Technology in the Curriculum: The Role of Student Perceptions

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Overview

I. Why teach with technology?
   Good (and bad... and ugly!) motivations

II. Being literate in the 21st Century
    Information literacy, digital literacy

III. Promoting information literacy / digital literacy through curricular design
    Standard approaches
    Incorporating student perceptions
    Using "just right" tools / pedagogies
Heads up! Participation is required

Use a mobile device
to text or submit your responses:

http://pollev.com/qcctl

text codes to: 37607
Tweet codes to: @poll
e- is for engagement

Technology improves teaching and learning:*

Instructor's attention is directed toward creating environments that enhance learning

- These environments tend to be student-centered
- Student’s attention is on learning itself
- Learning experience is extended beyond the classroom: more time on task, more reflective learning, deeper retention of content

*cf. traditional content-focused learning environments
Technology can make a good course better

Course design elements that lead to better learning:

- Encouraging students to become comfortable with ambiguity as a path to learning
- Allowing students to err and self-correct (and get feedback about when errors have happened)
- Instigating "going meta"
- Instantiating incrementality and triggering practice

Measures: Engagement, "flow"

Technology does these things very well
(Gee; Bransford; Reeves & Read; many others)
Teaching with technology is **NOT** about...

- orienting students to using branded products
e.g., Microsoft's Digital Literacy curriculum

- integrating tools unintentionally or without learning-outcome-based motivation
  "Colleges will use technology to enrich courses and improve teaching" (evidence: "Reports of courses with a significant technology component...")

Being literate in the 21st century

**Information Literacy** (AAC&U)

The ability to know when there is a need for information, to be able to identify, locate, evaluate, and effectively and responsibly use and share that information for the problem at hand.

**Digital Literacy** (ALA Digital Literacy Task force)
http://connect.ala.org/files/94226/what%20is%20digilit%20(2).pdf

The ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills.
Information literate students can...

- Determine the extent of information needed
- Access needed information
- Evaluate information and its sources critically
- Use information effectively for a specific purpose
- Access and use information ethically and legally

Digital literacy
The digitally literate student...

- Possesses the variety of skills – technical and cognitive – required to find, understand, evaluate, create, and communicate digital information in a wide variety of formats;
- Is able to use diverse technologies appropriately and effectively to retrieve information, interpret results, and judge the quality of that information;
- Understands the relationship between technology, life-long learning, personal privacy, and stewardship of information;
- Uses these skills and the appropriate technology to communicate and collaborate with peers, colleagues, family, and on occasion, the general public; and
- Uses these skills to actively participate in civic society and contribute to a vibrant, informed, and engaged community.
21st century literacies

Encompass the **challenges** of information literacy and the **affordances** of new and evolving technologies.

Digitally literate students maximize these tools to better understand **content in the disciplines**, and ultimately to better perform in the "real world".
From theory to practice...

How do you go from a belief that tech needs to be integrated into your course to making it happen?

Three examples:

- **Intro to Psycholinguistics**: intentional but not intrinsic
- **Intro to Literary Studies**: intrinsic but not central focus
- **Modern Learning Technologies**: central focus

What about tech and gen ed?
Where’s technology in the CUNY Core?

Limited to one or two courses...

Where’s technology in the CUNY Core?

- Information literacy is part of the learning outcomes in courses that focus on writing instruction (English Composition).
- Technology is covered in science survey courses, optionally (many students will take science surveys in other disciplines).
- There is mention of appropriate technologies for research in Creative Expression (fine arts) courses.

No. of instances in 1622 word corpus
("Common Core Structure")

Digital literacy: optional
When designing curriculum...

... what should be taken into consideration?

- Discipline-specific content-knowledge
- What students should know when they are done
- Available tools
- Faculty expertise in content, pedagogy, technology
- Student content knowledge
- Student perceptions of technology

1. perceptions about tech in courses
2. perceptions about faculty proficiency
3. perceptions of tech tool value
Student tech: access and use
# Access to computers

<table>
<thead>
<tr>
<th></th>
<th>2010 (N=1705)</th>
<th>2011 (N=695)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Either laptop or desktop</td>
<td>99%</td>
<td>99%</td>
</tr>
<tr>
<td>Both laptop and desktop</td>
<td>57%</td>
<td>70%</td>
</tr>
<tr>
<td>If access to desktop, primary user...</td>
<td>67%</td>
<td></td>
</tr>
<tr>
<td>If access to laptop, primary user...</td>
<td>85%</td>
<td></td>
</tr>
<tr>
<td>Laptop &lt; 1 year old</td>
<td>27%</td>
<td>24%</td>
</tr>
<tr>
<td>&lt; 2 years old</td>
<td>60%</td>
<td>67%</td>
</tr>
<tr>
<td>&lt; 5 years old</td>
<td>82%</td>
<td>95%</td>
</tr>
</tbody>
</table>

98% in ECAR 2010
“there are literally hundreds of devices that could satisfy this category. cameras, a digital watch, and a guitar tuner all qualify as electronic and mobile”
Access to the Internet

85% use social networking sites, 42% for 1-7 hours per week
47% report playing computer games, 40% for 1-7 hours per week

On Campus

Elsewhere
Access to the Internet from home

Number of respondents, 2011 sample (N=695)

