

IMPLEMENTING INFORMATION LITERACY REQUIREMENT AT LINGNAN UNIVERSITY

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ABSTRACT

Today, with information technology (IT) permeating every aspect of the society, it is generally agreed that an educated person should know how to use IT to help find, analyze, and use information in order to address problems and issues in his or her daily life and profession. This ability to search for information and use it effectively is also a prerequisite for continued life long development, an educational goal of many higher education institutions and is included as part of the profile of a graduate in Lingnan University's goals and objectives. As a result, the Information Literacy Requirement was incorporated into Lingnan University IT Strategic Plan 1997 and the Requirement was implemented in fall of 1999. In the Lingnan University IT Strategic Plan, the importance of information literacy is stressed with the goal to ensure that every graduate from Lingnan University is an information literate person who will have a long and productive life in today's information age, thus providing Lingnan with a competitive edge over other institutions of higher education in Hong Kong. It is also stated that the goal of information literacy education is for someone to acquire the traits of the information literate person. To achieve this goal, a learning environment conducive to information acquisition, analysis, and use should be created in addition to a program that provides such knowledge. In other words, a culture that understands the importance of information literacy should be fostered. This article introduces the philosophy for the formation of the Information Literacy Requirement at Lingnan University and reports its experience in implementing the Requirement in the past two years.

Keywords: Information Literacy; IT Literacy; Computer Literacy; Tertiary Institutions

BACKGROUND

Lingnan University is the first tertiary institution in Hong Kong to develop a widespread and innovative information literacy requirement. Under the Information Literacy (IL) Requirement, a three-credit course, Introduction to Information Technology, became the nucleus of the Information Literacy Requirement for all students in the credit-based system at Lingnan starting September 1999. In addition to classroom and PC laboratory instructions, the Library, academic departments, computer center, and many other units on campus also play important roles in providing facilities, teaching materials, computer-based training, and workshops to both students and teaching staff involved in the Information Literacy Requirement. This Information Literacy Requirement, with its emphasis on the ability to access, evaluate and use information effectively from a variety of sources, is much

broader than the traditional Computer or IT Literacy Program. The article presents the philosophy behind this Information Literacy Requirement, followed by an account of experience of implementation.

Lingnan University in Hong Kong, the Special Administration Region of the People's Republic of China, has a long tradition. Its history can be traced to 1888 when missionaries from the U.S. founded Lingnan University in Guanzhou. Before the University was closed down in 1952, Lingnan offered academic programs in diverse areas and has a strong liberal arts tradition, and produced a group of very loyal and distinguished alumni. Subsequently, some of these alumni established Lingnan College in the old tradition of Lingnan University in Hong Kong in 1967. At the beginning, Lingnan College offered up to diploma and high diploma programs. In 1992, Lingnan College became a Hong Kong University Grants Committee sponsored institution and began to offer degree programs. In 1999, Lingnan College was retitled Lingnan University. Currently Lingnan offers bachelors, masters and PhD programs in business, social sciences, and arts. The mission of Lingnan University is to become an internationally known liberal arts university.

Lingnan University, in the tradition of liberal arts institutions, aims to provide a well-rounded education to its students so that they may become productive members of the society. With information technology (IT) permeating every aspect of society today, it is generally agreed that an educated person should know how to use IT to help find, analyze, and use information in order to address various problems and issues in his or her daily life and profession. This ability to search for information and use it effectively is also a prerequisite for continued life long development, an educational goal of the University. In view of this, Lingnan University incorporated Information Literacy Requirements in its Academic Development Plan (10 November 1996, p. 15). A working group consisting of staff from the then Computer Studies Department, Computer Services Center, the Educational Technology and Development Center, the Library, the Student Counseling Unit and representatives from each of the Faculties was established to provide recommendations on information literacy requirements and their implementation. A consensus on the meaning of information literacy was reached after several meetings. This consensus views information literacy in a much broader perspective than the so-called computer or IT literacy. Subsequently, an implementation plan together with a timetable was developed. The original implementation date was to be fall of 1998. However, with the need to assemble sufficient resources and to have the plan endorsed by the Academic Board of the University, the implementation date was pushed to fall of 1999.

All along the discussion, it was felt by the working group that a broader perspective of information literacy suits better the liberal arts orientation of Lingnan University. The following section presents the meaning of information literacy Lingnan came to adopt. A description of the macro-environment that shaped Lingnan's Information Literacy Requirement is also presented in order to offer a proper perspective of the Requirement's importance and contribution to Hong Kong SAR's long-term economic strategic plan.

INFORMATION LITERACY

What is Information Literacy?

A common definition of information literacy is "the ability to access, evaluate and use information (effectively) from a variety of sources" (Doyle 1994, p.5). The characteristics of an information literate person are:

(they) must recognize when information is needed and have the ability to locate, evaluate and use effectively the information needed... Ultimately information literate people are those who have learned how to learn. They know how to learn because they know how information is organized, how to find information, and how to use information in such a way that others can learn from them (ALA 1989, p.1).

