Knowledge Update Course for Secondary School Computer and IT Teachers

Social Implication

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Introduction

- Computer and information technology, CIT, the gateway to a new 'information society'
- John Sculley: "...will forever change the way we educate our children, train and retrain our workers, earn a living, manufacture products, deliver services of all kinds and interact with families and friends."
- Clinton authorized spend of $2 billion on information superhighway.

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The Information Society

- Decentralized
- Choice-empowering
- Environmental friendly

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Technology and Society

- Edward Wenk: "...must understand how technology interacts with people and with politics and how critical are factors of human and institutional behavior in technological decisions,"

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Organizing Strategy of Social Issues

- What are the most effective approaches to appreciate the ethical issues of computerization?
- What are the non-subject-specific requirements?
- What are other learning objectives?

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Facilitation and Motivation

- Focal point, social behavior of people who develop and use computer systems.
- Accommodate motivations, backgrounds and interests.
- Starting Barrier, applicable to personal life?
- Familiar to unfamiliar, not involving to involving.

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Contents

- CIT in Education
- CIT vs Human Culture and Social Life
- Job Nature and Work Stress
- Crime Evolved from Technology
- Legislation
- Security

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CIT in Education

- Interests in CIT in Education
- Virtual Classroom
- Virtual Library
- E-book
- E-learning Management System
- Other applications

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CIT vs Human Culture and Social Life

- Collaboration
- Communication
- Artificial Intelligence

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Social Interaction

Cues in the interaction

- Face-to-Face
- Net-commuting

Identity Issues

- Authentication and Trust
- Agent

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AI and expert system

- Artificial Intelligence (AI) is usually defined as the science of making computers do things that require intelligence when done by humans.
- AI for learning, reasoning, problem-solving, perception, and language-understanding.
- AI simulates human response.
- Uses of AI system..

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Artificial Intelligence Chatterbots

- Bots, autonomous agents, play increasing role in the organization of social life.
- Find information relative easy.
- Sweep away conventional organizations.
- 'End' intermediates and 'Flatten' layers in social life.

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Examples of AI Bots

- Retailer

(By collaborative filtering, understand customer tastes etc.)

- Virtual Shopping

(By induction and negotiation etc.)

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Personal AI Agent

- Web Search, e.g. Sherlock
- Personal financial agent
- Personal health agent
- Social issues of using personal AI agent
- Application of personal AI agent

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Social Impact of AI Agent

- A study: By 2005, at least 25% of the PC user base will allow their personal agents to anticipate their needs.
- Impact on human relationships.
- Some predict, by 2047 all information about physical objects, including humans, buildings, processes and organizations, will be online. This is both desirable and inevitable. (Gordon Bell and Jim Gray)

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Workplace Computerization

- Traditional workplaces highly centralized.
- Computerized workplaces both centralized and decentralized.
- Workplace computerization changes culture and social life.
- Visible functional decentralization with underlying centralization of control.

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Rely on Staff

- Workplace computerization results more rely on staff.
- Advanced technology, expensive and vulnerable, heightened dependence on productivity, cost-effectiveness, and quality control.
- Decentralized but multi-skills teams.
- Organizational design, social and technical dimensions complement each other.

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Small Office Home Office

- Workplaces with geographical decentralization in the form of telework.
- Government support. More prevalent in future?
- Attitude towards SOHO

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SOHO Social Implication

- Face to face interactions, partner relations, client relations
- Work compared in company office building, less visible to peers, less likely to be appreciated or promoted, more difficult to be supervised or to supervised.
- Home related problems, self-discipline, home-based distractions, home commitment conflicts.
- Social life, autonomy and empowered, or isolated and monitored.

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Global Village

- Commuting life.
- Cultural life.
- Advantages of closing geographic gaps.
- The Enabling technologies.