- No connection: 139
- Dial-up modem: 278
- Cable modem: 417
- DSL: 556
- FIOS: 695
- Mobile broadband: 0
- Wireless: 0
- Not sure: 0

91%
Student tech: for academic purposes?
Tool use

Number of respondents, 2011 sample (N=695)

- Wordprocessing
- Slideware
- Spreadsheets
- Graphics
- Database
- Bibliography
- Video
- Audio
- Statistics

Legend:
- Once per year
- Once per semester
- Monthly
- Weekly
- Several times per week
- Daily
Social networking

Number of respondents, 2010 sample (N=1,705)

Don't use: ~15%

Facebook: 1,250
MySpace: 500
LinkedIn: 250
Other service: 50

Stay in touch with friends: 1,500
Media sharing: 1,250
Communicate with classmates: 1,000 (~49%)
Events: 750
Learn about people not known: 500
Opinion sharing: 250
Special interest groups: 250
Professional networking: 125
Make new friends: 75
Get information for class: 50
Communicate with instructors: 25 (~7%)
Do writing assignments for class: 25
Dating: 25
Advertisements: 25
Other purpose: 25

Activities loosely related to academics
Perceptions of and attitude towards technology
General attitudes toward tech

2010 data: N=1,705 for QC, N=36,947 for ECAR

Attitude towards new technologies
General attitudes toward tech

2010 data: N=1,705 for QC, N=36,947 for ECAR

Attitude towards new technologies

Preference for amount of technology used in courses
Using Internet-based tools for a class... was convenient

86% Blackboard
71% Library Resources
38% Social Media
36% Blogs, Wikis
17% ePortfolios

% of 2011 sample (N=695) reporting use of these tools
Using Internet-based tools for a class...

improved communication
with prof

with peers
Using Internet-based tools for a class...

- improved understanding of content
- helped improve quality of work
Perceptions of faculty
Ratings of instructors' tech prowess

Number of respondents, 2011 sample (N=695)

- Use tech effectively in your courses
- Require tech that enhances learning of course material
- Provide adequate training for tech used in course
- Have adequate tech skills for course

Legend:
- Red: None
- Cross: Almost none
- Gray: About half
- Green: Most
- Almost all
Back to curricular design...
Engaging students

Lots of ways!
Some recent experiments:

● Poll Everywhere for test review

● Twitter for large lecture commentary

● Google Docs for in-class collaborative lesson plan review plus presentation
These past two weeks I have been noticing the technology around the classroom I student teach for. I noticed that my cooperating teacher doesn’t really use the smart board that much, and she has admitted that she really isn’t too good with it. For the past couple of weeks I have been trying to figure it out myself and I feel like there is so much that it has to offer. I think if the smart boards are placed in schools, they should have a workshop on how to use it and go over its advantages. This will help many teachers when they are trying to make up lessons that can involve the smart board.

At the last technology class meeting we went over how to evaluate a good technology integrated lesson plan. This was such a great pointer to me because it made me realize the useful benefits of having technology in your lesson. There should always be a rationale for using technology in a lesson. If there is not one educational and beneficial reason technology is useful in the lesson then it should not be included. Besides that you should always state how technology gives advantage to the topic or skill. The teacher should always state if it will be used individually or in a group structure. The lesson plan should state how this will lead the students to success. The most important thing is to make sure that students know how to use the technology correctly. So, in the lesson plan it should state whether the teacher prepared them before or during the lesson on how to use it.
Aha!

I took my ATS-W exam this past Saturday morning. I was very nervous although some of my fellow classmates have told me not to worry since they already took it and it wasn't too bad. Also a lot of my friends who happen to be teachers told me it's a lot of common sense questions and theoretical questions about teaching which I should be able to pass with a breeze. However I am a Nervous Nelly and it's part of my nature to always worry and be nervous before an exam. I didn't really study because I didn't know how to study but look over some sample questions from the site. There were 80 multiple choice questions and I told myself not to stay more than 3-4 minutes on a question. If it's taking longer to answer it I should put a star on it and go back or go with my first instinct. After I finished all 80 questions I was exhausted and not looking forward to the essay part of the exam. I took a deep breath and open up the essay section. I had a huge smile form on my face and I almost began to laugh out loud! I let out a big sigh of relief and said, "AHA!" in my mind. I was so happy to see the essay questions. It pertained to technology and how we would integrate and implement it into a lesson plan. I thought of our technology course and tech-pack right away! I took a minute to gather my thoughts and began writing. I am so grateful for our class and our previous tech-pack assignment because I finished my exam quickly and confidently. I had so much time left over to check over my work. I'm pretty sure I aced the essay portion of the exam thanks to our class! :)
Meaningful integration of tech

Backwards design:

- Begin with learning outcomes:
  - what should learners know and be able to do?
- Acceptable evidence of learning -
  - how will students be assessed?
- The plan
  - experiences, instruction, technology
    (what's the value of the tool?)

(Wiggins & McTighe)
I. Why teach with technology?
   Technology is engaging

II. Being literate in the 21st Century
   Frameworks for developing learning outcomes

III. Promoting information/digital literacy through curricular design
   Intentional, intrinsic, or central to a course
   Student perceptions can be very informative
   Finding the "just right" tools / pedagogies (experiment!)