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PDAs In and Out of the Classroom

Technology in Education

Sustaining innovation supporting existing pedagogy

- Overhead projectors
- PowerPoint slides

Disruptive innovation examples

- Internet
- PDAs

Sustaining innovation for students

Disruptive innovation for instructors



Cultural & Usage Shift



Educational Paradigm Shift

Campus centered
Instructor centric
Directed learning

Network centered
Student centric
Experiential
learning



Lao Tzu

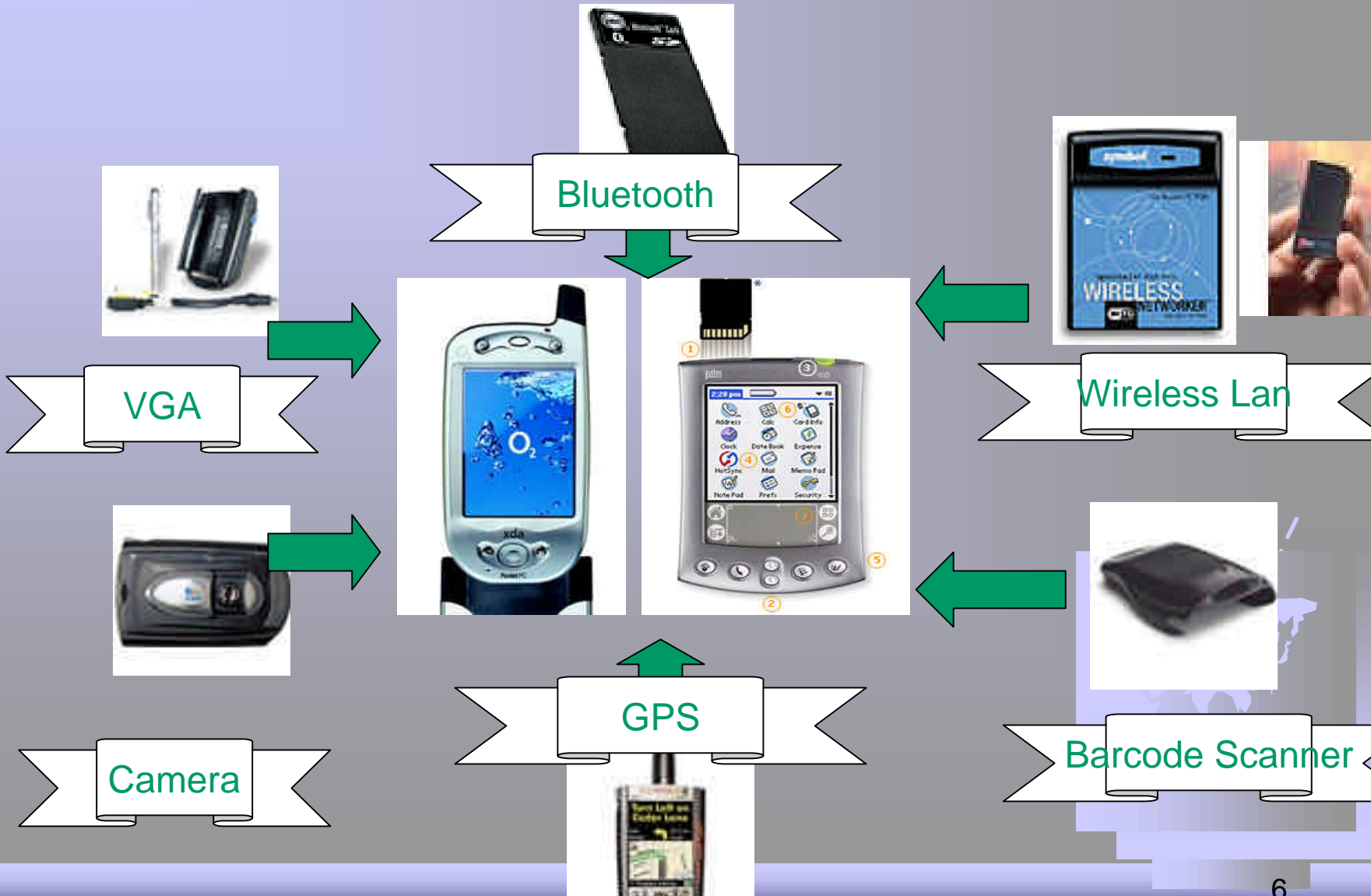
If you tell me,
I will listen.

