

## Cross-Curricular Web 2.0 Applications for Technology Integration

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## Overview

- ECI 511, technology integration course for in-service teachers working on their M.Ed. in Instructional Technology
- taught from a distance, fall/summer, five sections since fall 2005 (n=75)
- leverages free Web 2.0 tools for student communication and projects

## Defining Web 2.0

- Web 1.0, first-generation Web, content designed and delivered by a few individuals and agencies (top-down)
- Web 2.0, second-generation Web, also called the "read-write" Web, content co-designed and delivered by multiple users (bottom-up), using tools such as blogs, wikis, and podcasts

## Rationale for Web 2.0

- "tools" have always been a big part of the course-- productivity, multimedia
- low cost/no cost means tools can be put to use in most schools, no need to buy software
- collaborative aspect of web 2.0 tools supports this distance education course

## Blog Assignment

- teachers post six reflective blog entries on six technologies they would like to integrate with their own classes
- entries include a description of the technology, best practices or research findings for the technology, and a discussion of how the teacher would apply the technology in their own class

## Blog Assignment

- assignment supported by university's *WolfBlogs* tool, other free services available (blogger.com, classblogmeister.com)
- read all teacher blogs here...  
<http://blogs.lib.ncsu.edu/page/eci511>



## Blog Assignment

- 79% of teachers who created blogs (n=29) agreed or strongly agreed it was a useful assignment
- teachers recommended, "In lieu of doing six blogs, ask students to read their classmates' blogs and post commentaries, which would lead to further discussions and the sharing of possible applications of the course material."

## Blog Integrations

- english/language arts, student writing, book reflections
- social studies, current and historical event reflections, taking historical perspectives
- science, guided reflecting on long-term inquiry projects (e.g., hypotheses, changes in understanding, new questions that emerge)

## Google Docs & Spreadsheets Assignment



- one session of the course focuses on "tool software" (word processing, databases, spreadsheets)
- data sharing projects are one strategy for integrating tool software (e.g., globe.gov)
- in class, students contribute data to two shared google spreadsheets (tv and food) and discuss applications of the collected data

## Google Docs & Spreadsheets Assignment

- <http://docs.google.com/>
- multiple users co-edit the same shared document
- spreadsheets have a synchronous chat feature to discuss numbers with others in real time

Students	Record	Party	Eggs	Tons	Weight	Cost	Adults
1. Baker							
2. Carter	2	2	4	2			2
3. Davidson							
4. Evans							
5. Gibson							
6. Johnson							
7. Kim							
8. Lee							
9. Miller							
10. Nelson							
11. Parker							
12. Roberts							
13. Taylor							
14. Walker							
15. Young							
16. Adams							
17. Baker							
18. Carter							
19. Davidson							
20. Evans							
21. Gibson							
22. Johnson							
23. Kim							
24. Lee							
25. Miller							
26. Nelson							
27. Parker							
28. Roberts							
29. Taylor							
30. Walker							
31. Young							
32. Adams							
33. Baker							
34. Carter							
35. Davidson							
36. Evans							
37. Gibson							
38. Johnson							
39. Kim							
40. Lee							
41. Miller							
42. Nelson							
43. Parker							
44. Roberts							
45. Taylor							
46. Walker							
47. Young							
48. Adams							
49. Baker							
50. Carter							
51. Davidson							
52. Evans							
53. Gibson							
54. Johnson							
55. Kim							
56. Lee							
57. Miller							
58. Nelson							
59. Parker							
60. Roberts							
61. Taylor							
62. Walker							
63. Young							
64. Adams							
65. Baker							
66. Carter							
67. Davidson							
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69. Gibson							
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75. Parker							
76. Roberts							
77. Taylor							
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83. Davidson							
84. Evans							
85. Gibson							
86. Johnson							
87. Kim							
88. Lee							
89. Miller							
90. Nelson							
91. Parker							
92. Roberts							
93. Taylor							
94. Walker							
95. Young							
96. Adams							
97. Baker							
98. Carter							
99. Davidson							
100. Evans							