Thus, an information literate person:

- *recognizes the need for information;*
- *recognizes that accurate and complete information is the basis for intelligent decision making;*
- *identifies potential sources of information;*
- *develops successful search strategies;*
- *accesses sources of information, including electronic and otherwise;*
- *evaluates information;*
- *organizes information for practical application;*
- *integrates new information into an existing body of knowledge, and uses information in critical thinking and problem solving. (Doyle 1994, p.2)*

Hong Kong's Digital Strategy

Hong Kong SAR Government recognizes the importance of information literacy and has made efforts to encourage and promote information literacy in recent years. In its "1988 Digital 21" IT Strategy (Information Technology Broadcast Bureau, 1998), the SAR Government described the need to develop an integrated IT strategic plan in order to retain Hong Kong's position as an important international financial and business center and to maintain its competitiveness in the world market. The 1998 Digital 21 Strategy aimed to "enhance and promote Hong Kong's information infrastructure and services so as to make Hong Kong a leading digital city in the globally connected world of the 21st century". Among the four enabling factors for Hong Kong to be ahead in the digital era is the need to have the human resources that understand IT and are capable of using it, or to put it simply, to have people who know how to use IT. As a result, a 5-year strategy for IT in education that called for a capital spending of HK\$3.2 billion and annual recurrent spending of over HK\$550 million was put in place. It plays a significant role in preparing Hong Kong's future generation for the information economy.

In a follow-up document, *Digital 21 IT Strategy* (Hong Kong Information Technology and Broadcasting Bureau, 2001), the original 1998 Digital IT Strategy was updated in response to the rapid development of e-business in Hong Kong and elsewhere in the world. Its aim is to make Hong Kong a leading e-business community and digital

city in the globally connected world. Two of the four Key Result Areas (KRAs) in this document are related to human resources. They are KRA 3: To develop Hong Kong's workforce for the information economy and KRA 4: To strengthen the Hong Kong community for digital exploration. In KRA3, It is recognized that the rapidly growing worldwide competition for skilled IT manpower and the corresponding shortage of these skills locally is a critical issue for Hong Kong. KRA 4, on the other hand, recognizes the increasing need for the community at large to have the knowledge of and access to IT. Achieving these KRAs will ensure that Hong Kong will help meet its demand for skilled IT professionals and practitioners in order to sustain its economic development. The entire community will also benefit from enhanced quality of life resulted from IT development. It is obvious that Hong Kong has to focus on Information Literacy education in order to be successful in these KRAs.

Along the same line, the Education Department of Hong Kong published a consultation document "Information Learning Targets," a reference for primary and secondary schools to organize teaching and learning activities to develop their students' capability in using IT (IT Learning Targets Working Group, 1999). In this document, the specific IT learning targets are to be completed within the time frame from Universal Basic Education (Primary 1 to Secondary 3) to Senior Secondary Education (Secondary 4 to Secondary 7).

For each stage, specific learning targets that focus on the development of IT knowledge, skills and attitude are defined. The so-called attainment targets, the minimum standard of students' IT skills to be achieved at each stage are also specified.

The establishment of the learning targets for school students is to provide students a curriculum and environment to develop their competence in applying IT in learning. It is hoped that students will become habitual IT users in the future both for studies and at work. Thus, it is necessary to revise the existing curriculum to enhance the level of awareness and use of IT. In the short-term, leaning programs have to be designed to provide students with the necessary IT capabilities. In the long range, IT should be integrated into the entire school curriculum. It is felt that simply introducing new IT subjects are not sufficient and that teaching IT as an isolated discipline is not an effective way of encouraging the use of IT in learning. It is important to provide a meaningful environment for students to learn and apply IT in context.

The development of Information Literacy Requirement at Lingnan University was motivated by the drive of the Hong Kong SAR Government to improve Hong Kong's competitiveness in the Digital era as evidenced by its "Digital 21" IT Strategic Plan (1998, 2001) and goes in tandem with recent development in IT learning goals and programs for the primary and secondary schools (IT Learning Targets Working Group, 1999).

IMPLEMENTING INFORMATION LITERACY AT LINGNAN

To stress the importance of information literacy and to ensure that every graduate from Lingnan University is an information literate person who will have a long and productive

life in today's information age may provide Lingnan University with a competitive edge over other institutions of higher education. To achieve this goal, Lingnan University decided in 1997 to formulate a viable information literacy education program to impart the value and the required knowledge base for information literacy for its students so that graduates from Lingnan may manifest themselves as information literate persons in their daily and professional lives.

Domain of Information Literacy Education

The goal of information literacy education is for someone to acquire the traits of the information literate person. To achieve this goal, the IL Working Group regards a learning environment conducive to information acquisition, analysis, and use as equally necessary as the program that provides such knowledge. In other words, a culture that understands the importance of information literacy should be fostered. The IL Working Group also decided that the domain of information literacy education should encompass the following areas:

- understanding the nature of the information society and the importance of information literacy,
- understanding the ethical issues and etiquette in the information society,
- understanding health issues relating to computer use,
- understanding a variety of information sources and the strategies to use them,
- being able to use basic personal computer productivity tools,
- being able to use IT to access, analyze, and use information effectively in one's daily life,
- being able to use IT to access, analyze, and use information effectively in one's area of study/discipline,
- being able to present and communicate ideas effectively,

Information Literacy Education Stakeholders

The IL Working Group also realized that in order to launch the Information Literacy Requirement, all stakeholders at Lingnan should join force to take part in the design and implementation of the program. The stakeholders and their roles are described below:

Department of Computer Studies--The Department is the only academic unit offering formal computer courses on campus. Courses such as CPT1011-2 *Computing and Statistics* (a year course), CPT1400 *Introduction to Computing* and CPT1410 *Computing for Translators* ensure that Bachelor of Business Administration, Bachelor of Arts Chinese and Bachelor of Arts Translation students have a solid understanding of computer literacy and possess the basic skills of popular personal productivity tools. The Department is in a good position to leverage its knowledge and experience to help students in other degree programs to achieve information literacy. Subsequently, the Department was renamed Department of Information Systems.