If you show me,
I will see.

If you let me experience,
I will learn.



Unlimited Expansion



Portfolio of Mobile Applications

In the classroom



Out of the classroom



- On-the-spot learning materials / quizzes
- Taking attendance
- Providing classroom feedback
- Collaborative learning

- Interfacing with Blackboard
- Library catalogue search
- Edu-tainment
- Field trip support



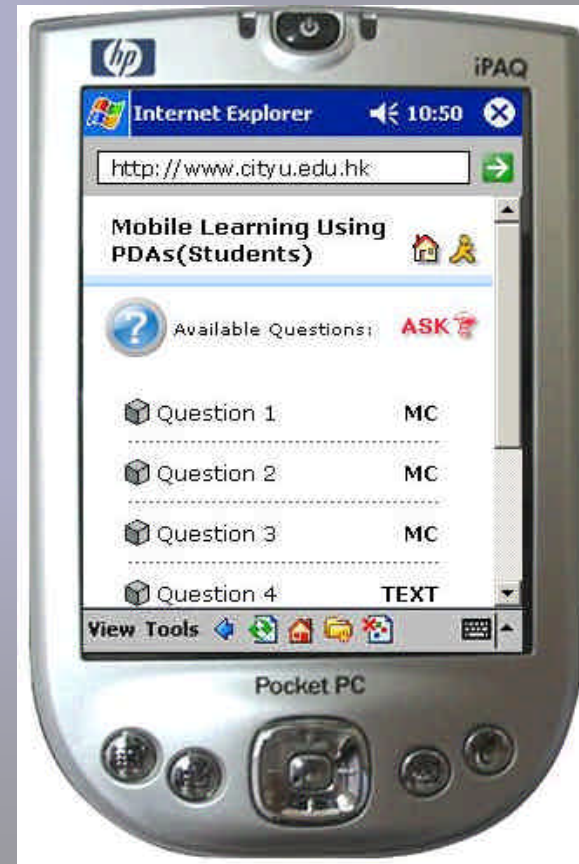
In-Class Query / Feedback

Question initiated by instructor

Key in response

Instant collection and feedback to instructor as well as students

Week-to-week performance tracking



PDA Demonstration

Step 1: PDA – Staff Setup

- Activities
- Questions
- Polling
- Voting

M-Learning Portal, Faculty of Business, City University of Hong Kong - Microsoft Internet Explorer

Address: <http://eportal.cityu.edu.hk/pda/pc/default.cfm>

Faculty of Business

M-Learning Portal

香港城市大學
City University
of Hong Kong

Home

- Our Objectives
- Events
- Virtual Help Desk
- Contact List
- Links

Login

Login ID:

Password:

Login

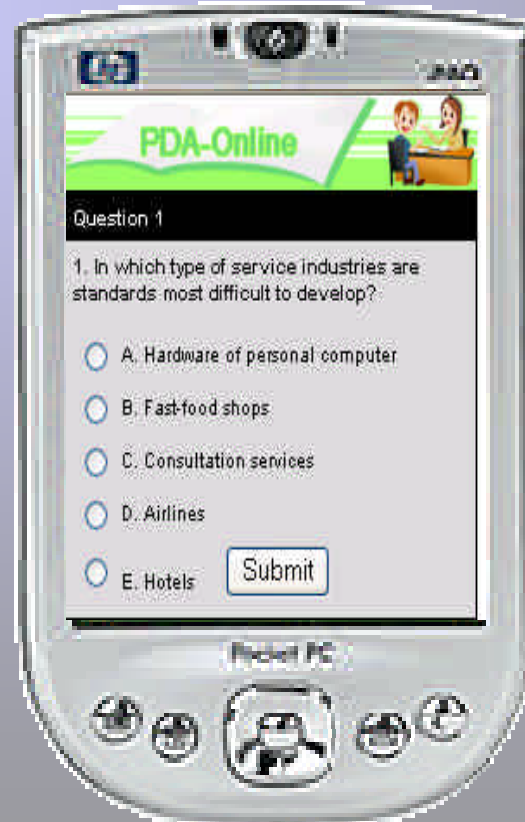
Welcome to M-Learning Website!

