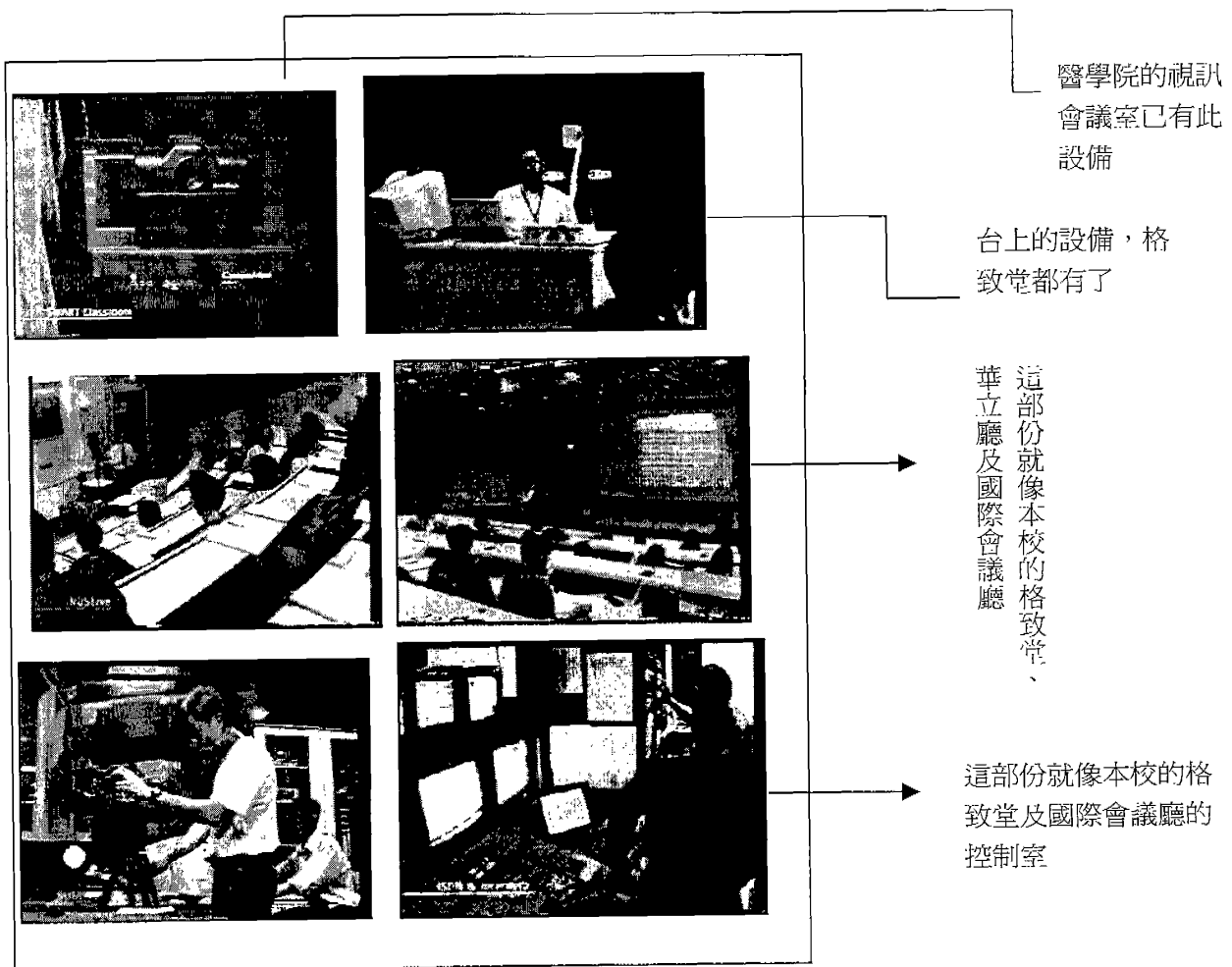
新加坡網路教學平台介面介紹─**IVLE4.0**

該網路教學平台系統由新加坡大學 Centre for Instructional Technology 這個單位所設計的。

http://www.cit.nus.edu.sg/index.htm

Centre for Instructional Technology's task is to provide technical service, support and nurture innovations in teaching and learning within the campus. We continuously undertake a variety of projects, including evaluating new tools to improve the teaching and learning experience for our staff and students.

Announcements

- 23 Apr, 2001 - Launch of NUSCast version 2.0
- Mar, 2001 - Release of iDEAS issue 5.
- Website K Drive application, click here.
- IVLE Dec 21, 2000 - IVLE upgraded to version 5.
- SMA Programmes for Student Assistantship Scheme

CIT's services includes ....

Integrated Virtual Learning Environment - NUS' enterprise wide e-learning platform.
Courseware Development - The Courseware Development group supports lecturers in the exploration, development and application of IT.
Live Webcast - This service includes a network TV application on NUSNET that broadcasts live NUS courses as well as informational programmes.
On-demand Webcast - This services includes playback of archived lectures, as well as public talks and seminars.
Video Conferencing - Video conferencing allows the exchange of information using real-time video and audio technologies for live interaction
Video Production - In lieu to video conferencing, video production this unit is capable of multimedia production, recording and editing
Facilities Planning - CIT works closely with Office for Estate Development and Computer Centre in planning teaching facilities and multimedia laboratories.

Upcoming Live Events on NUSLive

- **Fundamental of Science Conference** (link will be made available soon)
Date & Time : 21 - 24 May, 6 pm daily
Location : University Cultural Centre
Organiser : Department of Biological Sciences and Department of Chemistry, Faculty of Science

...click for more Public Talks & Seminars on NUSLive

註冊完進入的畫面，由此選擇管理者(老師)或是學生的畫面。

Back to OPENIVLE website

About IVLE

IVLE Roadmap

Course Outline

SEARCH

News

User Guide

Feedback

Best viewed with Internet Explorer 4.0+

Welcome to the OPENIVLE Live Demo!

You are about to enter into a live OPENIVLE environment. There is no need for any server setup or software download to "test drive" IVLE. We have also removed the user authentication which is in the actual OPENIVLE product.

Simply select to enter either.

◉ Staff Workspace ○ Student Workspace

Enter

管理者   學生

15.09   IVLE won e-NNOVATOR Awards 2000 - Open Category

An award scheme to generate e-ideas that can contribute to the quality of life. It is jointly organised by Channel NewsAsia and Standard Chartered Bank in association with Yahoo!