Library--It is the repository of information resources on campus; in addition, it has been offering a wide range of electronic information services to staff and students. On a regular basis, the Library also conducts seminars and instruction programs on on-line searches and Internet applications. Thus, the Library has ample experience and expertise to continue and to expand its offerings in the areas of information sourcing, on-line search and Internet applications.

Computer Services Center--The Center provides centralized computing facilities and services to meet the College's academic, research and administrative needs. It has been offering seminars and workshops to staff to promote IT use. Due to the emphasis of self-learning on information literacy, the Center can play a major role in the administration of computer-based instruction and training with cooperation from other service units and academic departments. Subsequently, the Center was renamed Information Technology Services Center.

Educational Technology and Development Center--The Center has its mission to provide instructional support services and to promote educational/professional development of staff. Thus, it is well positioned to develop and implement programs to help staff to achieve information literacy first and to offer assistance in adopting curriculum innovations to foster new learning styles that encourage independent learning. Subsequently, the Center was renamed Teaching & Learning Center.

Faculties--Since information literacy education requires that students not only learn how to access, acquire, and use information but also use these processes throughout their studies at Lingnan, various Faculties are responsible for implementing new learning styles and education processes to provide opportunities for students to practice the style of an information literate person in their areas of study. Faculties are also an important source of end user feedback on their IT requirements. Faculties at Lingnan included Business, Social Sciences, and Arts. In addition, there was a School of General Education. Subsequently, the layer of Faculties was removed. Academic programs are now under the management of the respective Program Offices and Departments.

Counseling and Career Unit--The Unit seeks to assist students to develop as a whole person. Since information literacy is one of the essential elements of the whole person development in today's society, the Counseling and Career Unit is in a good position to leverage its close contacts with students and to work with other units/departments to promote and offer information literacy education programs. Subsequently, the Counseling and Career Unit became part of the Student Services Center.

Hostel Administration--Residential life is a unique feature of student life at Lingnan for Lingnan has the highest percentage of resident students among all Hong Kong tertiary institutions, 74%. Since resident students spend most of their time on campus, it is important that information literacy education be extended to their social life and out-of-classroom time. The fact that all dormitory rooms have campus-wide LAN port connections facilitates the educational process for information literacy in their out-of-classroom time and social life. Hostel administration is in a good position to provide leadership in facilitating students' use of IT to address their various academic and non-academic needs.

Knowledge Base for Information Literacy

The IL Working Group views the knowledge base for information literacy at two levels. The first level being the essential knowledge required for all students at the Lingnan. Students are to be asked to demonstrate their understanding and proficiency at this level before they advance to Year Two and/or before they start taking stream-specific courses. This is also the minimum level of IL knowledge that is required for every graduate from

Lingnan. While the Level 2 knowledge is stream-specific that means the IL knowledge more relevant to the student's area of study or specialization. The Level 1 knowledge base is what the Working Group has chosen to define at this point. At this level, information literacy knowledge may include the following three major categories:

Foundation Knowledge--A fundamental understanding of the information age and the associated ethical issues, and a basic understanding of computers and communications.

Information Sources--The knowledge of various sources of information including hard copy, off-line and on-line databases, governmental, industrial, private, etc. with the ability to conduct rudimentary on-line database searches and an understanding of their reliability and cost effectiveness.

IT Skill Set--Comprising an understanding of the basic skill set of PC productivity tools which may include keyboarding, word processing (Chinese and English), spreadsheet, presentation tools, and Internet (E-mail, World Wide Web, and multi-media applications).

A more detailed description of the above three categories of knowledge is presented in Attachment 1.

As stated, the second level of information literacy knowledge refers to the knowledge and skill set necessary for a student to become a competent professional in his or her chosen field. Each Faculty and/or stream is responsible for defining this level of knowledge. It is expected that each Faculty or stream would have a better understanding of the Level 2 knowledge and, thus, is in a better position to develop its requirement.

Requirement Implementation Strategies

The consensus of the Working Group is that promoting and requiring information literacy is the responsibility of all units at Lingnan and that they should join force to undertake the effort of launching the information literacy education program. A combination of learning alternatives such as credit-bearing courses (for some Faculties or departments), workshops, seminars, computer-based training (CBT), and certification programs are needed to ensure that students would acquire the necessary Level 1 knowledge. The implementation of information literacy at level 2 should be at the degree program level and should be the responsibility of various Programs and Faculties. In addition, all units at Lingnan should strive for an environment that is conducive to the practice of an information literate person so as to cultivate the sense of value and culture for such a person. Thus, the use of IT in students' hostel life and various other administrative tasks should be encouraged.

