

Millennials and emerging technologies: Meeting instructional and learning needs with tomorrow's tools.

February 2007

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Seminar purpose

- Address teaching and learning challenges with emerging technologies
- Share information on instructional practices related to emerging technologies
- Share pedagogies for emerging technologies
 - What learning principles are embedded in technologies
- Institutional adoption of experimental, emerging technologies

5 Minute University: Making Learning Meaningful

Father Guido Sarducci

Scenarios

- Develop instructional scenarios within guidelines
- Identify teaching and learning challenges as they relate to students
- Post your scenarios and challenges to <http://tech-learn.wetpaint.com/> in your team wiki page

Teaching and learning challenges

- Read another teams scenario
- Post at least 1 additional teaching and learning challenge

Faculty and students today

- Single to multiple modalities
- Mono to stereo channels
- Part of the time to all of the time

ECAR UGrads & IT 2006: About the Survey

- Limited to ECAR institutions
- Freshmen & Seniors at 88 institutions (4-year & CCs)
- N: 28,274
- Focus groups & open-ended questions
- Findings are instructive/indicative, NOT conclusive
- Data is self-reported (student perceptions and impressions)

ECAR UGrads & IT 2006: Findings

- 2/3 of students reported that IT improved their learning (older, business, engineering)
- Most significant benefits: convenience, communication, control
 - except in IT intensive disciplines and 2-year institutions
- Students overestimate their ability to use IT and struggle with information literacy
- 98% own a computer
- 38% own laptop and desktop
- 85% prefer email to IM
- Average student spends 23 hours/week using technology
- Asked for required basic IT courses: Word, Excel

ECAR UGrads & IT 2006: Findings

- 56% want a moderate amount of IT in courses
- 70% do not bring laptop to class
- Innovators and early adopters prefer only a moderate use of IT
- Students found CMS features that relate to grade performance (gradebook, quizzes/tests) to be most useful
- Younger students have a lower preference for technology than do their older peers

Technologies that improved learning

1. Podcasts
2. ePortfolios
3. Instant messaging
4. Webcasts
5. Simulations
6. Blogs
7. Clickers
8. Discipline-specific IT
9. Social networking software
10. Spreadsheets
11. Presentations
12. Course web sites
13. Online quizzes
14. Email
15. Online discussions
16. Online gradebook
17. CMSs

Review scenario

- Take another look at your scenario and make any additions/change to the learner description based on what we've discussed

Technology teaching and learning continuum

- Continuum of technology related to pedagogical objectives
- Instructor skill required for tools related to learner skill development
- Student engagement levels

Faculty today

- Student expectations (not necessarily skill level) and changes in disciplines (engineering, business) has impacted faculty member practice
- Overview of faculty member characteristics
- Sources for further exploration

Determining faculty use of technology

- What do you want to know?
- Why do you want to know it?
- Where's the data?

A Bloom's Taxonomy Framework

Create

Evaluate

Analyze

Apply

Understand/Comprehend

Remember/Knowledge

Remember/Knowledge

Bloom's	Strategy
Retrieving, recognizing, and recalling relevant knowledge from long-term memory.	Collect existing data sets (annual review scores, teaching scores, etc.), surveys responses.

Comprehend/Understand

Bloom's	Strategy
Constructing meaning from oral, written, and graphic messages through interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining.	Plot knowledge on comparative continuum (e.g. institutional averages, NCES, etc.) such as School <u>Technology and Readiness (STaR) Chart</u>

Apply

Bloom's	Strategy
Carrying out or using a procedure through executing or implementing.	Create individual or categorical profiles that can be analyzed for patterns, perhaps through the use of electronic portfolios.

Analyze

Bloom's	Strategy
Breaking material into constituent parts, determining how the parts relate to one another.	Shadow instructors, examine teaching practices, interview students, and examine individual behaviors and practices. Analyze for patterns across individuals, programs, or other characteristics.

Evaluate

Bloom's	Strategy
Making judgments based on criteria and standards through checking and critiquing.	Determine appropriate intervention, support, and approaches for training, support, resources, incentives, and assessment of strategies.

Create

Bloom's	Strategy
Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing.	Develop new tactics to facilitate adoption of technologies.

Evaluate and Create

Designing and implementing support

- One-on-one training or mentoring, see [Iowa State University](#)
- Skills specific training
- Fellow programs that provided project or goal-based outcomes, see [ASU](#)
- Communities of practice, see [Education Commons](#)
- Self-directed learning, see [ICT and Their Role in Flexible Learning](#)
- Faculty and student research programs
- Self assessment, see [SPARK](#)

What is your plan?