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學生進入該系統所看到的畫面：

STUDENT Workspace

COURSE OUTLINE

Search & Bookmark

Delete Bookmark

COURSE RESOURCES

Active Chatrooms

User Guide

Registered Courses

AB1234

IVLE001 *GE1102*

Calendar

Chat Room *(Start: 12/10/00 04:37PM - End: 12/04/01 04:37PM)*

Discussion Forum *IVLE Demo*

Lecture Plan *IVLE Demo*

Workbin *IVLE Demo*

Bookmarked Courses

123456 *Web Technology*

Calendar

Chat Room *(Start: 13/03/01 02:41PM - End: 13/09/01 02:41PM)*

FAQ *Web Technology*

Discussion Forum *Web Technology*

Workbin *Web Technology*

BA291 *Introduction to business*

Chat Room *(Start: 25/10/00 06:05PM - End: 25/04/01 06:05PM)*

Discussion Forum *Introduction to business*

Quiz *Introduction to business*

學生及老師的畫面差別只在框線所在。

STAFF Workspace

COURSE OUTLINE

New Course

Edit Course

Delete Course

Search & Bookmark

Delete Bookmark

COURSE RESOURCES

Chat Rooms

Course FAQs

Course Website

Distribution List

Lecture Plans

Quizzes

Workbins

User Guide

Courses

123456 *Web Technology*

Calendar

Chat Room *(Start: 13/03/01 02:41PM - End: 13/09/01 02:41PM)*

FAQ *Web Technology*

Discussion Forum *Web Technology*

Workbin *Web Technology*

BA291 *Introduction to business*

Chat Room *(Start: 25/10/00 06:05PM - End: 25/04/01 06:05PM)*

Discussion Forum *Introduction to business*

Quiz *Introduction to business*

IVLE001 *GE1102*

Calendar

Chat Room *(Start: 12/10/00 04:37PM - End: 12/04/01 04:37PM)*

Discussion Forum *IVLE Demo*

Lecture Plan *IVLE Demo*

Workbin *IVLE Demo*

OTHE152 *Digital Signals and Systems*
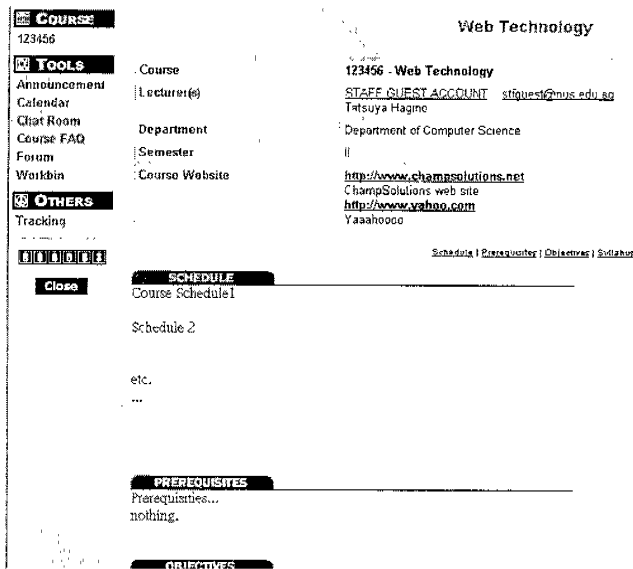
Calendar

老師進入該系統所看到的畫面：

使用者可自行增、減課程

學生選課程後所看到的畫面包括：課程名稱、演講者、所屬單位、學期、課程所放網址

課程目錄、必修課程、目標、教學大綱 c

Web Technology

Course	123456 - Web Technology
Lecturer(s)	STAFF GUEST ACCOUNT stfiguest@nus.edu.sg
	Tatsuya Hagino
Department	Department of Computer Science
Semester	II
Course Website	http://www.champsolutions.net
	ChampSolutions web site
	http://www.yahoo.com
	Yaaahoooo

Schedule | Prerequisites | Objectives | Syllabus

SCHEDULE
Course Schedule1

Schedule 2

etc.
...

PREREQUISITES
Prerequisities...
nothing.

OBJECTIVES

學生可以使用的工具有：佈告欄、系統 FAQ、workbin(上傳檔案、課業注意

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事項、指派之課業)

這部份跟中山大學陳年興老師所設計的平台，概念有點雷同。

Course Tracking Report 部份可以看到使用該課程的狀況(有幾位上線，誰上得最多..)

並虛擬主機提供教育性軟體給使用者

提供新加坡大學專屬頻道(影音演講&上課資料)

http://www.cit.nus.edu.sg/NUSLive/index.htm
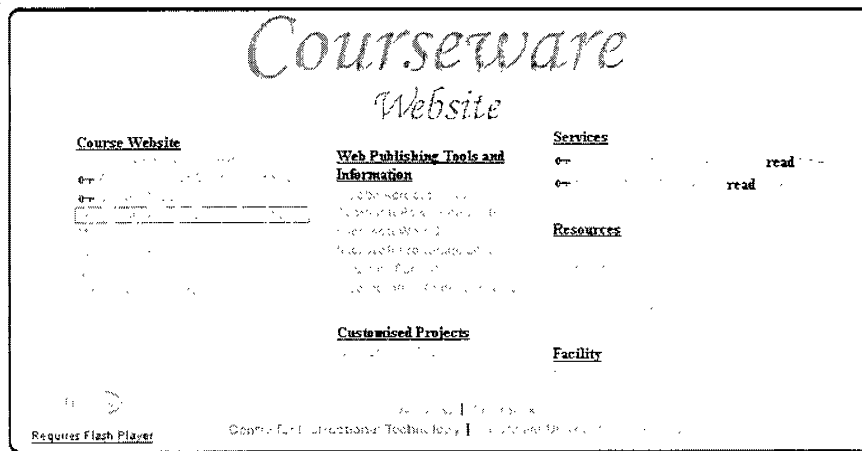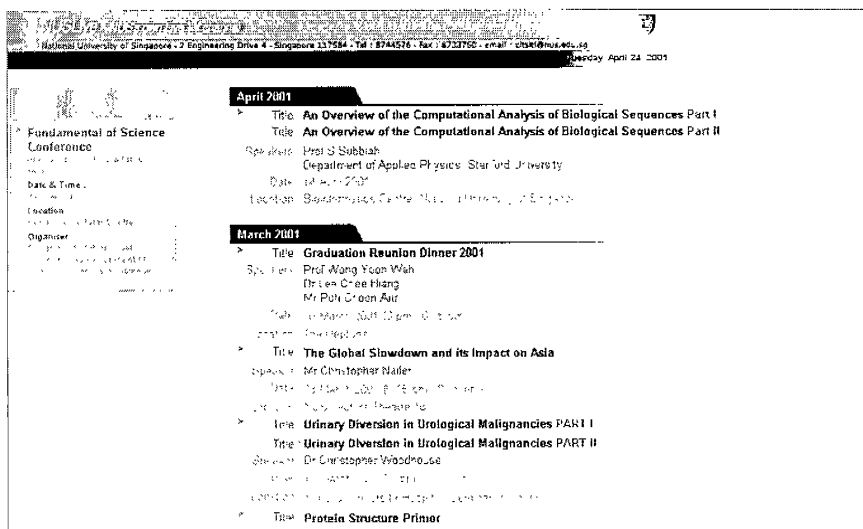
影音畫面
跟朱治平老師
的很像，但，
其影像處理部
份有些不同，
新加坡大學這
個不台採用微
軟的 media
server，影像是
asf 檔，連結採
mms://mod.nu
s.edu.sg/....
的方式，但
play 停止，則
影像就會不見，這點很有趣。

