1. Basic Computing Concepts
(7) Electronic Activities

7   Electronic Activities

7.1   Electronic Learning

E-learning is education via the Internet, network, or
standalone computer. E-learning is essentially the
network-enabled transfer of skills and knowledge.
E-learning refers to using electronic **applications**
and **processes** to learn.

E-learning applications and processes include:
- Web-based learning
- Computer-based learning
- Virtual classrooms
- Digital collaboration

Content is delivered via the Internet, intranet/extranet, audio or video tape,
satellite TV, and CD-ROM.

7.1.1 Self-Paced Courses

The obvious advantage of a self-paced course is **convenience**. People can get the
training they need at any time. A person gets exactly the training he or she needs
to perform a task (**self-paced** courses).

Self-paced courses usually have these features:
- **Multimedia** (graphics, animation, audio etc.)
- **Interactivity**
- **Bookmarking** (learner can stop and continue later)
- **Tracking** (report the learner's performance)

Some self-paced courses have these
advanced features:
- **Simulation** (e.g. flight simulator)
- **Online Experts** (e.g. chat or online discussion)

7.1.2 Discussion Groups

A **discussion group** is a collection of conversations that occur over time. Other names for discussion groups are **message boards**, **bulletin boards** and **discussion forums**. A discussion group might start out as a question from an individual. Later, another individual responds to that question. Others can respond to the question (creating a **thread**) or they can start their own conversation (forming another thread). A threaded discussion might also start with a teacher asking an open-ended question that leads to a class discussion.

7.1.3 Virtual Classroom

A **virtual classroom** duplicates the capabilities found in a real classroom. A virtual classroom provides:

- A place to **meet**: Students and teachers use their computers to go to a virtual meeting place instead of a classroom.
- Take **attendance**: A list of students is recorded.
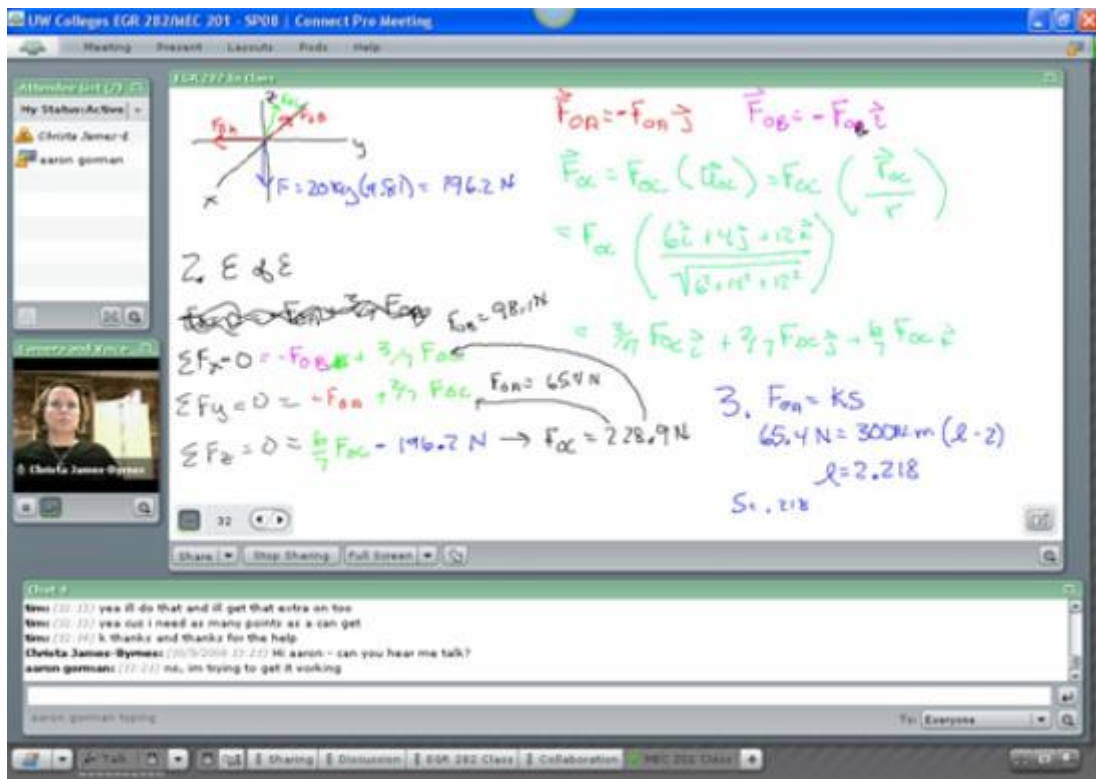
- Lecture: Teachers can choose from a variety of synchronous technologies including:
  - **Slide presentation**
  - **Audio and video conferencing**
  - **Application sharing**
  - **Shared whiteboard**

- **Interaction** with students: Students can indicate when they want to speak by virtually raising their hand. Teachers can let students speak through audio and video conferencing. Teachers and students can use **instant messaging** and **chat**.
- **Exercises**: Teachers can present questions to students.
- **Groups**: Students can work together in groups.

