


The “Classroom Flip”

A Model for
Pedagogically Effective
Use of Instructional Technologies

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Introduction

- New technological resources available . . .
- . . . but it's NOT about the technology
- My Quest:
 - How can instructional technologies (or Course Management System) be used to affect teaching & learning?
 - Do “distance learning” technologies have any effective uses in enhancing face to face classes?



Goals for Session

- Identify Your Instructional Needs
- Define “Pedagogically Effective”
- Introduce the “Flip” Model
- Discuss Application
- Provide Examples
- Go where **you** want to go!



If I could fix one thing . . .

- Students are unprepared for class
- How do I get my students to spend enough time in the class material?
- How do I get them to read the text?
- How do I help them apply the content?
- If I use active learning strategies, how do I get in all the content?

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Pedagogy to Practice

- Needs to be a relationship between

Your Instructional Need

↓


Selection of an appropriate Instructional Strategy

↓

Use of IT or CMS to support the strategy

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“Pedagogically Effective”



FACULTY INVENTORY

PRINCIPLES FOR GOOD PRACTICE IN UNDERGRADUATE EDUCATION

Chickering, A. W. & Gamson, Z. F. (1987). Seven Principles for Good Practice in Undergraduate Education. *AAHE Bulletin*, 39 (7), 3-7.

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Seven Principles

- Encourage student-faculty contact
- Encourage cooperation among students
- Encourage active learning
- Give prompt feedback


Chickering, A. W. & Gamson, Z. F. (1987). Seven Principles for Good Practice in Undergraduate Education. *AAHE Bulletin*, 39 (7), 3-7.

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Seven Principles


- Emphasize time on task
- Communicate high expectations
- Respect diverse talents and ways of learning

Chickering, A. W. & Gamson, Z. F. (1987). Seven Principles for Good Practice in Undergraduate Education. *AAHE Bulletin*, 39 (7), 3-7.




What I Wanted to Fix

- Find an approach to move from “stage” to “side”
- Reduce time spent on lecturing
- Open up class time for active learning




What I Wanted to Fix

- Focus more on understanding and application than on recall . . .
- . . . while not sacrificing presentation of the factual base
- Provide students with more control over their own learning

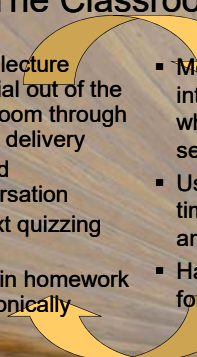


What I Wanted to Fix

- Give students a greater sense of responsibility for their own learning
- Provide students with more opportunities to learn from their peers
- **Key: Use IT or CMS in pedagogically effective ways**




The Classroom Flip



- Move lecture material out of the classroom through online delivery
- Extend conversation
- Do text quizzing online
- Hand in homework electronically
- Move “homework” into the classroom where faculty can serve as guide
- Use opened up time for application and practice
- Have more time for active learning

Other Support

- Concept first presented April 2000 (Baker, 2000)
- The “Inverted Classroom” (Lage, Platt & Treglia, 2000)
- “An End to Student Segregation: No More Separation Between Distance Learning and Regular Courses” (Tuoff, 1999).



Pedagogy to Practice

- Needs to be a relationship between

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    graph TD
      A[Your Instructional Need] --> B[Selection of an appropriate Instructional Strategy]
      B --> C[Use of IT or CMS to support the strategy]
    
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Need->Strategy->IT

Need	Strategy	IT Support
My student's aren't prepared for class discussion because they haven't kept up with the reading.	Use more frequent quizzes over the text readings.	Online quizzes can be set up to be made available right up to the time class starts and then turn off. Students must read the material & take the quiz before class.
	Encourage their engagement with the readings through discussion of key points with others in the class.	Set up discussion groups for the class in the Threaded Discussion area in which regular discussion of text reading can be done.

Menu of Topics

- Online “Lectures”
Features - Benefits - Examples - Classroom Changes
- Online Discussions
Features - Benefits - Examples - Guidelines - Classroom Changes
- Online Quizzing
Features - Benefits - Examples - Classroom Changes
- Student Collaborative Space
Features - Benefits - Classroom Changes
- Homework Drop Box
Features - Benefits - Examples
- Faculty & Student Assessment
How much time?