News

- This site is under construction. Please come back later..

You are visitor no: 46 since 18 August 2004 to our website.
Optimized for Internet Explorer 4.0+ or Netscape 4.5+ at a 1024X768 resolution.
Faculty of Business, City University of Hong Kong, 83 Tat Chee Avenue, Kowloon, Hong Kong

Step 2: Students in action



Step 3: Staff Evaluate Results

http://eportal.cityu.edu.hk/pda/q/results/ - Microsoft Internet Explorer

Address http://eportal.cityu.edu.hk/pda/q/results/

This page automatically refreshes in 5 seconds:

Results of PDA Questionnaire

Results Table

ID	Q1	DateTime	IP address
1740	3	2004-08-09 11:22:43	144.214.134.51
1741	5	2004-08-09 11:22:43	144.214.135.28
1742	5	2004-08-09 11:22:44	144.214.135.53
1743	1	2004-08-09 11:22:59	144.214.135.163
1744	3	2004-08-09 11:23:03	144.214.135.11
1745	5	2004-08-09 11:23:07	144.214.135.163
1746	3	2004-08-09 11:23:15	144.214.135.163
1747	5	2004-08-09 11:23:15	144.214.134.82
1748	5	2004-08-09 11:23:23	144.214.134.51
1749	5	2004-08-09 11:23:44	144.214.135.53
1750	2	2004-08-09 11:23:49	144.214.135.28
1751	3	2004-08-09 11:23:53	144.214.135.11
1752	3	2004-08-09 11:23:57	144.214.134.82
1753	5	2004-08-09 11:24:16	144.214.134.82
1754	1	2004-08-09 11:24:58	144.214.134.41
1755	1	2004-08-09 11:25:08	144.214.134.41
1756	4	2004-08-09 11:25:20	144.214.135.29
1757	1	2004-08-09 11:25:24	144.214.135.54
1758	5	2004-08-09 11:25:27	144.214.134.51
1759	1	2004-08-09 11:25:32	144.214.134.82
1760	4	2004-08-09 11:25:35	144.214.135.11
1761	2	2004-08-09 11:25:36	144.214.135.164
1762	2	2004-08-09 11:25:38	144.214.135.28
1763	2	2004-08-09 11:25:39	144.214.134.41
1764	1	2004-08-09 11:25:40	144.214.135.53
1765	5	2004-08-09 11:25:51	144.214.134.214

Results Bar Chart

Category	Count
A	11
B	7
C	20
D	5
E	13

Done Internet

E-Token System

‘Created’ by the student tutors

A fun approach to improve motivation and interest

- students get an allocation of tokens
- they ‘buy’ learning activities
- Receive awards for successful completion

Integrated into e-organization

- Simulated department store
- Multi-disciplinary focus





eToken



About eToken

eToken is a system jointly developed by the Faculty of Business and the Department of Information Systems to model real-life transactions over the Internet. In this simulated environment, users earn tokens by completing certain tasks and receive products in exchange for these tokens. [\[more...\]](#)

News	
The crossword template named 'E-Commerce - Lecture 11' has been added.	2005-11-24 4:08:33
The solution for the crossword template named 'DSS - Lecture 10' has been added.	2005-11-24 4:08:26
The crossword template named 'DSS - Lecture 10' has been added.	2005-11-24 4:08:26