Level One--To get new students to use Campus Network immediately after they have enrolled at Lingnan, the Working Group recommends that large lecture type short courses covering the introduction of campus computer resources be offered at the beginning of the Fall term to all first-year students, preferably before classes start. To be cost effective, the Working Group recommends that computer-based training (CBT) be used for IT skills training. It is generally agreed that active learning of IT skills using CBT is most effective and

least costly. Competency tests for most of the Level 1 knowledge subjects should be devised and possibly implemented on campus-wide LAN so that students may take the tests with minimum supervision and marking effort. Business students and students in the Departments of Chinese and Translation who are currently required to take a formal course in information literacy which covers many level 1 topics in great depth should be exempted from the competency tests if they pass the required course. Two matrices showing curriculum components, and testing and assessment methods for various Level 1 knowledge topics and the units responsible are contained in Attachment 2.

Level Two--Individual Programs and Faculties are to be responsible for Level 2 knowledge education programs. They have to formulate the information literacy requirements at Level 2 for their particular Faculty, department, and stream, which means that all current course contents and requirements would have to be examined and updated with an aim to ensure that students will become information literate professionals in their fields upon graduation. This also means that many teaching staff members would have to become information literate before students are required to meet the information literacy requirements. For business students, an additional IL-related course, Information Systems Management, is part of the Level 2 knowledge. Accounting Information Systems course, recently introduced by the Accounting and Finance Department, is another example of Level 2 knowledge. Recently, special topic courses in e-commerce have been introduced in both Accounting & Finance, and Marketing & International Business departments. As time passes, it is expected that more departments will introduce courses to support Level 2 knowledge.

Computing Facilities--To fully achieve the goal of information literacy, the working group strongly recommends that Lingnan consider requiring all students to acquire personal computers in the future as some institutions in the U.S. do. Students are free to choose a desktop or notebook PC. With all students have their own PCs; they would no longer be subject to the limitation of time and space in using a PC. However, this would also mean a change in the IT strategies at Lingnan. The University would no longer need to acquire a large number of PCs in the computer labs and computer labs could be converted to badly needed classrooms. The working group recommended that all new incoming students in 1999 be required to acquire a PC when they enter Lingnan. However, it is not to be realized even now.

Budgetary Implications

Implementation of Information Literacy Requirements does need additional resources. It has direct and indirect budgetary implications:

Direct Implications: Immediate outlay is required to obtain CBT (Computer-Based Training) packages, videotapes, and books for various learning alternatives for Level-1 knowledge. Honoraria for staff (internal or external) conducting workshops or short courses and developing competency examinations should also be budgeted. Some PCs on the campus should be upgraded or replaced to accommodate the essential software packages and Internet applications included in the Level 1 knowledge. All lecture rooms on campus should also be equipped with PCs. In addition, removing the Internet access bottleneck and providing easy access to popular software packages and various on-line databases to all

Lingnan staff and students regardless of where their workstations are (it could be the workplace, hostel, or home) should be a top priority item for Information Literacy Requirements implementation. Furthermore, professional development in the area of information literacy for many teaching staff should be encouraged and some resources set aside for this purpose. To require every new student at Lingnan to acquire a PC could be a serious financial burden to the student if the entire cost of the PC is to be assumed by the student. Strategic alliances with selective hardware/software vendors and financial institutions should be encouraged to undertake this ambitious plan. A task force consists of relevant stakeholders should be formed to explore various alternatives for the requirement. IT strategies for Lingnan would have to be updated to reflect this requirement. Subsequently, most of the resources outlined under direct implications were obtained to enable the implementation of Information Literacy Requirement in fall of 1999.

Indirect Implications: As information literacy is being promoted and required, both students and staff will become more IT literate and will use IT to a greater extent; thus, they will exert a greater demand on the IT infrastructure at Lingnan. They will also have a higher expectation of the IT-related services provided on campus. It means that information literate staff and students will demand more powerful hardware, state-of-the-art software, faster data communication lines, etc. than the institution offers at present. The costs associated with IT infrastructure upgrade and improvement could be substantial.

Both direct and indirect budgetary implications of Information Literacy Requirements were presented to the Senior Management Group and IL stakeholders and most of the relevant Level 1 budget requests were funded subsequently. An Institutional Teaching Development Grant was also funded to meet the near term needs for the Information Literacy Education Program.

Implementation Timetable

Taking into consideration the lead time required for informing the incoming new students of the Information Literacy Requirements and for the planning of various learning alternatives, the earliest start time for the implementation of information literacy requirement was pushed back from 1998-99 academic year to 1999-2000 academic year. The first batch of graduates from Lingnan meeting the requirement would be the class of 2002. The PC requirement for new students was planned to start later than 2000-2001 academic year.

CURRENT STATUS OF INFORMATION LITERACY EDUCATION

A university required course, BUS100 Introduction to Information Technology, was subsequently introduced and made required for all students entering Lingnan beginning September 1999. This course is the nucleus of the Information Literacy Requirement.