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Online “Lectures”

- Features
 - Web pages [delivered in CMS]
 - Multiple media sources available
 - Student use is recorded
 - Can link to
 - Objectives
 - Student notes
 - Discussion area

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Online “Lectures”

- Principle: Encourage active learning
- Principle: Communicate high expectations
- Benefits
 - Not restrained by class time
 - Can link to extra resources
 - Statistics on student use available
 - Student accountability
 - Increased time in-class for application and discussion
 - Don't sacrifice “coverage”

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Online “Lectures”

Course Content

1. John Locke's Influence
2. Shaftesbury in an Age of Enlightenment
3. Shaftesbury's Political Thought
4. Shaftesbury's Economic Thought
5. Shaftesbury's Religious Thought
6. Shaftesbury's Cultural Thought
7. Shaftesbury's Legacy

Less familiar to us today would be the name of the Earl of Shaftesbury. Shaftesbury was at the head of a virulently enemy campaign to get humanitarian legislation passed through Parliament in the middle of the nineteenth century. Biographer Georgia Huntcombe argues that Shaftesbury “was to do almost more than any other Englishman to lessen physical evils and to provide the poorest of the poor with opportunities to improve their minds, but,” she says, noting the religious roots of his actions, “he was always to believe that the damage to man’s souls weighed far heavier in the balance than the corresponding damage to their minds and bodies” (p. 85).

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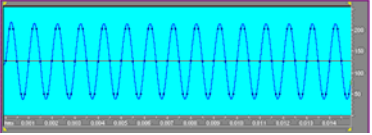
Adding Media

I used a microphone and sound card to digitize the word “cow.” I set the sampling rate at 6000Hz. Hz is the abbreviation for Hertz, or cycles per second. That means the sound card measures 6000 points on the wave every second. While that may seem like a lot, that is actually a low resolution, less, even, than the quality of a phone call. Once that sample rate is set, then the computer sets a timing clock which triggers a sample to be taken 6000 times a second. This animation illustrates the process—the sound wave created over time as the timing clock triggers samples, which are then marked on points. In order to see the individual points being set, I had to zoom in on just one small part of the waveform.

Once these discrete points have been moved in a waveform, then a Digital-to-Analog Converter (DAC) is used to reverse the process. As the computer processes the individual points of the waveform, it interpolates the line necessary to “connect the dots,” which looks like this.

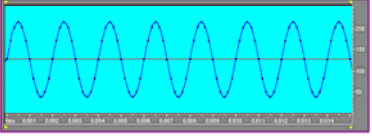
Adding Media

This site was created at 1,000Hz



To hear that pure tone, click on the image

This second site wave was created at 500Hz



Again, you can hear the generated tone by clicking on the image

Student Learning

Course Content

1. John Marshall Decision
2. Chief Justice in an Age of 1
- 2.1. Judiciary
- 2.2. Judiciary Factors
- 2.3. Judiciary Factors
- 2.4. Judicial Ethics
- 2.5. Judiciary
- 2.6. Judiciary
3. Analog and Digital Mo
- 3.1. Analog and Digital Mo
4. Introduction to the Co
- 4.1. Introduction to the C
- 4.2. Breakout Regal

Introduction On Your Own

For Independent Study

If you are interested in learning more about how the U.S. Supreme Court operates, there are a couple of excellent sources for you that will provide a living perspective on the Court. One is Bob Woodward and Scott Armstrong's book, *The President: Inside the Supreme Court* (New York: Simon and Schuster, 1979). Based upon extensive interviews with people who have worked for the Court, the book provides a readable "behind the scenes" description of the Court's process. The Congressional Library has a copy of the two, and I have two copies available if you are interested in reading the book.


The second is recordings of the oral arguments before the U.S. Supreme Court. Not many people get to sit in the courtroom when the Justices are hearing arguments. The chamber is small, so tickets are limited. Those lucky enough to be in Washington when the Court is in session can sit in the back row for a few minutes, but they are restricted to

Classroom Changes

Principle: "The smaller a graphic element, the more contrast it needs. Small type requires high contrast: ..."