Current Ranking			
	LO	Wan Sze Wendy	1600
	DENG	Pei Si	1200
	TONG	Wing Kai	1200

PDA Download

<p>e-Tips</p> Download E-Tips	<p>Crossword Puzzle</p> Download puzzle
<p>Exercise Soln</p>	<p>e-Lecture Note</p>
<p>Mobile Exercise</p>	<p>Building a PC</p>

Login to eToken with your eToken account

ID:

Password:

Top Three Finalist will be awarded with

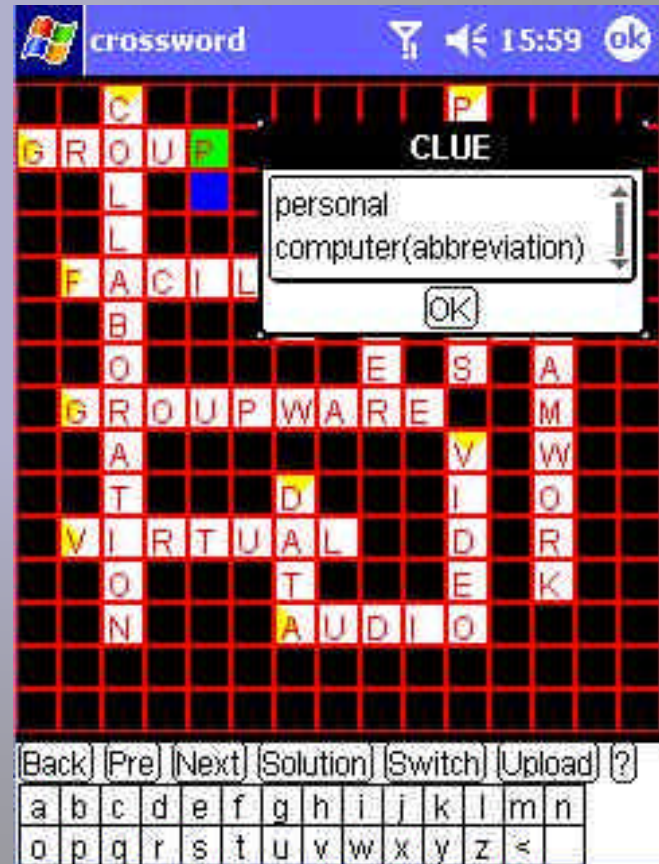
PARKnSHOP coupons

or

Book store coupons

Dynamic Crossword Puzzle

Varied Crossword
Puzzle topics
Layouts, hints and
solutions help
crossword
performers learn as
they perform
Monitoring and
tracking of use
Learning evaluation