## Google Docs & Spreadsheets Assignment

- 85% of teachers who participated in a Google Spreadsheets data sharing activity agreed or strongly agreed it was a useful task (n=13)
- for 85% of teachers, this was their first exposure to Google Docs/Spreadsheets
- 62% of teachers indicated they planned to use the tool in some capacity with their own students

## Google Docs & Spreadsheets Integrations

- english/language arts, writing in Google Docs
- math, distribute word problems in Google Docs for small groups to answer, good for "interpretive exercises" that include both visual materials and text
- science, distribute lab report templates in Google Docs
- use Google Docs' built-in commenting feature to provide feedback on student work
- science and social studies, data sharing projects in Google Spreadsheets

### Multimedia Presentation Assignment

- additional tool software discussed in the class are multimedia presentation tools
- teachers learn about "constructionism" where students learn by creating presentations to teach others some class-related concept
- in class, teachers create a presentation to teach their classmates about some technology integration topic (e.g., geocaching, classroom response systems)

### Multimedia Presentation Assignment

- teachers can choose any online presentation tool that creates a shareable URL
- task is relevant for teachers working on a master's degree to become Instructional Technology Specialists
- teachers become familiar with a host of tools they can use to create online tutorials or professional development for the teachers or schools they will support

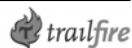
### Multimedia Presentation Assignment

- view all teacher presentations here... <http://eci511.weebly.com>
- in the end, teachers learn about a valuable educational strategy (constructionism), some aspect of technology integration (their content), and several web 2.0 tools they can use to teach/train others
- 92% of teachers agreed or strongly agreed this was a useful assignment (n=13)

### Multimedia Presentation Integrations

- students can create multimedia presentations for any subject area
- Weebly, FreeWebs, and Google Pages are online web page editors
- Jaycut, JumpCut, MuveeMix, and Viddler are online video editors
- Scrapblog, SlideRoll, and BubbleShare are online presentation editors similar to PowerPoint (combine stills, graphics, text)

### Trailfire Assignment



- strategies for managing the depth and breadth of internet resources are discussed in the course (e.g., webquests, RSS aggregators, mash-ups)
- one tool that helps teachers (or students) grab and manage a set of web resources is called trailfire
- trailfire allows a user to string together a "trail" of web pages and annotate the pages for the people who will be "walking" their trail

### Trailfire Assignment

- in class, teachers must select ten web pages and combine them into a trail to teach some audience about some topic
- view all the teachers' trails here... <http://trailfire.com/kmoliver/trailview/43792>
- the best trails don't just present the pages, but include questions for students in the annotation box, prompting them to do or find something on the pages... <http://trailfire.com/gardnerpk/trails/39400>

### Trailfire Assignment

- 100% of teachers agreed or strongly agreed the Trailfire assignment was useful (n=13)
- 100% of teachers had never used Trailfire prior to the course
- 69% of teachers indicated they would use Trailfire with their own students in some capacity

### Trailfire Integrations

- looking at the range of subject areas across the teachers' trails, it's evident this tool can be integrated in most subject areas
- consider tasking students with creating and annotating their own trails, or creating trails with questions for their peers
- in social studies, students could use the tool to collect information in digital libraries supportive of a theory they are trying to prove (e.g., racism on the U.S. Supreme Court)

### del.icio.us Assignment



- another way to manage the glut of online information is to utilize social bookmarking tools to collect and tag the best information in specified categories (e.g., digg, furl, del.icio.us)
- social bookmarking tools allow users to save and tag bookmarks, and share their marks with other users...  
<http://del.icio.us/kmoliver/>

### del.icio.us Assignment

- in class, teachers must save and tag a minimum of 40 bookmarks pertaining to tools or resources they've discovered during the semester
- they must tag every resource with the tag 'eci511\_integration' in addition to their own tags, allowing anyone to access the complete list of integration resources...  
[http://del.icio.us/tag/eci511\\_integration](http://del.icio.us/tag/eci511_integration)