1. Energy consumption
2. Environmental protection
3. Safety..

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Alienation

- Professional and clerical workers
- Technology shapes and reflects social matrix of organization and socioeconomic systems.
- Deskilling of labor-process trades.
- Increasing managerial control.
- Upgrading and expansion of more skilled occupations.
- Fastest growing occupational groups
- Workforce division

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Upskilling and Deskilling

- Automation, from mechanization to information enhanced.
- Advanced technology and low technology trades.
- High technology deskilling.
- Observations
- Awareness

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Work Design Observations

- When work was organized around self-governing worker teams and worker learning, the result was better quality products and superior market position
- A tendency is to design and implement computerized technology in a manner consistent with centralized control.

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Job Nature

- Fewer hierarchical levels occupation structure.
- Delaying and elimination of middle-level positions.
- Extensive computerization (superautomation) and dramatic reduction in size of production work force.
- Polarization and informal organizational structure.
- Less defined communication channels.
- Adhocracy.
- Bureaucratic constraints relaxed to creativity and flexibility.
- Autonomy and decision making.

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Work Stress

- Work stress, a by-product of extensive use of CIT.
- A poem: "I was much too far out all my life. And not waving, but drowning".
- Less 'face work'. Less visible, less appreciated, less 'traditional' power to use, such as a sense of supervised or being supervised.
- Problems of self-discipline.

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'In evitable' Stress

- No simple as 'simpler' times. Few people abandon CIT.
- Some people resist CIT but use CIT unconsciously.
- Simplify a problem with a solution that create further complex problems.

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Information Overload

- Optimistic View: Information and Data.
- The information comes to us as 'stories, documents, diagrams, pictures, or narratives; as knowledge and meaning, and in communities, organization, and institutions.
- Free information overloaded.

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Crime Evolved from Technology

- Chain letters
- Software theft
- Hacking
- Virus
- Child-porn

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Chain letters

- Czech Republic : A man shot and killed a Nigerian diplomat after losing his life savings to the scam.
- scammers are trying to take advantage of heightened interest in Iraq, posing as frightened Iraqis trying to move money out of that country before flighting begin.

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Software theft

- Jon Johansen, known in Norway as "DVD Jon," is charged with helping to crack a code and develop and distribute a program--known as DeCSS--on the Internet that enables users to make unauthorized copies of DVD movies.
- Italian finance police and a technology watchdog group have broken up an online piracy ring. Business Software Alliance (BSA) have teamed up on a year-long investigation, resulting in the arrest of one group member.

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Hacking

- Boston College student installing keystroke-recording software on more than 100 campus computers and accessing databases containing personal information on other students, staff and faculty.
- Japanese police arrested two men on suspicion of withdrawing 16 million yen from the account of a Net-bank user after obtaining the personal identification number from a computer at an Internet cafe.

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Viruses

- Wales: A web designer arrested and charged with hacking and sending the "Gokar Redesi" and "Admirer" email computer viruses.
- US authorities want to extradite a UK hacker accused of breaking into nearly 100 government and private-sector computers . The hacker is an unemployed computer programmer living in London, is alleged to have caused damage estimated at more than ?00,000.

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Censorship

- Visa is reporting sites with illegal photos and videos to the global police forces responsible for enforcing child-porn laws. Visa estimates that 80 percent of the 400 Web sites it has identified as child porn have either been shut down by law enforcement or have had their Visa privileges terminated.
- US congress fail to pass Virtual child porn law.

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Legislation

- US Department of Homeland Security would punish malicious computer hackers with life in prison. The U.S. House of Representatives voted 299 to 121 to approve the bill.
- Russia has become a major source of child pornography because the country has no laws governing the production or dissemination of such material.
- In October of 2000, police officers in Minnesota began investigating Dale Robert Bach for potential child pornography crimes.

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Intellectual property rights

- The society protect of the IP rights encourage creativity.
- IP is a legal concept.
- Hong Kong IP Law
  http://www.info.gov.hk/ipd/eng/iplaws/summaries/summaries.htm
- Trade Marks
- Patents
- Registered Designs
- Copyright

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IP Law

- The law's purpose is mainly to encourage creativity in the arts, science and industry. It does this by offering financial incentive to creators.