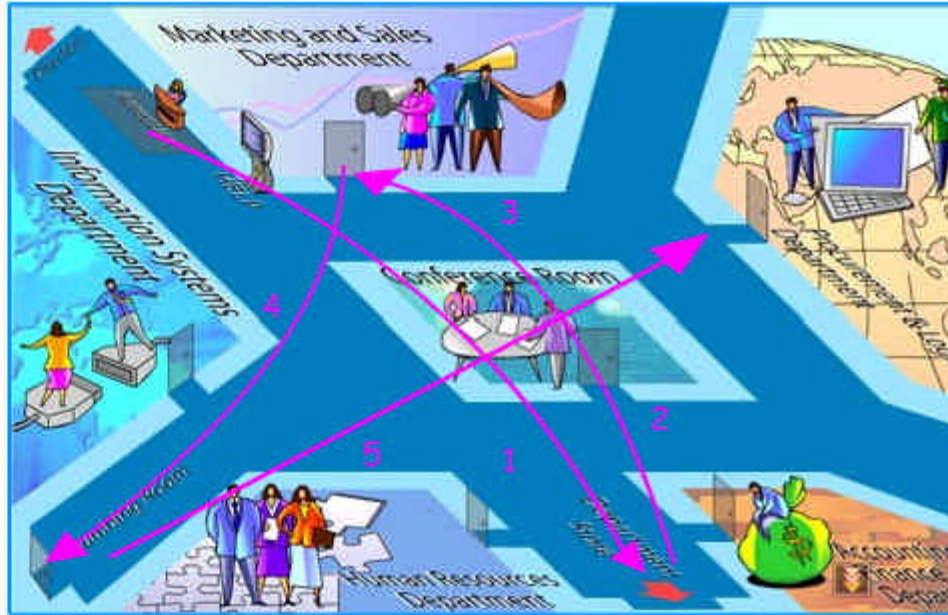
E-organization

E-Organization



RECEPTION

This track shall show you around via the many departments in our organization so you can get to know the process of procurement & logistics functions. Most of the control buttons are on the right bottom corner.



Procurement & Logistics

Enterprise System

HRO

IS exercises

Accounting exercises

Directory

An Example

FB2500 - Software ⏪ ⏩ ⏴ ⏵

An online bookstore, for example, is a web application that a user is required to access via a web browser.

```
graph TD; Browser[Browser] -- 1 --> WebServer[Web Server]; WebServer -- 2 --> DB[(DB)]; WebServer -- 3 --> Browser;
```