A University Required Course

The Introduction to Information Technology course is a university-wide requirement for all the undergraduate students in Lingnan University. This course provides an understanding of the concepts and skills required for an information literate person. The areas covered include the implications of the information society, ethical issues and

netiquette in the information society, information sources and access, basic personal computer productivity tools, essentially based on the outline of Level 1 information literacy knowledge (Attachment 1). A lab component provides opportunities for students to pick up knowledge and skills to access the Internet and use Microsoft Office suite tools via Lingnan campus network. The current course syllabus and schedule is shown in Attachment 3.

For foundation knowledge, the coming of the Information Age and the rise of computer applications, the course explains the phenomenon of Information Explosion as a result of the spread of Internet/WWW. The course also examines the impact of IT on the Society with respect to cultural, economical, and political aspects as well as the impact on individuals, such as work and health issues. The future of the Information Age and the need for Information Literacy will also be discussed to accentuate the importance of the course to students.

Students then acquire information analysis skills such as concept of problem solving; decision-making process (defining the problem, deriving alternative solutions, deciding on the solution and implementing the solution). In addition, various decision making approaches and types such as qualitative and quantitative decision making; judgmental decision making; structured, semi-structured and unstructured decisions are examined.

With the new amendments to the Copyright Ordinance in Hong Kong enforced on 1 April 2001, intellectual property issues are becoming much more important to Hong Kong organizations and individuals. Students need to be aware of it together with other ethical and societal dimension of IT, such as ethical technology principles and information ethics (O'Brien, 1998, 563-565). Major issues in information ethics such as privacy, accuracy, property, and accessibility are covered and deliberated thoroughly in the course. Computer crimes and misuses are introduced and related laws covered. In addition, the impact of Internet on computer crimes, and new types of problems created or intensified because of the Internet and WWW such as e-commerce crimes, hacking, and viruses and worms are examined. Students also learn about security of computer systems and/or the Internet: the risks and methods to safeguard against threats against them.

Information technology consists of hardware and software technology is a major part of the course. Hardware technology knowledge includes CPU, storage devices, input & output devices, and the trend. Software technology knowledge includes system and application software, and PC productivity software (William & Sawyer, 2001). In addition, PC and its components, LAN, WAN, the Internet and telecommunication are especially emphasized. System development concepts such as System Development Life Cycle (SDLC), prototyping, programming languages, and database approach are also covered.

To pass the course, students need to have successfully taken a series of IT skill tests, for example, on Chinese and English keyboarding skill (Chinese Input Method, CangJie), operation on Windows, word processing (English and Chinese), spreadsheet, presentation tool, Internet: WWW browsing, email, file transfer protocol (FTP), newsgroup (Usenet), web page development etc. With the acquired IT skills, students will be able to

appreciate the application of information technology in areas such as, Electronic Commerce, Management Information System (MIS), Decision Support System (DSS), Executive Support System (ESS) and other which are covered in the later part of the course. The assessment of the course is based on continuous assessment of 50% and a final examination of 50%.

Support Beyond the Course

(i) Library

Each semester, staff members of the library hold workshops to teach students how to access different kinds of resources in the library. For example, the On-line Public Access Catalogue (OPAAC); Subject-oriented databases, e.g. Sociological Abstract, EconLit, etc.; Multimedia CD-ROM; Interactive videodisks; Full text CD-ROM, e.g. Business Periodicals OnDisk (BPO) (image full-text); On-line databases, e.g. ProQuest, Dow Jones, Academic Universe, Computer Select, WiseNews, etc.; World Wide Web (WWW); Career Information Sources. At the end of each workshop, students need to complete a library exercise to demonstrate their skills in access resources in the library. The list of workshops is given below:



- Introducing Library Resources for New Students
- Locating Business Studies
- Locating Chinese Resources
- Locating English/Translation Resources
- Locating Social Sciences/Cultural Studies Resources
- Locating Full-text Journal Articles
- Locating News Resources (Hong Kong/China)
- Information Research on the Web
- Locating Statistical Resources
- Locating Company Information/TEJ
- Job Hunting on the Web
- Using Datastream
- Using Social Sciences Citation Index/Journal Citation Report

(ii) Information Technology Services Center (ITSC)

ITSC (formerly Computer Services Center) provides technical support for teaching and maintains computer labs throughout the campus. Staff and students may also check out from ITSC equipment such as Digital Camera, Video Camera, Video Capturing facility, sub-notebooks, etc. to aid the teaching and learning process. Besides hardware and software support, staff from ITSC will provide expertise to staff and students throughout the semester.

(iii) Teaching and Learning Center (TLC)

TLC (formerly Education Technology and Development Center) staff manages WebCT to provide a platform for Web-based teaching. Academic staffs are encouraged to adapt to the use of TLWeb, (Lingnan version of WebCT) to communicate with students on Web, and in turn, students are being exposed to the use of educational software package.

(iv) Student Services Center (SSC)

SSC works closely with ITSC to ensure that hostel web pages and student organization web pages are grounds for students to practise IT in their daily lives. Recently a dedicated student web server was acquired and made home to all students for their homepages.