老師或開課使用者進入其專屬畫面後，可以自行增加課程及輸入課程相關內容，而其輸入的資料就是學生一進入該課程所看到的全部畫面。

COURSE
- ▶ Particulars
- ▶ Lecturers
- ▶ Schedule
- ▶ Prerequisites
- ▶ Synopsis
- ▶ Objectives
- ▶ Syllabus
- ▶ Practical Work
- ▶ Assessment
- ▶ References
- ▶ Miscellaneous
- ▶ Course Websites
- ▶ Hit Counter

TOOLS
- ▶ Announcement
- ▶ Course Calendar
- ▶ Discussion Forum
- ▶ Other Tools

SERVICES
- ▶ IMS

Preview

Lecturers

Select	Name	Type	User-ID	Write Access
○	STAFF GUEST ACCOUNT	Lecturer	STFGUEST	Owner
⦿	LIYN	Lecturer		No

Click on the options below.

New | Modify | Move Up | Move Down | Delete

Click on **New** to add another lecturer

若要輸入中文，則要選 htm 的格式，若選 txt 的格式，則會顯現亂碼。

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老師及使用者可使用的其它工具 :

The **IVLE Chat Room** provides you with real-time communication with your students in a virtual space. You must first set a date and time before hand, with your students, for the online chat session. During the pre-arranged time slot, all parties can enter text by typing on their respective keyboard and the entered text will appear on the other users' monitors. You will be able to communicate simultaneously with a group of students in the Chat room irrespective of their physical location.

The **IVLE Course Frequently Asked Questions (FAQ)** is a web productivity tool which aids you in building a repository of answers to commonly asked questions that you receive from your students. Instead of repeating the same answer to every student, you can now direct him or her to this repository, onto which you have posted the answers.

The **IVLE Lecture Plan** helps you to organise your lesson plan and schedules in an easy to read web page. This resource is a useful reference for students who want to know what to prepare before a lecture. You can include the required readings for each session, the websites to visit and even the pre-lecture or post-lecture quizzes.

The **IVLE Quiz management** system has been redesigned with better features to enable you to create online questions. Apart from the improved interface, the quiz system also provides grading and statistical information.

The **IVLE Workbin** provides you with an assignment repository onto which your students can submit their assignments. Alternatively, you can also publish documents for your students to download. The workbin is ideal for exchanging large files without jamming up your email system. The environment is fully customisable to allow different groups of students and tutors to view, upload or download documents.

— COURSE RESOURCES —

Chat Rooms
Course FAQs

Course Website

Distribution List

Lecture Plans
Quizzes
Workbins

To create or modify a chat room, a course FAQ, a lecture plan, a quiz, or a workbin, go to the workspace and under the COURSE RESOURCES section, click on Chat Rooms, Course FAQs.

肆、　　檢討與建議

1、 今年十月份亞太經合會議將在上海舉行，嫻熟國際談判事物的前行政院長蕭萬長先生在最新一期的天下雜誌(2001 年四月號)中撰文「台灣如何不被國際邊緣化」指出，「台灣要避免被國際邊緣化，就必須採取務實作法，爭取在國際社會的曝光率，在區域組織中要有實質貢獻，被認可是不可或缺的一份子，APEC 是一個重要戰場…」，足見此類會議將是一個可以爭取國際地位的舞台。

2、 本校目前各單位所擁有之設備中，應足以支援全校目前之網路教學、遠距教學、視訊會議、教學簡報設計、系所簡介拍攝及製作等工作；但目前顯然在本校中擁有設備之單位並未完全提供上述服務，以新加坡大學之經驗，CIT 中心即整合所有之資源而提供上述之全部服務項目。

3、 網路教學之趨勢必然走向普及化，故而如何使文史科系或藝術相關系所之教師在一個易學易用的友善環境下，努力將教學內容充實，以嘉惠學生，這也是計網中心未來在評估及發展網路教學平台上將參考的重點。

附　　件

新加坡大學 CIT 中心簡介

iDEAS

Instructional Development, Enhancement And Support

Founded 1905

THE NATIONAL UNIVERSITY
of SINGAPORE
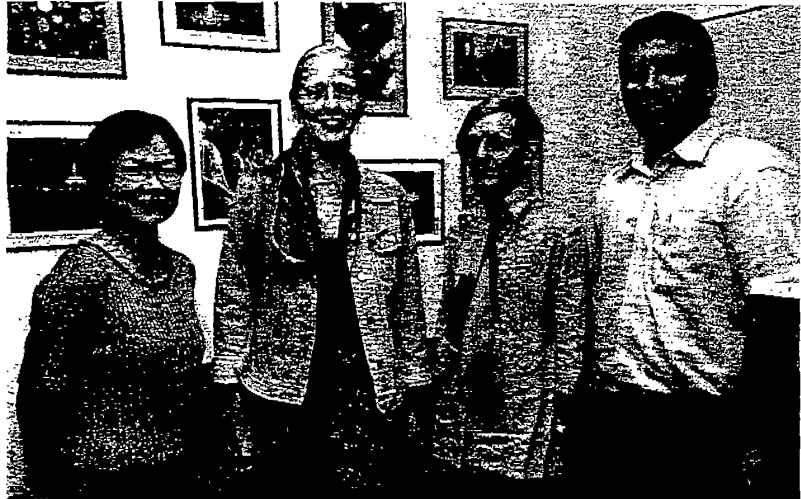
The brains behind the *e-daf* project. From left to right: Cheng Ing Ru, Lecturer; Rita Maria Niemann, Lecturer; Silvia Neitzke-Neumann, Fellow; Dr Chan Wai Meng, Lecturer; from the European Studies Programme, Faculty of Arts and Social Sciences, the National University of Singapore

E-daf A Hit With Students and Lecturers

For many German language students at the National University of Singapore (NUS), learning the foreign language will never be quite the .same again. The European Studies Programme, Faculty of Arts and Social Sciences, recently introduced *e-daf* (elektronisches Selbstlernzentrum fur Deutsch als Fremdsprache), an innovative programme initiated and implemented with the Centre for Instructional Technology's (CIT) technical support. This project represents a milestone in applied research in the area of language pedagogy, as it is the first virtual self-access and resource centre for German language learning in the region with a broad and comprehensive coverage.

e-daf is designed to provide a one-stop service for German learners in the virtual space of the Internet. The website, launched in August 2000, aims to provide students with a means to supplement their classroom learning with a wide array of interactive multimedia learning materials. This includes

hypertext notes, exercise for various language skills, grammar, vocabulary, relevant links, and online audio and video materials. At the same time, it will also facilitate teaching and provide important support to the German teaching staff in realizing the Programme's curricular objectives and the methodological principles for the German language modules.