7.1.3.1   Moodle

Moodle is a **Course Management System** (**CMS**), also known as a **Learning Management System** (**LMS**) or a **Virtual Learning Environment** (**VLE**). It is a free web application that educators can use to create effective online learning sites.

Moodle has features that allow it to scale to very large deployments and hundreds of thousands of students, yet it can also be used for a small group. Many institutions use it as their platform to conduct fully online courses, while some use it simply to augment face-to-face courses.

Some features of Moodle are:
- **Forums**
- **Databases**
- **Wikis** (A wiki is a website which allows its users to add, modify, or delete its content via a web browser usually using a simplified markup language or a rich-text editor. Most are created collaboratively)
- Means to **assess** learning using assignments or exercises.

Two other VLE products are WebCT and BlackBoard.

7.1.4 Audio and Video Conferencing

Audio conferencing can be implemented in two ways:
- Computers connected to the Internet. Common names for this kind of implementation are **IP Audio Conferencing** or **Voice-over-IP**.
- **Phone conferences**. People dial the same number to participate in an audio conference.

Video conferencing can also be implemented in two ways:

- Computers connected to the Internet. The computers need digital cameras.
- Special video conferencing devices that connect over the Internet or over phone lines.

7.1.5 Chat

Chat allows several people to communicate with each other. Each participant uses a computer to type their comments. The other participants can see the name of the person and their comments.

7.1.6 Shared Whiteboard

A **shared whiteboard** lets a group of people communicate by typing comments, drawing, highlighting and pointing. A shared whiteboard is a common feature within virtual classroom software packages.

7.1.7 Application Sharing

You can demonstrate how to use software applications to remote learners with **application sharing**. A teacher can also let the learner take control of the application to practice performing tasks.

7.1.8 Instant Messaging

Instant messaging is similar to chat. One person communicates to another through typing. Instant messaging also provides some additional features. With instant messaging, you can keep a list of people that you might like to chat with. The list will indicate if they are online, offline, available for chat or busy. These features make instant messaging an excellent tool for learning from peers.

7.1.9 Exercise

Discuss the pros and cons of face-to-face learning as compared with e-learning.

7.2 E-commerce

E -business and e-commerce are terms that are sometimes used interchangeably but the terms are different.

E-commerce covers outward-facing processes that touch customers, suppliers and external partners, including sales, marketing, order taking, delivery, customer service, purchasing of raw materials and supplies for production and procurement of indirect operating-expense items, such as office supplies.

E-business includes e-commerce but also covers internal processes such as production, inventory management, product development, risk management, finance, knowledge management and human resources. E-business strategy is more complex, more focused on internal processes, and aimed at cost savings and improvements in efficiency, productivity and cost savings.

Electronic commerce draws on such technologies as:
- **Mobile commerce**
- **Electronic funds transfer**
- **Internet marketing**
- **Online transaction processing** (e.g. Internet banking)
- Electronic data interchange (**EDI** e.g. sending orders by electronic means)

Modern electronic commerce typically uses the World Wide Web at least at one point in the transaction's life-cycle, although it may encompass a wider range of technologies such as e-mail, mobile devices, social media, and telephones as well.

E-commerce can be divided into:
- **E-tailing** or **virtual storefronts** on Web sites with **online catalogues**, sometimes gathered into a **virtual mall**.
- The gathering and use of **demographic** (demography is the study of the characteristics of human populations, such as size, growth, density, distribution, and vital statistics.) data through Web contacts and social media.
- Electronic Data Interchange (EDI), the business-to-business exchange of data.
- E-**mail** and **fax** and their use as media for reaching prospects and established customers (for example, with newsletters).
- **Business-to-business** buying and selling.
- The **security** of business transactions.
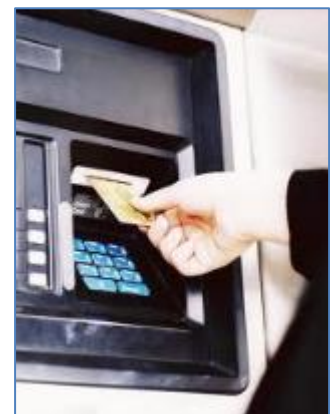
7.3 E-Business

7.3.1 EFT

Electronic funds transfer (**EFT**) is the electronic exchange, transfer of money from one account to another, either within a single financial institution or across multiple institutions, through computer-based systems.

7.3.2 EFTPOS

EFTPOS (**electronic funds transfer at point of sale**) is an electronic payment system involving electronic funds transfers based on the use of payment cards, such as debit or credit cards, at terminals located at points of sale.