Accomplishments and Assessment

Upon completion of the course, students are able to gather data from various resources, for example, the Internet, library, journals, newspaper, magazine, daily life, etc. and use appropriate analytical tools to convert these data into useful information to support their decision making process. The acquired skills can be used in all other subjects in the undergraduate program at Lingnan University, and later on, throughout their careers to support a life long learning goal. This is the reason why students are to complete this course in their first year of study so that other courses would be benefited with the skills acquired in this course. Student evaluation results and feedback for the course have been excellent. A formal review of the Information Literacy Requirement and the Introduction to Information Technology course will be carried out in Academic Year 2001-2002.

Looking into the Future

Since students from all disciplines in Lingnan are to enroll in this course. One of the practical problems with this course arises from different levels of computer competency for students in different disciplines. For example, students from English department will not be as skillful in Chinese keyboarding as a student from the Chinese or Translation departments. Also the knowledge and skill sets of the incoming high school graduates vary greatly. There are always a few students who are skillful in computer software but lack the concept of application and the ecology of IT. For these students, some of the course contents would be less challenging; as a consequence, they lose interest as a group. It is a difficult task for the instructor to balance the knowledge requirement for all students.

In the future, students will be required to rely on self-help courseware that can better cater to different levels of computer competency. Although computer-based training software packages are already being used in this course, they alone cannot be used to overcome all of the IT skill sets.

Currently Lingnan is implementing an integrated administrative information system that is based on SCT Banner with Campus Pipeline web-based interface. Thus, when completed, all staff and students would have a single portal for both administrative and academic applications via intranet and e-mail facilities. With the new integrated information system in place, staffs and students should have a closer communication. In due course, students will be encouraged to complete a self-paced training software package and even conduct the assessment on an on-line basis.

CONCLUSION

After two years preparation, Lingnan University implemented the Information Literacy (IL) Requirement in 1999 for all its undergraduate students. The goal of this requirement is to prepare Lingnan graduates to be information literate so that they would

recognize when information is needed and have the ability to locate, evaluate and use effectively the needed information. Thus, Lingnan graduates would know how to learn; how to find information; how to organize information; and how to use information. With this ability, Lingnan graduates would become effective life-long learners and productive members of the society.

Since, in modern days, searching, finding, organizing, and analyzing information require IT resources, IT knowledge and skills form the essential elements of the IL Requirement. An Introduction to Information Technology thus became the nucleus of IL Requirement at Lingnan. In addition, various units/departments at Lingnan also joined force to provide teaching and learning resources to help implement the IL Requirement. From all indications, the IL Requirement appears to have served its original intent. However, a formal review is being conducted to assess its effectiveness and to search for ways for improvement.

Several difficulties have been identified in the last two years with IL Requirement. First, the fact that students come with varied IT and IL knowledge and skills levels making the presentation of materials difficult in classes and workshops. For the same materials, some students may feel they are too easy while others may feel that they are too advanced. The solution seems to point to self-paced learning materials and individual assessment mechanism. Second, with the large number of students, oftentimes, multiple-choice questions were used in tests and examinations. However, these questions are ill-equipped to test the problem-solving abilities of students. Open-ended questions or cases are better at assessing students' problem-solving abilities but would consume too much instructional resource. Third, the fact that advancement in IT is so rapid making teaching materials obsolete overnight; instructors also have to devote much time and effort to keep themselves up-to-date. Stakeholders of IL Requirement are currently evaluating various alternatives to overcome these three difficulties.

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Attachment 1

OUTLINE OF LEVEL 1 INFORMATION LITERACY KNOWLEDGE

1. FOUNDATION KNOWLEDGE

1.1. Information Age

Information Explosion

Impact of IT on the Society: Cultural, Economical, and Political Aspects

Impact of IT on the Individual: Types of the Work, Nature of the Work, Health Issues

Your Future in the Information Age

Need for Information Literacy

1.2 Information Analysis Skills

1.3. Ethical Issues

Privacy, Accuracy, Property, and Access

Computer Security: Risks and Safeguards

1.4. IT Knowledge

What is a Computer? What are the Components of a Computer?

Input, Output, and Secondary Storage Devices

The System Unit

Communications and Networks

Computer Software: System and Application Software

Concept of System Development Process

Program Development and Computer Language Concepts

Future Trends

2. INFORMATION SOURCES

2.1 On-line Public Access Catalogue (OPAC)

2.2 Subject-oriented CD-ROM databases, e.g., Sociofile, Econlit. etc.

2.3 Multimedia CD-ROM

2.4 Interactive videodisks

2.5 Full-text CD-ROM, e.g., Business Periodicals Ondisc (BPO) (image full-text),
Computer Select (ASCII full-text)

2.6 On-line databases, e.g., Dow Jones

2.7 World Wide Web (WWW)

2.8 Web-based Information Services, e.g., Ovid

2.9 Career Information Resources

3. IT SKILL SETS

3.1. Keyboarding Skills (Chinese and English)

3.2. Operating Systems and Environments

Basic DOS Commands; Basic Windows Operations: Menus and Commands;
Using Windows Help

3.3. Word Processing (Chinese and English)

Document Creation; Basic Editing; Printing; Basic File Importing and Exporting;
Help Menu

3.4. Spreadsheet

Cell and Range Manipulations; Saving and Printing Worksheets; Formulas;
Help Menu