### del.icio.us Assignment

- relevant assignment for future Instructional Technology Specialists who could maintain lists of resources for different subject area teachers in their school or district
- the "network" feature could also be used by all the subject area teachers in a school to easily view resources saved by their peers

### del.icio.us Assignment

- 100% of teachers (n=13) agreed or strongly agreed the del.icio.us assignment was useful
- 92% of teachers had not been exposed to del.icio.us before this course
- 77% of teachers indicated they would use del.icio.us with their students in some capacity

## Cmap Assignment



- Cmap Tools is a freeware concept mapping program you can download and use on a desktop computer (cmap.ihmc.us)
- it can be classified among web 2.0 tools, since it allows users at different sites to co-edit concept maps stored on servers (or not)
- the program has built-in collaboration features, including chat in support of real-time editing, and discussion boards that can be attached to the map space

## Cmap Assignment

- in class, one goal is for teachers studying to become Instructional Technology Specialists to practice decision making skills needed on the job
- Cmap is the tool used to support decision making, with teachers working in teams of three to structure assigned maps, then make a decision based on the content in their map
- in one map, teachers must compare different hardware systems (e.g., laptops, handhelds, classroom response systems), and then select the best system for integration

## Cmap Assignment

- 90% of teachers agreed or strongly agreed that Cmap was a useful assignment (n=45)
- many teachers indicated they would use Cmaps with their own students...
- "The Cmap activity was immensely useful because it armed us with at least one strategy that we could immediately use in our classrooms."
- "I loved them! We will be doing these in my class!"

## Cmap Integrations

- Cmap can be used in most subject areas for students to map identified relationships:
  - science, causes of pollution, erosion, etc.
  - social studies, causes of wars, poverty, etc.
  - economics, causes of inflation
- in english/language arts, Cmap can be used in support of pre-writing activities, story planning/mapping

## Cmap Integrations



## Web 2.0 Considerations

- public information and the Family Education Rights and Privacy Act (FERPA)
- be aware of copyright restrictions when student projects are posted online
- to beta or not to beta?
- log-in required, will your students need their own email accounts or not?