1. Industrial property rights (20 years)
2. Industrial designs (15 years)
3. Layout-designs of IC (10-15 years)

- Intellectual property department

http://www.info.gov.hk/ipd/

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Copyright

- Copyright protects creativity. The efforts of writers, artists, designers, software programmers and other talents need to and should be protected so as to create an environment where creativity can flourish and hard work can be rewarded.
- Four categories of copyright works: software, movies, music and TV programmes.
- Getting and giving copyright permission

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Other Copyright Issues

- Infringing
- Copyright exceptions
- Internet Browsing

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Software Asset Management

- Responsible to copyright at individual level.
- List all the licenced software and forbid pirate software.
- Periodical software audit.

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Getting and Giving Copyright Permission

- Permission to reproduce copyrighted content such as articles and book chapters in journals, photocopies, coursepacks, library reserves, Web sites, e-mail etc.
- Compensate publishers with royalty by licensing your copyrighted works.
- Online copyright permission services

http://www.copyright.com/

- Other ways of getting and giving permission.

http://www.utsystem.edu/ogc/intellectualproperty/permissn.htm

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Freeware

- Copyrighted software given away for free by the author.
- Although it is available for free, the author retains the copyright, which means that you cannot do anything with it that is not expressly allowed by the author.
- Usually, the author allows people to use the software, but not sell it.

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Shareware

- Shareware is software that relies on the kindness of strangers to turn a profit.
- Downloaded from the Internet (versus sold in a store), it often has a free trial period (30 days or so) at which time the program stops working.
- Or it keeps on running, but prompting you to send the shareware developer a payment if you want to continue using it.

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Trial Versions

- Trial version are not to be used as bought software full versions.
- Trial versions are time limited, or urge you to pay consistently.

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Security

- SPAM
- Virus
- Privacy
- Hacking
- Consumer
- Protection

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SPAM

- The term spam refers to unsolicated commercial advertisments distributed online.
- Most spam comes to people via email, but spam can also be found in online chat rooms and message boards.
- Spam consumes a tremendous amount of network bandwidth on the Internet.
- More importantly, it can consume too much of peoples' personal time if not managed properly.

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Virus

- A virus is malicious code that replicates itself. New viruses are discovered daily. Some exist simply to replicate themselves. Others can do serious damage such as erasing files or even rendering the computer itself inoperable.
- A worm is similar to a virus. They replicate themselves like viruses, but do not alter files like viruses do. The main difference is that worms reside in memory and usually remain unnoticed until the rate of replication reduces system resources to the point that it becomes noticeable.
- A Trojan horse is called such as a reference to the story of the Trojan horse from Greek legend. It is a malicious program disguised as a normal application. Trojan horse programs do not replicate themselves like a virus, but they can be propagated as attachments to a virus

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Privacy

- Web site operators to comply with the Personal Data (Privacy) Ordinance (PDPO) in the collection, display and transmission of personal data over the Internet.
- An e-Cert Promotion and Support Centre was set up jointly with Hong Kong Post in February 2000 to promote the use of e-Cert.

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Hacking

- Hacker is commonly used to refer to any individual who uses their knowledge of networks and computer systems to gain unauthorized access to computer systems.
- Hacking tools.

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Consumer

- Personal Data Privacy and Consumer Protection on the Internet. Guide, 2000.

Choice magazine since June 1998 covering general and specific Internet topics. They include such items as –

- spamming
- securities trading on the Internet;
- Internet shopping;
- payment systems in e-commerce;
- Internet Sweeps to identify sites with dubious medical advertisements;
- the IDD trap i.e., problem sites that can redirect a dial-up Internet access connection to an overseas server via IDD;
- consumer data protection in e-commerce; and
- how to establish traders' identity in cyberspace

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Protection

- Prevention

Infrastructure and public education

- Encryption

Usability and security

- Legislation

Keep up with technology

- Jurisdiction

Education and fine

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