3.5. Presentation Tools

Slide Presentation; Basic Outline View; On-line Help

3.6. Internet Applications

Internet Browsers; E-mail; FTP; WWW, newsgroups, mailing lists



Attachment 2

**Curriculum Planning Matrices for
Information Literacy Requirements (Level 1)**



Curriculum Planning

Matrix

Information Literacy Requirements (Level 1)

Information Technology	Workshops	Libraries	Workshops	Text Workshops	WWW Workshops	Online Workshops	C - Pro	010 al	Ethics	20 enc	Val ue	050 nes	s	070 &	Soci	ety	Ident nselijJI	ng S	Unit	Carer	Decisi	on	Makin	g	Educa	tional	Planni	ng	ologic	al	Testin	g	Carer	Resou	rces	Librar	Work	Shop
------------------------	-----------	-----------	-----------	----------------	---------------	------------------	---------	--------	--------	--------	--------	---------	---	-------	------	-----	----------------	------	------	-------	--------	----	-------	---	-------	--------	--------	----	--------	----	--------	---	-------	-------	------	--------	------	------

Linking Teaching and Assessment Method - How these competencies will be taught and assessed ?

Info

General L-Lecture, B- Lab C- CBT, W-Workshop, T- Competence Test

(a co

I. FOUNDATION KNOWLEDGE

1.1 Information Age																																							
Information Explosion	L																																						
Impact of IT on the Society: Cultural, Economical, and Political Aspects	L								L	L	L	L																											
Impact of IT on the Individual: Types of the Work, Nature of the Work	L								L	L	L	L																											
Your Future in the Information Age	L																																						
Need for Information Literacy	L																																						
1.2 Information Analysis Skills	L																				W																		
1.3 Ethical Issues																																							
Privacy, Accuracy, Property, and Access	L								L	L	L	L																											
Computer Security: Risks and Safeguards	L								L	L	L	L																											
1.4 IT Knowledge																																							
What is a Computer? What are the Components of a Computer?	L																																						
Input, Output, and Secondary Storage Devices	L																																						
The System Unit	L																																						
Communications and Networks	L																																						
Computer Software: System and Application Software	L																																						
System Development Process	L																																						
Program Development and Languages	L																																						
Future Trends	L																																						
2. INFORMATION SOURCES																																							
2.1 Online public access catalogue (OPAC)			L																																			L,W	
2.2 Subject oriented CD-ROM databases, e.g. Sociofile, Econlit etc.					W,T																																		
2.3 Multimedia CD-ROM					W,T																																		
2.4 Interactive videodiscs																																							
2.5 Full-text CD-ROM, e.g. Business Periodicals Ondisc (BPO) (image full-text), Computer Select (ASCII full-text)						W,T																																	
2.6 Online databases, e.g. Dow Jones										W,T																													
2.7 World wide web (WWW)				L					W,T																														
2.8 Web-based information services, e.g. Ovid									W,T	W,T																													
2.9 Career Information Search																																							
2.10 Education Information Search																																							
2.11 Computerized Psychological Testing																																							
3. IT SKILL SETS																																							
3.1 Keyboarding Skills (Chinese and English)																																							
3.2 Operating Systems and Environments Basic DOS Commands; Basic Windows Operations: Menus and Commands; Using Windows Help			B																																				
3.3 Word Processing (Chinese and English) Document Creation; Basic Editing; Printing; Basic File Importing and Exporting; Help Menu																																							
3.4 Spreadsheet Cell and Range Manipulations; Saving and Printing Worksheets; Formulas; Help Menu																																							
3.5 Presentation Tools Slide Presentation; Basic Outline View; Online Help																																							
3.6 Internet Applications																																							



<p>Curriculum Planning Matrix Information Literacy Requirements (Level 1)</p>	BUS Introductory Technology	Library Workshops	- CD-ROMs - Full-text - WWW - Online workshops	CS - C - Programs - Productivity - Tools	GE2 Social Ethics	GE2 Science & Technology	GE2 Business Ethics	GE2 Law & Society	Student Unit	Counseling Skills	Career Decision Making	Educational Planning	Psychological Testing	Career Resources Library Workshops	Study Skills					
<p>Lingnan Graduate Profile - Information literacy competencies: Generic (a common curriculum for all Lingnan students) 1. FOUNDATION KNOWLEDGE</p>	Curriculum Components - Where these competencies can be taught ?																			
1.1 Information Age																				
Information Explosion	X																			
Impact of IT on the Society: Cultural, Economical, and Political Aspects	X					X	X	X	X											
Impact of IT on the Individual: Types of the Work, Nature of the Work	X					X	X	X	X											
Your Future in the Information Age	X																			
Need for Information Literacy	X																			
1.2 Information Analysis Skills	X											X								
1.3 Ethical Issues																				
Privacy, Accuracy, Property, and Access	X					X	X	X	X											
Computer Security: Risks and Safeguards	X					X	X	X	X											
1.4 IT Knowledge																				
What is a Computer? What are the Components of a Computer?	X																			
Input, Output, and Secondary Storage Devices	X																			
The System Unit	X																			
Communications and Networks	X																			
Computer Software: System and Application Software	X																			
System Development Process	X																			
Program Development and Languages	X																			
Future Trends	X																			
2. INFORMATION SOURCES																				
2.1 Online public access catalogue (OPAC)			X																X	
2.2 Subject oriented CD-ROM databases, e.g. Sociofile, Econlit etc.			X																	
2.3 Multimedia CD-ROM			X																	
2.4 Interactive videodiscs											X	X								
2.5 Full-text CD-ROM, e.g. Business Periodicals Ondisc (BPO) (image full-text), Computer Select (ASCII full-text)					X															
2.6 Online databases, e.g. Dow Jones																				
2.7 World wide web (WWW)			X					X	X								X	X		
2.8 Web-based information services, e.g. Ovid					X	X														
2.9 Career Information Search											X							X		
2.10 Education Information Search													X		X					
2.11 Computerized Psychological Testing													X	X						
3. IT SKILL SETS																				
3.1 Keyboarding Skills (Chinese and English)	X													X						
3.2 Operating Systems and Environments Basic DOS Commands; Basic Windows Operations: Menus and Commands; Using Windows Help	X													X						
3.3 Word Processing (Chinese and English) Document Creation; Basic Editing; Printing; Basic File Importing and Exporting; Help Menu	X													X						
3.4 Spreadsheet Cell and Range Manipulations; Saving and Printing Worksheets; Formulas; Help Menu	X													X						
3.5 Presentation Tools Slide Presentation; Basic Outline View; Online Help	X													X						