E-DAF DEVELOPMENT

According to Dr. Chan Wai Meng from the European Studies Programme, there were several issues that led to the creation of *e-daf*.

"Firstly, there is an inherent problem in German language learning in Singapore—namely the very great geographical distance between Singapore and German speaking countries. This represents a problem for us because it means that there's a lack of authentic communicative situations for our students," he said.

A moment please ...

The Centre for Instructional Technology (CIT) would like to extend a warm welcome back to all the University's staff and students in this brand new semester. The Centre has many exciting programmes and activities planned in our efforts to ensure that education is fun and enriching to both lecturers and students.

I'd like to commend the creative and innovative spirits of the lecturers in the e-daf project. This is a great example of how a group of academia, pitching in their best efforts, uses Information Technology to their advantage for efficient dissemination of education materials and promotes interactivity.

At the same time, the successful collaboration between CIT's multimedia crew and the Faculty of Medicine in the Practical Assessment of Clinical Examination Skills (PACES) Video further reaffirms our role and responsibility in creating and producing quality education materials.

The last semester has also been a fruitful one for the Centre. We have won the E-nnovator Award for our e-learning platform, the Integrated Virtual Learning Environment (IVLE). It is heartening to see the hard work and commitment put in by all are given due recognition.

In this new semester, lecturers and staff will see plenty of new and exciting developments in the CIT's website. Do remember to mail in your application for IT student assistants. The forms are available on our website for your convenience. Look out for the IVLE Version 5, due anytime in the beginning of the semester. Do make a date to have an interactive lesson in our SMART Classroom.

As usual, last but not least, the Centre's newsletter has been given a revamp in keeping abreast with readers' suggestions. Have a great semester.

ACTING DIRECTOR

Ravi Chandran

cithead@nus.edu.sg

Secondly, a lack of space in the University has made it difficult for the Programme to set up a self-access centre. Such a centre is important to students' learning development because, as Dr. Chan pointed out, students have different kinds of motivation, needs and interests. For the more highly motivated students, it is important that they have access to learning materials as and when needed.

Recognising these issues and given the excellent technical facilities available, the idea to set up a virtual self-learning centre was born.

E-BENEFITS

Besides the obvious benefits students get from *e-daf*, it proves to be advantageous to all lecturers. "If I hand out a worksheet to 20 students in class, there'll probably be 20 students making very individual mistakes. This is impossible for me to trace, and I can only pick a few examples that would give me a vague feeling of the progress. Also, with the traditional teaching methods, I cannot use a multi-layered approach to correct mistakes, because what's comprehensive for one, might confuse another. Through interactive exercises we designed in *e-daf*, we can hopefully cater a lot better to every student, by giving more immediate and specific feedback," explained Rita Maria Niemann, Lecturer, European Studies Programme.

Niemann has also learned that students are more adventurous when learning through *e-daf*, as the fear of making mistakes and looking bad is not a factor in e-learning.

In Dr. Chan's opinion, the benefits of *e-daf* are best summarised in two keywords—individualization and differentiation. "*e-daf* allows students to work in an individual manner, and enables lecturers to differentiate among the various learners. For various exercises, we can offer them different levels of help. For example, students can look at 'hints' in a pop up menu to solve a blank, call up the glossary to look up meanings of new words and read strategic tips to tackle the exercises," he said.
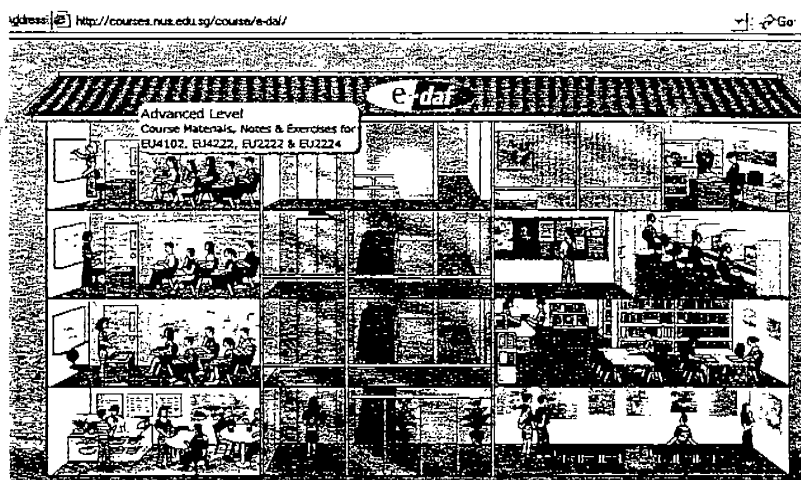
The *e-daf* 'houses' many 'rooms'—e.g. chat room, teachers' room and links to other German websites of educational interest

A PERFECT RELATIONSHIP

After coming out with the structures and designs, the *e-daf* team realised that they needed greater technical expertise to implement the programme successfully. This was when Dr. Chan decided to approach CIT for help.

"We consider the CIT people who have helped us as part of the *e-daf* team. It's also not just a question of technical expertise. Although we could have still done it alone, it was very helpful to have a team of technical experts who can accomplish the task of designing a virtual centre much faster than we can, to support us," he praised.

It all started with a phone call. Dr. Chan had called Ravi Chandran, CIT's Acting Director, to enquire if they can enlist student assistants to help. After going through the programme's concept, Ravi decided to send Eugene Hiew, a Media Producer at CIT, who has been part of the team ever since.

At present, the working arrangements are that the lecturers will manage the contents, e.g. the addition and updating exercises while CIT will take care of the infrastructure, e.g. adding a new 'room' and creating a forum. Among other features, there are video and audio materials available through the net, and these have to be segmented according to the unit of the package.

JUST DO IT

The e-daf project proved to be a mammoth task for the team. Though having done course websites in the past, Dr. Chan confessed that none of the team members are computer 'freaks'. The main motivation came from their belief in a common teaching philosophy and methodology. They are convinced that by pooling their resources and making use of each other's exercises, they can make available more materials to all students. By putting these onto the Web, it will allow lecturers to modify them relatively easily and ensure that students have access to up-to-date and customised resources.

"It's much more convenient to 'publish' the materials on the Net than putting it on paper as there might be slightly different needs in each class. What we're creating is something that'll be constantly on-the-move in line with the needs of the students," said Niemann.

It is most encouraging for CIT to witness another successful project. Though Dr. Chan and his team certainly deserve the most credit, CIT is proud to have contributed to and participated in the e-daf project.*

For more information, please visit http://courseware.nus.edu.sg/Showcase/e-daf-content.htm

Teach and Learn the SMART Way

The SMART Classroom at CIT is popular among lecturers and students who require video conferencing and distance learning as part of their teaching curriculum

A re you running out of ideas on how to provide stimulating lectures to your students in this new semester? Why not book a session with the SMART Classroom at the Centre for Instructional Technology (CIT), so that your students can have an interactive session with their counterparts? Recently upgraded with the latest AV facilities to support distant learning, every lecturer should definitely hold a SMART lecture at least once this semester.