- Consider your challenge scenario
- Discuss probable solutions
- Be prepared to share!
- Post your ideas to your team area at <http://teach-learn.wetpaint.com>

BREAK!

10 - 10:15 AM
15 minutes

Teaching styles and adoption

- Why is style important to adoption?
- Re-emergent interest stemming from Roger's Diffusion of Innovations

Expert

Functions as **knowledge expert** and **transmits information** to learner who become more competent under the instructor's tutelage.

Formal Authority

Focuses on **correct** and **appropriate procedures**, serves as **knowledge expert** who is determined to **provide necessary feedback** to learner within a **structured and standardized** environment.

Personal Modal

Focus is providing **personal examples** and **modeling appropriate and correct behavior.**

Facilitator

Teacher-learner interaction in a **probing** and **interactive** learning environment. Supports **learner's decisions** made in a **consultant role**.

Delegator

Desire for learner to **act autonomously** with as little input as necessary.

Adoption: C-BAM

<i>Stage of concern</i>	<i>Behaviors</i>
6. Refocusing	Finding how others are using it and from these strategies, devising new strategies to use it.
5. Collaboration	Intentionally seeking out and working with others to use it.
4. Consequence	Making changes in practice to increase the impact.
3. Management	Making changes to better manage it.
2. Personal	Making specific plans to use it.
1. Informational	Seeking more information about it.
0. Awareness	No use and no interest

Integrated technology adoption and diffusion

<i>Developmental Stage</i>	<i>Effective Strategies</i>
5. Teacher as Leader	Incentives for teaching, coaching, mentoring others; recognition of expertise through leadership opportunities.
4. Re-affirmer or Rejecter	Requires administrative support and recognition of achievements, such as incentives that are valued by instructors (money, time, support, free stuff) or venues for publicizing student achievement.
3. Co-learner	Best supported with professional development that focuses on instructional applications as relates to discipline and curricular needs; examination of best practices and exemplars; collegial sharing.
2. Adopter	Benefit from collegial, staff, and online technical supports; training that helps with solving technical problems.
1. Learner	Require time for learning, observation of best practices, ongoing learning opportunities, and focus on aligning new skills with curriculum and standards.

Adoption: LoTi

6. Refinement
5. Expansion
- 4.b Routine Integration
- 4.a Mechanical Integration
3. Infusion
2. Exploration
1. Awareness
0. Non-use

Refining your plan

- How can teaching style inform your plan?
- Can level of adoption assist you?
- Which model best fits your needs?
- Modify your plan in your team area at <http://tech-learn.wetpaint.com>

Emerging Technologies

- Focus on Web 2.0 applications
- Tools that bring together several applications and pedagogies

Tablet PCs and pedagogical applications

- Pedagogical advantages/applications
 - Large classes
 - Critical thinking
 - Skill development
 - Problem-based learning
 - Student interaction/engagement
- Collaborative software

DyKnow: <http://dyknow.com/>

Instructor Benefits

- Students engaged in learning
- Saving time and improving organization
- Web-based access to materials
- Extend the classroom into distance environments

Student Benefits

- More time applying concepts, less time copying notes
- Organization benefits with a single electronic notebook
- Eliminate paper usage/lost materials
- Immediate feedback from instructor on class work
- Interactive class activities and peer review
- Stay connected synchronously from a distance

Emerging technologies from...

- Professional organizations
 - EDUCAUSE Emerging Technologies and Practices
 - ASTD
 - IEEE
 - ALA
 - New Media Consortium
 - National Institute for Technology and Liberal Education

Top 15

- [Audioblogs](#)
- Blogs
- Clickers
- [Collaborative Editing/Writing](#)
- ePortfolios
- [IM-Type Tools](#)
- Learning Objects
- [Mashups](#)
- Podcasts
- RSS
- [Social Bookmarking](#)
- [Virtual Communities of Practice](#)
- [Virtual Learning Worlds](#)
- Webcams
- Wikis

Your plan & emerging technologies

- Identify emerging technologies listed or ones that you are exploring
- Discuss how an emerging technology may address the needs of the instructional scenario (use checklist)

- Go to

<http://www.mcli.dist.maricopa.edu/diaz/EducauseSW07.php>

Competition

- Each table has 2 minutes to explain why their plan will resolve the teaching and learning challenges presented in the scenario
- Vote on the best plan
- Winning team gets choice of goodies

Experimental to institutional adoption of emerging technologies

- Models for successful institutionalization of experimental learning technology initiatives
- TAP: Transformative Assessment Process

Podcasting resource

- Maricopa Community College District
- <http://drcoop.pbwiki.com/PodcastingTheoryPractice>

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