7.3.3 B2B, B2C, B2G, B2E

Business-to-business (**B2B**) describes commerce transactions between businesses, such as between a manufacturer and a wholesaler, or between a wholesaler and a retailer. Contrasting terms are **business-to-consumer** (**B2C**) and **business-to-government** (**B2G**).

The volume of B2B (Business-to-Business) transactions is much higher than the volume of B2C transactions. The primary reason for this is that in a typical supply chain there will be many B2B transactions involving sub components or raw materials, and only one B2C transaction, specifically sale of the finished product to the end customer.

B2B is also used in the context of communication and collaboration. Many businesses are now using social media to connect with their consumers (B2C); however, they are now using similar tools within the business so employees can connect with one another. When communication is taking place amongst employees, this can be referred to as "B2B" communication.

B2E is **business-to-employee**, an approach in which the focus of business is the employee, rather than the consumer or other businesses (as it is in business-to-business, or B2B). In a broad sense, B2E encompasses everything that businesses do to attract and retain well-qualified staff in a competitive market, such as

aggressive recruiting tactics, benefits, education opportunities, flexible hours, bonuses, and employee empowerment strategies.

7.3.4 E-Service

The concept of **E-service** represents one prominent application of utilizing the use of ICT in different areas. E-Service is a highly generic term, usually referring to the provision of services via the Internet e.g. e-business and e-government.

There are obviously costs for setting up and maintaining any e-service. Some of them are the following:
- Expense of setting up applications
- Maintenance applications
- Hardware/software
- Security concerns
- Legal issues
- Training

7.3.5 Internet Banking

Online banking (or **Internet banking** or **E-banking**) allows customers of a financial institution to conduct financial transactions on a secure website operated by the institution, which can be a retail or virtual bank, credit union or building society.

To access a financial institution's online banking facility, a customer having personal Internet access must register with the institution for the service, and set up some **password** (under various names) for customer verification.

Tasks that a bank customer can perform include:
- Payments
- Viewing account balances
- Viewing recent transactions

7.3.6 E-mail

Electronic mail is the transmission of messages over communications networks. The messages can be notes entered from the keyboard or electronic files stored on disk. Some electronic-mail systems are confined to a single computer system or

network, but others have gateways to other computer systems, enabling users to send electronic mail anywhere in the world. Companies that are fully computerized make extensive use of e-mail because it is fast, flexible, and reliable.

Most e-mail systems include a rudimentary **text editor** for composing messages, but many allow you to **edit** your messages using any editor you want. You then send the message to the recipient by specifying the recipient's address. You can also send the same message to several users at once. This is called **broadcasting**.

Sent messages are stored in electronic **mailboxes** until the recipient fetches them. To see if you have any mail, you may have to check your electronic mailbox periodically, although many systems alert you when mail is received. After reading your mail, you can store it in a text file, forward it to other users, or delete it.

All online services and Internet Service Providers (ISPs) offer e-mail, and most also support gateways so that you can exchange mail with users of other systems. Usually, it takes only a few seconds or minutes for mail to arrive at its destination. This is a particularly effective way to communicate with a group because you can broadcast a message or document to everyone in the group at once.

Another important feature of e-mails is that one can **attach** any file/s to them. One disadvantage of email is unsolicited email messages called **spam**. Another more serious disadvantage is that emails can carry **malware** with them.

7.3.7 E-Government

E-Government (short for electronic government, also known as **e-gov**, **digital government**, **online government**, or **connected government**) is digital interactions between a government and citizens (**G2C**, **C2G**), government and businesses/Commerce (**G2B**), government and employees (**G2E**), and also between government and governments /agencies (**G2G**).

E-Government is defined as 'The employment of the Internet and the world-wide-web for delivering government information and services to the citizens.' (United Nations, 2006; AOEMA, 2005).

With regards to e-government four kinds of activities take place:
- **Pushing information** over the Internet, e.g.: regulatory services, general holidays, public hearing schedules, issue briefs, notifications, etc.

- **Two-way communications** between the agency and the citizen, a business, or another government agency. In this model, users can engage in dialogue with agencies and post problems, comments, or requests to the agency.
- Conducting **transactions**, e.g.: lodging tax returns, applying for services and grants.
- **Governance**, e.g. informing the citizen, encouraging the citizen to participate in discussions, involving the citizen, consulting the citizen etc.

While e-government is often thought of as "**online government**" or "**Internet-based government**", many non-Internet "electronic government" technologies can be used in this context e.g. telephone, fax, PDA, SMS text messaging, MMS, wireless networks and services, Bluetooth, CCTV etc.

7.3.8 Remote Access

Remote Access is the ability to log onto a network from a distant location. Generally, this implies a computer, a modem, and some remote access software to connect to the network.

7.3.9 Exercise

Discuss advantages and disadvantages with the electronic use in communication.