For those still unfamiliar with the SMART Classroom, there's no cause for concern. Just as you don't think about the source of electricity when you turn on the lights, you won't have to think about the technology when you use the SMART Classroom.
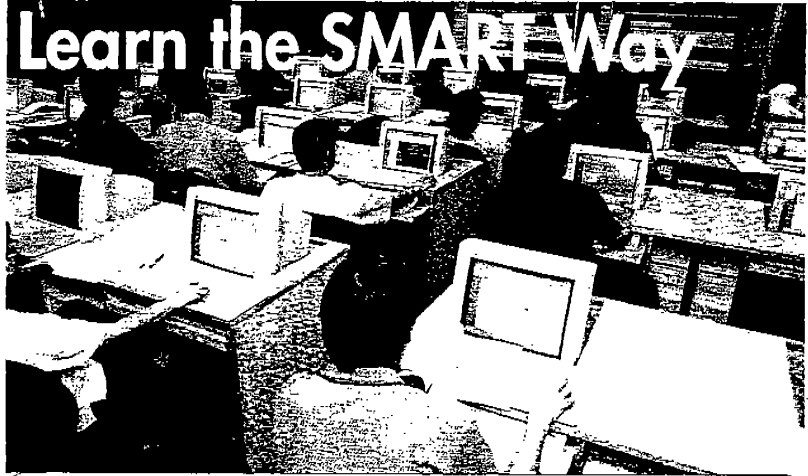
For those in need of an orientation, the SMART Classroom is located at the third level, Computer Centre. Lecturers who want to use the room are encouraged to book early, just to ensure the schedule is on track for everybody involved. Just make arrangements for a video conferencing session with a foreign lecturer, bring down your presentation materials on the day, and the CIT technicians manning the operating consul will make sure technology glitches are kept to a minimum.

SMART CLASSROOM FEATURES

Originally constructed to be the back-up for the Computer Centre Auditorium (CCA), the SMART Classroom is fully equipped to hold a video conferencing session on its own.

Some of the features are:
• 36 network PC workstations equip with NetOps software – that facilitates teachers and corporate trainers with a powerful combination of seven essential tools for networked classroom instruction. Show your screen to the

class, see student screens as they work, remote control PCs, chat with one or more students, launch applications and lessons, call your class to attention or transfer files.
• Video conferencing codec that can operate either on IP or ISDN lines, up to 384Kbps.
• A 'push-to-talk' system has been designed to integrate with a set of four cameras. This enables "line of sight" and "sense of presence" which allowed you to speak from where you're seated in a natural classroom setting while video conferencing. The system can be configured to allow as many as 35 persons to speak simultaneously.
- An Automated Tracking Camera is installed to intelligently track presenter's movement and permits eye-to-eye conversations throughout the video conferencing.
• Dual ceiling-mounted projectors give audience a continuous view of the foreign site on one screen while the second screen displays documents that are being discussed.
• A SMART Board which is an interactive whiteboard, can save your notes to a computer and control your applications directly from the Board's large, touch-sensitive surface.

SMART BENEFITS

At present, there are four to five lectures in the SMART Classroom every week. "We have the technology and the technical expertise to enhance teaching and learning experience, and we certainly hope people will make use of it. Over the last two years, CIT has constantly upgraded the SMART Classroom so as to make available all the latest technology to our lecturers and students. Our objective is to push education to higher grounds with IT, and we believe the SMART Classroom will prove to be an effective and efficient way of transmitting knowledge and information," said Lim Sew Hoo, CIT's Manager.

Don't miss out on an interesting and educational experience. Make an appointment with the SMART Classroom today and you might just discover much more.*

For more information, please send an email to citsbms @ nus.edu.sg or citlimsh @ nus.edu.sg or visit our web site at http://www.cit.nus.edu.sg/ .

More Multimedia Treats In Store From the University Multimedia Development Labs (MDLs)

The Multimedia Development Lab (MDL) provides staff and students access to IT amenities, from basic printing and scanning to audio video digitizing. In this issue, we focus on the activities of MDL in the Faculty of Arts and Engineering Centre for IT Applications (CITAs).

MDL – Faculty of Arts

Located at the Shaw Foundation Building, this place was recently given a new look since its humble one room beginning back in 1995. The majority of the users here are from the Information Communication Management. At present, services available are:

- Video digitizing
- Audio digitizing
- A4 and A3 scanning
- Colour printing
- CD writing
- Digital camera on loan to students
- Digital video camera

The Lab also boasts of seven workstations at present. Although mainly catered to the students from the Faculty of Arts, it is open to all students in the University. The Lab is also considering purchasing Macs (for real-time audio video and desktop publishing purposes) and a 3G workstation (for 3D and compositing) sometime in the future.

Spick-and-span, the Faculty of Arts MDL new look

The MDL is located in AS7 02-35.

MDL – Engineering CITAs

There is a new MDL at the Engineering CITAs now. This project was brought about due to the decentralisation of CIT's responsibility to faculty CITAs to keep abreast of the rising needs for IT resources, including multimedia development.

Among the unique features staff and students can expect in the MDL are:

- AVI encoding and real-time video editing via Pinnacle Systems DV cards (DC1000 and DV500) and Adobe Premiere. This allows for analogue video sources such as VHS tapes and digital ones such as VCD DV tapes and DVD to be converted into digital formats to be stored into a CD-ROM and also back to formats such as VHS DV tapes.
- Aside conversions, the system also allows for real-time editing of video sources that include over a few hundred transitions/special effects, titleing and even music and sound mixing using the bundled software.
- MPEG encoding via Optibase MpegXpress Cards from sources such as VHS tapes, VCD, DV tapes amd DVD to be output into MPEG1 files that can easily be converted into VCD or kept as digital format into CD-ROMs.
- CD duplication using a one-touch CD-duplication system that can hold a maximum of 50 CDs at any one time, while duplicating. Users who have produced their masterpieces on CD-ROMs or VCD can duplicate them easily.
- · Colour laserjet printing through its HP4500N colour laserjet printer for sharp reproduction of colour images and graphics.
- Web design and multimedia authoring software such as Macromedia Dreamweaver, Macromedia Flash/Director,

Sophisticated new equipment to allow conversion of digital format for CD-ROM storage

LMSoft Presenter Studio and Macromedia Authorware are available to both staff and students.
- An IMAC to cater to the MAC lovers with the complementary video hardware and software.

At present, there are four new PCs and one IMAC. Depending on the feedback it gets from this semester, the manager plans to render additions and changes when the next semester ensues.

With 70 per cent of the equipment operating, it will admit all students very soon.

The MDL is at E2 03-29A.

Well, it certainly looks like multimedia amateurs and professional have more venues to explore their creativity and practice their skills this semester. One important reminder though: absolutely no copying of pirated software or VCD please. Otherwise, feel free to venture.*

For more information, please email to citmm@nus.edu.sg

Concrete Steps For Online Discussion

Karen M. Peters

P lan student activities weeks before the semester starts, as early as a week or two, and have a discussion about the different format of the course. The following is an outline of different types of activities that will motivate students to utilize the forum's potential in the semester.

