

the promise and reality of ICT in learning

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the history of technologies

- radio
- television
- audio
- video
- computers
- Internet & WWW
- knowledge management systems

the promise of technology

- customised learning
- intelligent tutoring
- adaptive learning
- increased achievement
- easier learning
- teacher-free learning

what does research show?

- how do teachers use computers?
- what gains are achieved?
- under what conditions?

proven gains

- enhanced achievement
- enhanced retention
- quicker to learn
- enhanced motivation

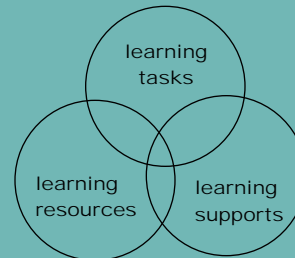
increased achievement

- primary 0.47 (Kulik, Kulik, & Bangert-Downs, 1985)
- secondary 0.36 (Bangert-Downs, Kulik & Kulik, 1985)
- tertiary 0.26 (Kulik & Kulik, 1986)
- adult learning 0.42 (Kulik, Kulik & Schwab, 1986)
- but... (Hattie, 1992)

instructional design

- creating learning opportunities
- choosing resources
- implementation strategies
- providing feedback mechanisms

learning designs



learning tasks

previous		contemporary
decontextualised	→	authentic
fragmented	→	global
sequenced	→	constructive
fixed	→	negotiable

learning resources

previous		contemporary
structured	→	open
linear	→	non-linear
sequenced	→	flexible
fixed	→	negotiable

learning supports

previous		contemporary
teacher as expert	→	teacher as coach
individual effort	→	collaborative effort
fragmented assessment	→	integrated assessment

effective learning

1. experience in knowledge construction
2. multiple perspectives
3. realistic and relevant contexts
4. ownership and voice in the learning
5. learning in social experience
6. multiple modes of representation
7. self-awareness of knowledge construction process

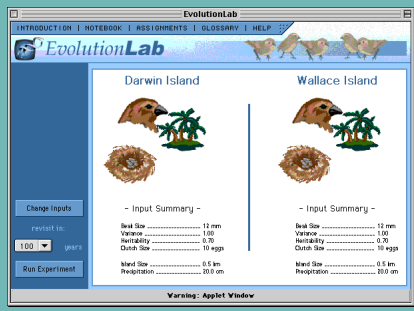
WWW opportunities

- information access
- interactive learning
- networked communication
- Web publishing

information access



genetics



global classroom



usage patterns

■ individualised instruction	93%
■ collaborative learning	12%
■ inquiry-based	28%
■ open-ended	10%
■ browsing	76%
■ information analysis	32%
■ problem-solving	5%
■ additional resources	21%
■ alternative evaluation	2%

approaches to Web learning

- design strategies
- development strategies
- delivery strategies

design strategies

- electronic conversion
- complementary activities
- re-engineering

electronic conversion



authentic settings



development strategies

- individual activities
- systemic design
- reusable tools and templates

WebCT



problem-based learning



delivery strategies

- HTML
- database-driven
- new options

HTML

Week 3 The Internet and Communication Networks

The Internet describes a network architecture and protocol which is currently taking the world by storm. It provides a means for anyone with an appropriate computer and network connection, for example a telephone, to communicate with others worldwide. The Internet is rapidly changing the way people go about their business and looks set to have an even bigger influence in the future. At the end of this week you should:

- know what the Internet is and how it works;
- what is needed to use the Internet;
- the different functions supported by the Internet; and
- likely future developments.

Focus Questions

Chapter 1 in Strategy 4 will start your reading for this week. This chapter provides an overview of the Internet and a discussion of its various functions. The WWW will be your target reference point for this week. There are countless outstanding information resources on this topic just a Web search away. To focus your reading this week, try to answer the questions below:

1. Describe the Internet in a way which would be understandable to a 12 year old.
2. Describe in your own words how the Internet works.
3. Describe how messages are passed between computers on the Internet.
4. What does the term 'bandwidth' describe?
5. Describe the following terms which are often met when reading about the Internet:
 - router;
 - backbone;
 - network; and
 - DHCP.
6. Describe how email works on the Internet.
7. What is File Transfer Protocol? What is it used for?
8. Explain the following Internet activities:

MEOW

Lesson ideas

Number	Topic	Measurement	Patterns	Statistics	Probability
Make 5	Box collection	3 eggs in a tray	One flap pattern?		
Drawaxes	Simple 4 space rangeman	Repeat handflap which one holds more?		3 things in a suitcase?	
CMN make 10	Hidden caterpillar	How many ways to make a 100?	Red and green rods	Close faces	
Colour a half	Addition boxes	How high?	Emerging patterns	What do you eat in a day?	
Make connections	Overlap	20 facts about me		Sports outfit	
Jump to 40	12 squares and partition?				
Built 19	Grids symmetry	Ten people coming to a party	Rectangle - stamp	Favourite object	
Sub-bites		5 cubes greatest surface area			

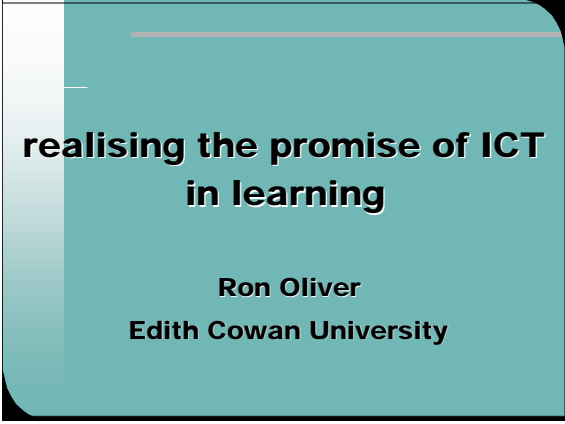
on-line learning

specified tasks

teacher centred	(a)	(b)	learner managed
	(c)	(d)	
	open-ended		

moving ahead

design approaches



realising the promise of ICT
in learning

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