## A Short List of Free Web 2.0 Applications with Educational Potential

Application	Type	Link	Suggested Subject Area Tie-In's
5min lifeopedia	share-a-video-tutorial	<a href="http://www.5min.com/">http://www.5min.com/</a>	vocational education
atlas	create and embed-a-map	<a href="http://fmatlas.com/">http://fmatlas.com/</a>	geography, social studies
blogmeister	blog editor for education	<a href="http://classblogmeister.com/">http://classblogmeister.com/</a>	english, language arts, others
bubbl	mind mapping, flowcharts	<a href="http://bubbl.us/">http://bubbl.us/</a>	science, business education
bubbleply	markup posted video	<a href="http://www.bubbleply.com/">http://www.bubbleply.com/</a>	social studies, others
cmap	collaborative concept mapping	<a href="http://cmap.ihmc.us/">http://cmap.ihmc.us/</a>	science, others
del.icio.us	social bookmarking	<a href="http://del.icio.us/">http://del.icio.us/</a>	any subject
everytrail	create and embed-a-map	<a href="http://www.everytrail.com/">http://www.everytrail.com/</a>	geography, social studies
flickr	share/markup photos	<a href="http://www.flickr.com/photos/ha112/234233755/">http://www.flickr.com/photos/ha112/234233755/</a>	art
freewebs	web page editor	<a href="http://freewebs.com/">http://freewebs.com/</a>	any subject
geni	genealogical tracker	<a href="http://www.geni.com/">http://www.geni.com/</a>	english, language arts, social studies
gliffy	flowcharts, floorplans	<a href="http://gliffy.com/">http://gliffy.com/</a>	business/vocational education
google docs	shared docs and spreadsheets	<a href="http://docs.google.com/">http://docs.google.com/</a>	any subject
instacalc	online shared calculators	<a href="http://instacalc.com/">http://instacalc.com/</a>	mathematics
jaycut	online video editor	<a href="http://jaycut.com/">http://jaycut.com/</a>	any subject
jumpcut	online video editor	<a href="http://www.jumpcut.com/">http://www.jumpcut.com/</a>	any subject
letterpop	desktop publishing, templates	<a href="http://letterpop.com/">http://letterpop.com/</a>	business education, english/LA
my stickies	web page markup/annotation	<a href="http://www.mystickies.com/home">http://www.mystickies.com/home</a>	foreign language, social studies
page creator	web page editor	<a href="http://pages.google.com/">http://pages.google.com/</a>	any subject
pbwiki	wiki editor	<a href="http://pbwiki.com/">http://pbwiki.com/</a>	english, language arts, others
lulu	publish/sell kids' books	<a href="http://www.lulu.com/">http://www.lulu.com/</a>	art, english, language arts
mindmeister	mind mapping	<a href="http://www.mindmeister.com/">http://www.mindmeister.com/</a>	science, others
mindomo	mind mapping	<a href="http://www.mindomo.com/">http://www.mindomo.com/</a>	science, others
moneytrackin'	accounting, budgets	<a href="http://www.moneytrackin.com/">http://www.moneytrackin.com/</a>	business education, accounting
pedometer	measure distances	<a href="http://www.gmap-pedometer.com/">http://www.gmap-pedometer.com/</a>	physical education
peer trainer	social exercise groups	<a href="http://peertrainer.com/">http://peertrainer.com/</a>	physical education
planimeter	measure area on maps	<a href="http://www.acme.com/planimeter/">http://www.acme.com/planimeter/</a>	mathematics, geography
plotbot	collaborative screenwriting	<a href="http://www.plotbot.com/">http://www.plotbot.com/</a>	english, language arts
question form	create and embed-a-survey	<a href="http://questionform.com/">http://questionform.com/</a>	business education, marketing
quizlet	quiz editor, flashcards	<a href="http://quizlet.com/">http://quizlet.com/</a>	foreign language, language arts
scrapblog	online scrapbook editor	<a href="http://scrapblog.com/">http://scrapblog.com/</a>	any subject
shelfari	collaborative book groups	<a href="http://www.shelfari.com/">http://www.shelfari.com/</a>	media center, english, language arts
slideroll	create presentation from stills	<a href="http://www.slideroll.com/">http://www.slideroll.com/</a>	any subject
slideshare	shared powerpoint	<a href="http://www.slideshare.net/">http://www.slideshare.net/</a>	any subject
story of my life	genealogical tracker	<a href="http://www.storyofmylife.com/">http://www.storyofmylife.com/</a>	english, language arts, social studies
toondoo	cartoon editor	<a href="http://www.toondoo.com/Home.do">http://www.toondoo.com/Home.do</a>	art, language arts
viddler	markup posted video	<a href="http://www.viddler.com/">http://www.viddler.com/</a>	social studies, others
voicethread	annotate video/stills	<a href="http://voicethread.com/">http://voicethread.com/</a>	social studies
website polls	create and embed-a-poll	<a href="http://www.free-website-polls.com/">http://www.free-website-polls.com/</a>	mathematics, social studies
weebly	web page editor	<a href="http://www.weebly.com/">http://www.weebly.com/</a>	any subject
writewith	online word processor	<a href="http://www.writewith.com/">http://www.writewith.com/</a>	english, language arts
writemaps	web site map planner	<a href="http://www.writemaps.com/">http://www.writemaps.com/</a>	technology education
xtimeline	timeline editor	<a href="http://xtimeline.com/index.aspx">http://xtimeline.com/index.aspx</a>	social studies, science
your gmap	create and embed-a-map	<a href="http://www.yourgmap.com/">http://www.yourgmap.com/</a>	geography, social studies
zlio	start an online shop	<a href="http://zlio.com/">http://zlio.com/</a>	business education, marketing

for additional web 2.0 tools, visit these directories...

<http://itredux.com/office-20/database/>

<http://www.go2web20.net/>

*"Cross-Curricular Web 2.0 Applications for Technology Integration"*

*Kevin Oliver, NC State University, 2007 North Carolina Educational Technology Conference*