Attachment 3

BUS 100 Introduction to Information Technology 1st Semester, 2001-2002

Course Description

This course provides an understanding of the concepts and skills required for an information literate person. The areas covered include the implications of the information society, ethical issues and netiquette in the information society, information sources and access, basic personal computer productivity tools. The completion of this course meets the Information Literacy Requirement.

Course instructors

Mr. Alan Lam	alanlam@ln.edu.hk	BUG07	Extension 8094
Dr Alfred Loo	alfred@ln.edu.hk	BUG10	Extension 8091
Dr Man Leung Wong	mlwong@ln.edu.hk	BUG08	Extension 8093
Ms Judy Lo(Course Coordinator)	lojudy@ln.edu.hk	BUG15	Extension 8104

Teaching Method

This course is conducted by 'sectional approach'. In a smaller class, teachers are able to foster stronger ties with students through lecturing, case studies, debates, project assignments, small group discussions, and/or presentations.

The major medium of instruction is the English language, which is also the only language approved for written assignments, tests, and examinations. However, it is the individual teacher's discretion to choose between English, Cantonese and Mandarin during classes for the sake of better clarification of special terms and concepts.

Students are encouraged to contact the Course Coordinator if they have questions concerning administrative matters. For learning difficulties, they should seek advice from their corresponding instructors.

Course Schedule

Week	Contents in Textbook	
1 – 13	Introduction to IT The Internet and the WWW Application Software System Software E-Commerce, Files & Databases Hardware CPU & Storage Hardware Input & Output Telecommunications	Chapter 1 Chapter 2 Chapter 3 Chapter 4 (p.136-p.139 and some selective terms from p.142-p.149) Chapter 8 (p.315-p.316, p.319-p.324, p.334-p.338) Chapter 5 (p.172-p.204) Chapter 6 (p.223-p.245, p.251-p.255) Chapter 7 (p.270-p.284, p.287-p.291, p.295-p.296, p.300)

	The Challenges of the Digital Age: Society & IT Today The Promises of the Digital Age: Society & IT Tomorrow Information Systems Programming Languages	Chapter 9 (p.350-p.360) Chapter 10 (Assigned reading on sections 10.3, 10.4, 10.5, 10.6, 10.7, 10.8) Chapter 11 (p.410-p.416, p.421-p.428) Appendix A (p.436)
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Lab Schedule

Week	Content covered in Labs
1-2	Introduction to campus system, Windows, Novell, Email, Internet, WWW and library workshop
3-5	MS Word, Chinese Input Method
6	MS PowerPoint
7	MS PowerPoint IT Skill Test – Chinese Input Method, MS Word
8-9	MS FrontPage
10	MS Excel IT Skill Test – MS PowerPoint
11	MS Excel
12	Project Presentation
13	Project Presentation IT Skill Test - MS Excel

Please note that both of the above tables are tentative schedules only and will vary according to individual section.

Text Book

Author: Williams & Sawyer

Title: *Using Information Technology (Complete Version)*, Fourth Edition

Publisher: McGraw Hill

Year: 2001

Additional text would also be supplied during the term.

Computer-based Training Package

Microsoft Interactive Training Press

Course web site

General notices and related information will be distributed through the course web site:

<http://cptrd.ln.edu.hk/~bus100>

Course Assessment

Continuous assessment

IT Skill Test 20%

Workshop 10%

Assignment	10%
Group Project (5-6 persons)	10%
Final Examination	50%

Warning

Plagiarism will nullify your scores.

Students have the full responsibility of the proper use of information technology (software, hardware, Internet, etc.) on the campus.

Assignments should be handed in to your teacher by due date.

Punctuality is to be observed.

Students are expected to attend **at least 70%** of all classes. NOTE: students attended less than 70% of the classes will not be allowed to sit for the examination.

General rules of classroom disciplines should be observed. The use of mobile phones and pagers should be prohibited during class.

All tests must be attended. No re-assessment test/exam will be given to students for trivial matters.