Strategy 1

From the very beginning, don't separate the topics in the online discussion from the face-to-face class meetings. Do base class quizzes on information posted from students—students need to see the results of the technology used for their regular class activities or they might not take the online assignments seriously.

It is important to make it compulsory for students to log in at least twice a week (at the beginning of the week to enter their comment on a topic, and later in the week to read and respond to feedback on that topic). This will also help to create incentives for students to achieve regular and legitimate participation.

Strategy 2

Don't expect students to know how to collaborate. As the instructor, you'll need to monitor the discussions, and make allowances for group conflicts and other group dynamics. Besides, with so many different perspectives offered, students might suffer information overload, and may get confused between facts and opinions.

Strategy 3

Provide students with comprehensive handouts and training on the use of online discussion forum. However, it is their responsibility to familiarise themselves with the technology. It is crucial that students become independent of the lecturer as the technical expert of the system, or they'll never learn to collaborate with their classmates. Don't make hasty allowances for students' perceived incompetence in

IVLE Discussion Forum Facilitates E-Learning

According to the statistics, the discussion forum is the most popular collaborative tool in the Integrated Virtual Learning Environment (IVLE). At present there are 721 active discussion forums. According to Ravi Chandran, CIT's Acting Director, here are some reasons why the IVLE discussion forum is an excellent tool in e-learning:

- It is a great avenue for both lecturers and students to post questions and seek answers.
- It gives a 'voice' and present to students who are shy in class, as they can choose to be anonymous in the forum.
- Users can create hyperlinks to support a viewpoint or argument, or as reference materials.
- Users can also upload files, e.g. Word documents and PowerPoint files in the forum.
- For students who couldn't attend the class, or wish to have further discussion on the subject can choose to do so in a discussion forum.
- More importantly, the forum promotes interactive peer learning, rather than being spoon-fed by lecturers in a classroom. In this environment, the lecturer's role is mainly a facilitator.
- The IVLE discussion forum is 'threaded', meaning every reply to a question is kept-together in sequence.
- The discussion forum can become an important information database for future students taking the same subject.

Some of the other features of the IVLE discussion forum are:
- Subscription—the subscriber will be notified via email on new postings and replies on a daily basis.
- Date sensitive—the lecturer can choose to impose a time frame, e.g. one week, on the discussion of a certain subject.
- Users can save the entire discussion into their hard drive for future references.

New features in IVLE 5:
- Faster loading time
- Page by page display
- Archival system to allow users to view the previous semester's discussion

To ensure that the discussion forum is successful, Ravi suggests the lecturers to:
- Inform students of this facility and how you will respond (date, time, etc.)
- Use the subscription feature
- Ensure the forum is active by posting interesting questions
- Coach students to post questions and other information in short and concise sentences
- Review questions and answers to check relevance
- Instruct students to login to the forum before going to tutorials

For more information, email cithiewe@nus.edu.sg, or visit http://www.ivle.nus.edu.sg.

dealing with computers. They'll learn once they find out it's important for the course, e.g. it will contribute to a student's grades, and other future disciplines.

Strategy 4
Structure activities so that all students can log in within a time frame, e.g. within the same few days. Students who come online later may face an already established community and feel left out.
If you wish students to work in an 'unstructured' environment, stage your exercises throughout the semester so as to move gradually from 'structured' to 'unstructured'.

Strategy 5
In the various online activities you create for your students, do use metaphors to create a sense of architecture. For instance, you can call a conference for socialising "The Water Hole", a conference for exchange literature references "The Library", etc.

Strategy 6
Suggest to your students the importance of a good learning environment. If they are trying to participate the online discussions from work, they are competing with other daily priorities. A busy dorm or lab can also interfere with the benefits of an online forum. Encourage students to find time when there are less competition with other tasks or conversations.

IVLE Student Survey Results

In a recent student survey on IVLE usage conducted from July to September 2000, CIT found out that
* 47 access IVLE more than 10 times a week
* 46 access IVLE between five to 10 times a week
* 77 access IVLE between one to four times a week

The three most important factors in their decision to use IVLE are:
* All course notes and hand-outs are on IVLE (209)
* Forum and other IVLE tools allows communication between staff and other students (143)
* Other reasons (135)

In an important finding, it was recorded that:

	Least agree				Strongly agree
Easy to use	7	15	47		49
Enjoyable to use	7	18	78	49	
Helps you learn about the subject	3	18	67	60	
Fit well with my course material	6	15	65	63	
I would use it in my own time again	7	10	59	64	36

Strategy 7
Social support activities are very important for a class. They help to provide the emotional 'bridge' that motivates students to learn together and from each other (as compared to learning only from the teacher). Do create areas where groups of students (teams) can work on a question or problem before it is posted in the classroom. However, don't expect students to be able to meet in small groups outside of class time, especially with larger classes.

Strategy 8
Cautioned students that each conference environment has its own standards of behaviour. A formal conference requires attention to correct language usage and students will be graded accordingly, whereas

in their own private groups, this is not an issue.

Strategy 9
Enter a controversial topic related to the course content each week and request that students discussed it in the forum. Have students defend the issues posted throughout the semester. This can be done by saving or extracting the issues in the whole semester and assigning teams to defend either a pro or con position. As the semester progresses, request students to synthesise the materials that were posted throughout the semester.

Strategy 10
Don't squeeze everything into a single discussion—this becomes very confusing. Move discussions or create new topics as they become necessary.*

Congratulations on CITAs Engineering eLIVE launch

CITAs Engineering recently announced the availability of its eLive service. eLive is a 'live' webcast services to support the Faculty of Engineering in online teaching and learning over the NUS intranet and the Internet.

The launch signifies another successful technology transfer by CIT to faculties CITAs. eLive is modeled after NUSLive. CIT supported the project in two areas:
* Loan of encoder package—this includes encoder PC, wireless microphones, cameras and encoder cards
* Technical training—CIT also provides training in webcasting for the three phases: pre-production, production and post-production

According to Ravi Chandran, CIT's Acting Director, the Centre is very pleased with the launch of eLive, and will continue to provide strategic support to all faculties CITAs.

For more information, please contact citlewkh@nus.edu.sg

Medical Education Online — A case study

MEDNet is the Medical Faculty's Intranet Curriculum. Its objective is to bring course content to the Internet platform for ease of delivery and maintenance. University's staff and students can access MEDNet anywhere in the world with their User ID and password.

Methodology

MEDNet started in 1999. A phase approach was adopted. Beginning with Medical Year 1, a full year's curriculum was published online in each academic year. At present, Medical Year 1 and 2 curriculums are available on MEDNet. In addition, Year 3 to 5 students can access MEDNet for resources and materials such as Clinico-Pathological Conferences and Elective Postings .

