

Chapter Outline

I. Pace – Today’s technological pace is astounding. Consider a military example. Julius Caesar and Napoleon lived nearly 2000 years apart but both moved their troops mainly through walking or riding horses. Consider the technological advances in warfare during the 50 years between WWII and the Gulf War.

II. Definition – Technology is the application of scientific processes to resources for the purpose of extending our capabilities to meet our needs and wants – technology is a means to an end like learning to read and write; thus the end (the reason to use technology) is to maximize student learning.

III. ISTE Technology Standards – International Society for Technology in Education has produced standards for both learners and teachers. Summary Standards for Teachers:

- A. Teachers understand technology operations and concepts**
- B. Teachers use technology in developing the learning environment**
- C. Teachers use technology when delivering lessons**
- D. Teachers use technology during assessment and evaluation**
- E. Teachers use technology to enhance their own productivity**
- F. Teachers understand social, legal & ethical issues in using technology**

IV. Technology and Behavior

A. Technology as a Constraining Force – any choice of technology comes with disadvantages as well as advantages. Example, grading systems that can evaluate multiple choice responses lead toward only multiple choice testing

B. Existing Practices as a Constraining Force – introduction of new technology is met with resistance. Example #1, economic or power forces (AM vs FM radio); Example #2 time and effort requirements; students and teachers do not want to take the time and effort learn new technologies (QWERTY); Example #3 denigration of important skill (calculators, spell checkers)

V. Today's Technologies: Some Challenges

A. Ethical Challenges of special concern when working with young non-adult learners

- 1. Web sites with violent or sexually explicit material, chat rooms**
- 2. Copyright infringement (copying and pasting text, music)**
- 3. Cheating during exams using Instant Messaging**
- 4. Buying term papers through the Internet**
- 5. Identity theft**

B. Crossing the Digital Divide – high vs. low income; higher vs. lower educated; Whites/Asians vs. African Americans/Latinos; young vs. older people; employed vs. unemployed individuals.

C. Cost Challenges – costs for the initial equipment, costs to upgrade the equipment, costs to train personnel, costs to provide for maintenance personnel

D. New Technologies as Learning Distracters – cell phones, pagers, CD players with earphones, lap tops

E. Changing Teachers' Views of Their Roles – teachers may have to redefine their role, learn new technologies themselves

VI. Today's Technologies: Some Promises:

A. Learners with Special Needs_– provide multiple formats and media; multiple pathways; multiple ways to engage learners' interest and motivation;

B. Provide Services to Under Performing Schools – deliver services from expert teachers through the Web to students;

C. Develop Learners' Research Capabilities;

D. Expanded Course Offerings; Simulations

E. Experience High Quality