click anywhere

ems Depart

Build a PC

Make decisions associated with building or purchasing a computer

- Different user roles
- components based on performance vs. price

On-demand feedback

Graphics and task can be easily customized

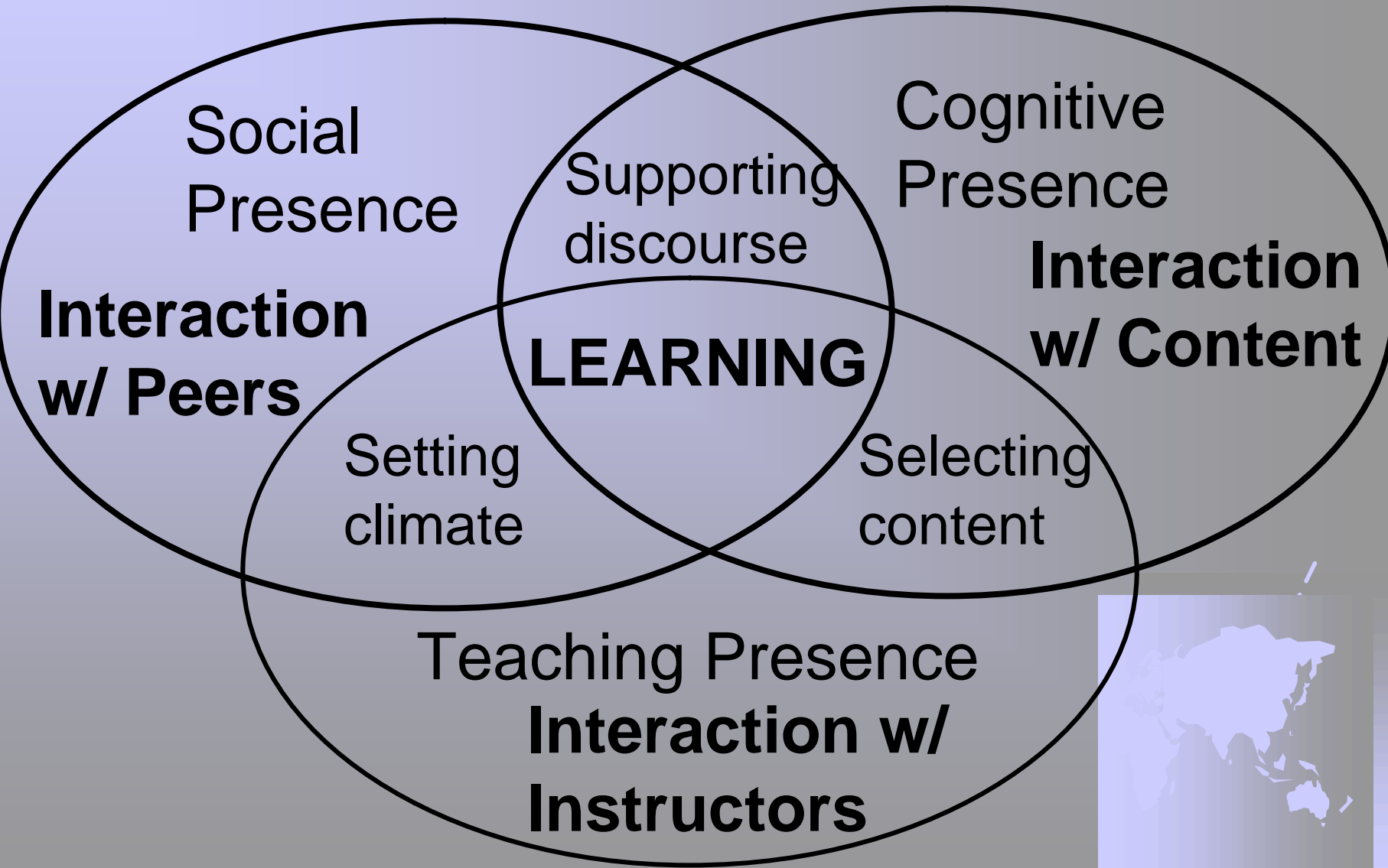


Collaborative virtual field trips with ability to capture photos

The screenshot shows a Microsoft Internet Explorer browser window displaying a web application titled "Itinerary". The browser's address bar shows the URL: `http://144.214.55.145:8010/flash/mils.swf?uid=6&gid=3`. The application interface includes a "World Map" section with a map of the world and a red dot in South America labeled "Title: Bush Animals". Below the map is an "Itinerary" list with items: "Historic City of Sucre", "Vatican City", and "Bush Animals". To the right, there is a "Budget" section with a green bar and the value "1507 Available", and a "Stars" section with a red bar and the value "20". Below these are two columns: "member" and "stars", with a table listing members and their star counts. A "Group Contribution" section shows a value of "1". On the far right, there is a "Loading Please Wait..." section with a grid of photos, including a hot air balloon, a group of people, a mountain, and a hot spring. The browser's taskbar at the bottom shows the Start button, various application icons, and the system clock displaying "4:03 PM".

member	stars
john	1
doug	0
darryl	0
mike	0
eyeow	0
Others	0
Group Contribution	
1	

Online Interactions



Initiation

High Profile Opportunities

Vendor Collaboration

Institutional Approval

Test Successes

- 120+ simultaneous user stress test
- Student acceptance
- Faculty / instructor buy-in
- Embedded into first year IS course
- Positive student perceptions



PDA Significantly Better (than w/o PDA)

I learnt from other students in class

I considered the ideas of other students

I compared my understanding to that of other students

I practiced what I learnt in the lecture

Satisfaction: “How would you describe the learning process”

Enjoyment: “How would you describe your mood”



PDA's in E-organization

Makes the course more interesting, enjoyable and fun

Somewhat useful for understanding and remembering

Better than nothing for motivation and increasing confidence

Questionable for changing learning behaviour

Not especially useful in stimulating students to explore new topics



The Rest of the Story

Lots of variation

What some like, others don't

Need to isolate population segments

Looking for more feedback from
instructors

eToken not particularly successful

- Not heavily used / Lack of time
- Confounded by technical difficulties

No “one size fits all”



Other Issues

Authoring Environments

Pedagogically-driven Application Portfolios

Learning Motivation (students and staff)

Instructor Training / Faculty Development

Infrastructure

Interface Standards

Learning Management System (LMS)

- Integration
- Extension



Still More Issues

Embedded vs. Non-embedded Use

Curriculum Revision

Policy Formation

“Haves” versus “Have-nots”