The decision to move curriculum to intranet came from the previous Dean, Professor Tan Chorh Chuan. Associate Professor Lee Szu Hee was appointed to oversee the overall design and implementation of MEDNet. Through the M1 and M2 curriculum committees, headed by Associate Professor Koh Dow Rhoon and Professor Aileen Wee respectively, all academic staff involved in teaching were invited to submit their course contents including objectives, references and other supporting materials such as graphics and Powerpoint presentations. A staff member was appointed as a coordinator for each track of the curriculum. There were three tracks for Year 1 and eight tracks for Year 2. All curriculum materials were presented in a common template for a uniform look and feel. A javascript navigation program 'Foldertree' was adopted for displaying and facilitating changes to the rapidly growing list of documents and applications. For other reference materials such as group lists and guidelines, the Adobe Acrobat PDF format was extensively used.

IVLE bags first prize at E-nnovator Awards 2000

A hearty congratulations to the winner of the E-nnovator Awards 2000. The team from the Centre of Instructional Technology (CIT) garnered the first prize in the open category of the competition with its Integrated Virtual Learning Environment (IVLE).

IVLE, the National University of Singapore (NUS) online courseware management system developed by CIT, was designed to cater to approximately 18,000 staff and 28,000 students.

Putting it simply, IVLE is a set of web-based tools and resources use by faculty members to supplement the classroom experience. It equips both staff and students with the necessary techniques and tools for student-instructor communication, group interaction and support. For example, IVLE enables students with employment far away from home to access course materials easily from anywhere in the world.

To date, NUS has licensed 14 universities in the Philippines, Singapore and the United Kingdom to implement the system. The idea was the brain-child of Prof Lawrence Wong, Director, Computer Centre, NUS and Ravi Chandran, Acting Director, CIT, NUS back in 1988, and implemented successfully in 1998. Sun Jinlie and Wu Haixin, both Analyst Programmers, were responsible for developing and refining the software

Prof Wong, Ravi, Jinlie and Haixin received the award last September, from Lim Swee Say, Minister of State for Communications and Information Technology and Trade and Industry.

"IVLE has been instrumental in spearheading the use of IT in teaching and learning in NUS. Its initiative interface and rich plethora of tools, coupled by an active feedback mechanism from staff and students, have made IVLE stand out against other competitors' platform. The E-nnovator Award is a testimony to the IVLE's excellent quality," affirms Prof Wong.

The E-nnovator Awards scheme was co-presented by Standard Chartered Bank and Channel NewsAsia, in association with Yahoo! Singapore. It is the first such award calling Singaporeans to share their e-ideas that will contribute to society at large and to the development of an e-lifestyle here.

IVLE & COURSEWARE DEVELOPMENT

Features

The following screens show some features of MEDNet:

Screen 1: Course outline and summary
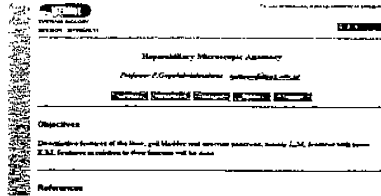
With the help of the Centre for Instructional Technology (CIT), a special template was created for MEDNet, which included lecture objectives, links to the lecture summary and teaching tools and colour coded margins to represent different tracks of the curriculum.

Screen 2: Time table
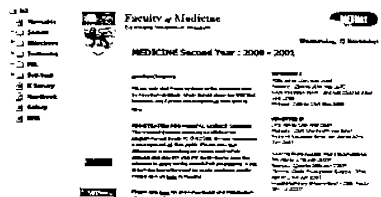
The left frame shows the folder navigation structure of MEDNet. The timetable uses active server pages to access a database. Sessions in timetable are colour coded according to tracks and hyperlinked to the respective lecture outlines.

Some other features include

- Self assessment questions
- PBL group lists and evaluation
- Multimedia teaching material (Video clips).
- Mirror of CALReviews
- Clinico-Pathological Conferences
- M4 Electives registration and evaluation.
- Search engines
- Recommended medical websites

Challenges

- In order to present information in a standardised format, the material submitted by lecturers need to conform to a predetermined structure. Course codes need to be standardised as well. The materials were then sent to student assistants for loading into the IVLE. A great deal of effort was required to coordinate this exercise. This workload will increase as each subsequent year is mounted online.
- Enthusiasm and commitment among lecturers varies widely. Implementation is a gradual process with constant adjustments.
- User requests are often submitted in an ad hoc fashion and there are frequent calls for urgent and even immediate implementation.

Lessons learned

For the intranet curriculum to be useful, timeliness and accuracy of information is very important. This requires constant monitoring and the assistance of several parties. The critical success factors include:

- Management support—Timely management support and decision making in design, features and implementation is essential.
- Technical support—CIT provided tremendous support in the following:
a. Hosting the course materials in IVLE.
b. Implementing the templates designed for MEDNet, including colour margin coding.
c. Controlling access to individual lecturers' accounts so that materials can be loaded on behalf of the lecturers.
d. Providing technical support for multimedia production of teaching videos.

- Technical assistance—Two student assistants financed by CIT systematically loaded all lecture contents to MEDNet in a very short time-frame.
- Editorial and quality assurance— The MEDNet interface was designed and continuously monitored for accuracy, consistency and completeness of course materials submitted.
- Coordination and programming—CITAs' (Medicine) ensured that
a. All modules were correctly linked to the timetable.
b. All submitted materials were loaded to IVLE.
c. Announcements, handbooks, guidelines, group lists etc were loaded to MEDNet for reference.
d. Programs for registration, allocation and evaluation of projects were completed according to administrative policy. The objective was to automate administration of teaching components such as Special Studies Modules and Problem Based Learning so as to ease administrative workload.
- Students' feedback—Ample opportunities were available for feedback in M1, which were evaluated and acted upon in M1 and M2 the following year.

In conclusion, the MEDNet project, now in its second year, has a strong foundation upon which a complete online medical curriculum can be constructed. This would not have materialised without the strong support of CIT, and the driving force of committed academic staff members of the Faculty of Medicine.*

For more information, please refer to http://www.mednet.nus.edu.sg

Multiple Cameras At Work - When Multicamera Brings The Best In Productions

Have you ever wondered what goes on behind 'live' television programs, e.g. the evening news? For those who have been to shows like 'Tonight With Gurmit' or 'Comedy Night', you might have seen more than one camera doing the recording – a little more complex than using a camcorder to record your nephew's one-year-old birthday party! Joe Peters, the Manager of Multimedia at the Centre for Instructional Technology (CIT), gives us some insights into what we do in multicamera set-ups.

WHAT IS IT?

In a multicamera set-up, there are two or more cameras shooting the same subject. A configuration of equipment would be needed — at one end people manning the cameras and the other

Multicamera productions provide multiple faceted. Among activites that commonly require multicamera shooting are surgery procedures

end to receive. At the receiving end they can monitor what the cameras are shooting with multiple monitors, direct the cameramen on what and how to shoot the subject and then select from among the multiple images. Producers usually control and direct the set-up and are responsible for the end result that is recorded.

WHY MULTICAM?

"Multicamera provides a 'rounder' perspective or view to a subject by allowing one to show the multiple sides to the same subject. For example, during a show, I can record the host, the audience and other visuals, therefore giving a many-faceted view. The more cameras you add, the more facets you'll have," explained Joe.

Though you certainly don't need multicamera at your nephew's one-year old birthday party, multicamera is needed to record, for example the live National Day Parade, where there are even overhead cameras.

MULTICAM PROJECTS

CIT has a highly experienced multicamera production crew. The major productions the crew undertook since the new academic year 2000/2001 began were the Freshmen Welcome Inauguration in July, the Commencement in

The director needs to monitor carefully on the images send by the three cameras

September, the Endowment Fund Appreciation Show and an Arts Conference in October.

The most complex multicamera configuration occurred for the Commencement in which NUSCast was part of the flow and did a webcast of the series of events. Here two sets of multicamera set-ups covered different aspects of the Commencement programme at two different locations at the University Cultural Centre (UCC). Each location was "switched" into the flow of events for transmitting to the large screens around the UCC, for the webcast and video recorders.

MULTIPLE CHALLENGES

Though the crew enjoy multicamera operations, Joe says that there are challenges they always face, like:

- Positioning cameras—very often, the crew are unable to place their cameras in positions that would give the best images. These vantage positions would normally block the
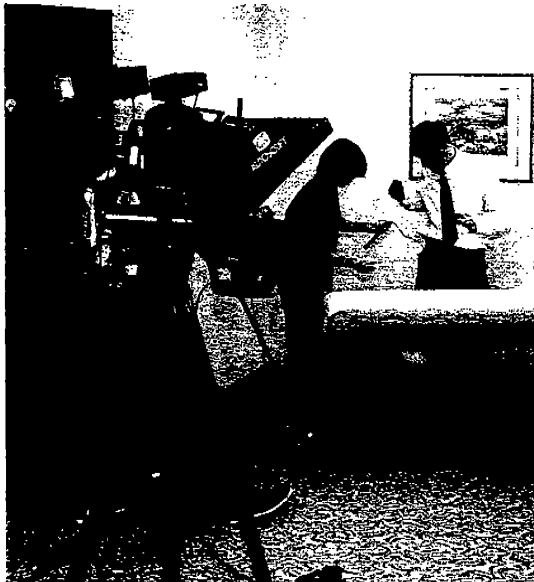
view of people observing the subject. The irony, noted Joe, was that even though the client would not allow them to occupy the ideal positions, they would almost always questioned the quality of the images later. The bottom line, Joe says, is that buildings and rooms are not structured to optimise multicamera production works without hindering normal activity.

• Environment — in multicamera productions there would always be a need for an exclusive out of sight and out-of-sound area for the control desk to allow producers to give their cues to the crew without disturbing others, or being disturbed in turn. Joe recalls the many times producers tell him how they end up using the most inappropriate of places to get the appropriate returns for the production, e.g. in one of the productions at the Medical Faculty, the crew was forced to set up their controls in the toilet.

• Technical problems — they are never ending. They cover the whole gamut from the configurational to electrical to just plain bad luck! One of the most dreaded of problems around the campus is electrical "noise" leakage (the "hum") and that is due mainly to electrical grounding.

But like the professionals they are, these challenges are easily overcome through their dedication to achieving excellence in multicamera recordings. The crew normally survey the site well before the event, and then they normally try to do the set-up and tests two days before the event — it may not be possible to do the latter all the time because of site availability. Nevertheless, the crew then most often simulate the site at their studio and conduct the trials and tests there. On the actual day of the recording, more testings are done. What happens if problems occur during filming? In this case, the crew can always

One simply needs to improvise in impossible situations. In this production, crew Manuel 'Noli' Gamboa and Azman B Johar manned the consul from the toilet

use 'camouflage' techniques, tips that Joe are not revealing.

In the near future, Joe expects more staff to engage CIT's video recording service for education purposes — such as content developing and resource accessing techniques. At present, video recording projects are mostly 'for-the-record', promotional and archival purposes.

Joe notes that there is a gradual realisation towards video recording as a medium for course content, judging

The 2000 Commencement broadcast live on the NUS webcast, was a major project involving complex multicamera work

by the increase requests he gets. For example, The Arts Conference organised by Theatre Studies in October was recorded expressively for this purpose. Other examples include current videos projects being done by departments like Community, Occupational and Family Medicine and Social Work and Psychology.

Joe is planning to further promote CIT's video and multimedia services through training courses so that technology transfer can take place. Appended to the course would be special presentations on how other institutions have used video and multimedia as teaching and learning tools and resources. The priority, Joe concluded, would be to position multimedia as an attractive tool and make it accessible to everyone in the campus.*

For more information, please visit www.cit.nus.edu.sg/multimedia

Age Is No Barrier To Learn IT

The Web belongs to the Gen-Y, or so most people think. However, computers and Internet are not invented just yesterday, and it's a shame that the generation who invented the Internet is afraid, or left out in the age of IT. Today, many elderly who are still in the workforce, are coming out to embrace the Net. Stephen Soh, Service Coordinator of the Centre for Instructional Technology (CIT) offers his web experience. His daily tasks include retrieving requests from the University departments and making sure that the requests reach the relevant manager or producer in CIT.

"The dawn of information technology offers many global challenges and understanding how to use it for educational benefits is important. For me, the mere chance of being in CIT and assigned to service the needs of the various University departments using IT, is inevitable that I have to pick up IT skills to retain my job."

Still, it takes a lot of courage, and foresight to teach oneself something totally new and unfamiliar. A lot of people, regardless of age, suffer from technology phobia when not initiated. Stephen bravely soldiers on despite having no training in IT.

"Initially, there were many obstacles as I was not armed technically. I've only attended a few basic computer classes organised by the University, and applying the know-how by trial and error was how I started.

To keep up in the IT world has its headache moments. To overcome this difficulty, determination is the key to success, as the saying goes."

When the going gets tough, peer support is important, and Stephen had plenty of that from his colleagues.

"I'm fortunate to be where a good number of staff are computer literate. Thus, I've a better sense of direction of where I'm going,

and can reach out for help easily. This really motivates me because I can have face-to-face discussions with my colleagues in the areas that I don't understand.

Another motivation factor is to know that despite my limited experience in IT, I'm still able to perform a meaningful role in the department and provide satisfaction in my service to both CIT and the University staff."

Despite initial hurdles, those who manage to master the subject agree that IT has helped tremendously in working efficiency.

"It has improved my work efficiency. Answering requests from departments has also given me the opportunity to interact with others and get to know my colleagues better."

Stephen has this to say to working senior citizens:

"Never give up—determination and self-confidence are very important to success. People have to realise that IT is like an encyclopedia containing up-to-date information in any field of learning." *