Constructive alignment (John Biggs)

Evaluation

Evolution of Pedagogy

Long-term implications



Conclusions

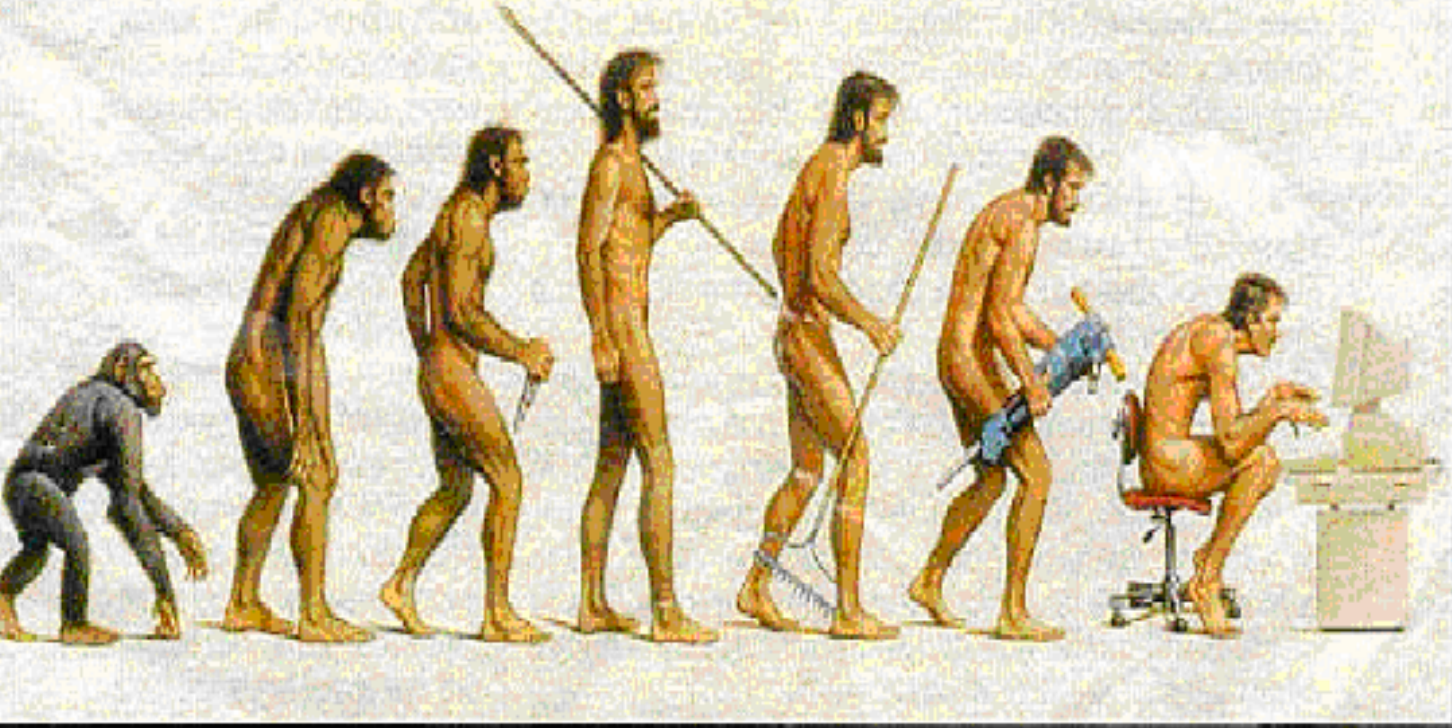
Over time, emphasis moves from individual to more systemic initiatives and, ultimately, policy consideration

Key consideration is how to keep faculty effectively engaged as technology changes

PDA use is a sustaining innovation to students but a disruptive innovation to many faculty and institutions

Need to provide special focus on working with instructors in the evolution of pedagogy





Think
Mobile

More than just a technology





The future is
challenging,
but bright!!