High contrast Low contrast

... as the type size increases, the contrast requirements decrease. ...



Letters of identical values

Letters of one degree of value

... A large, bold line of type can sustain a relatively low contrast level and still read effectively"

Classroom Changes

• "Lines with low values contrast well with white or light grounds"

Hue of low value on ground of high value

Lines with high values contrast well with black.

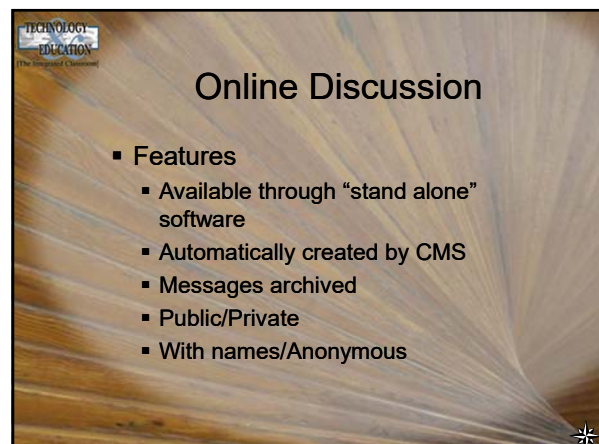
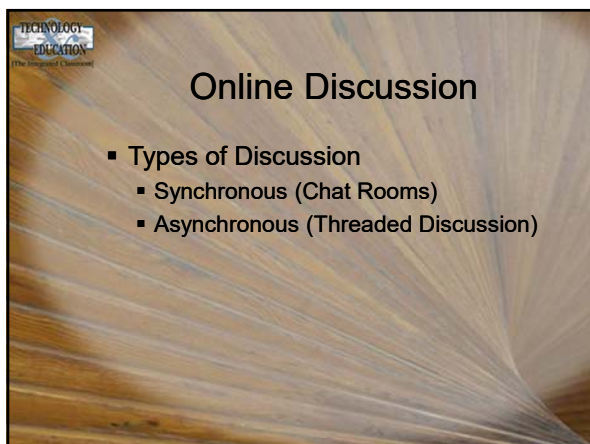
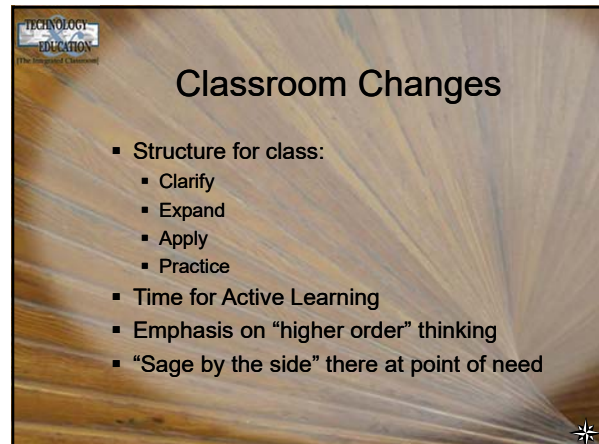
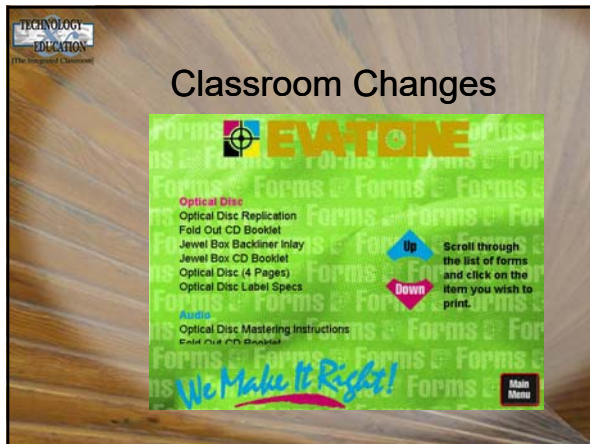
Hue of high value on ground of low value

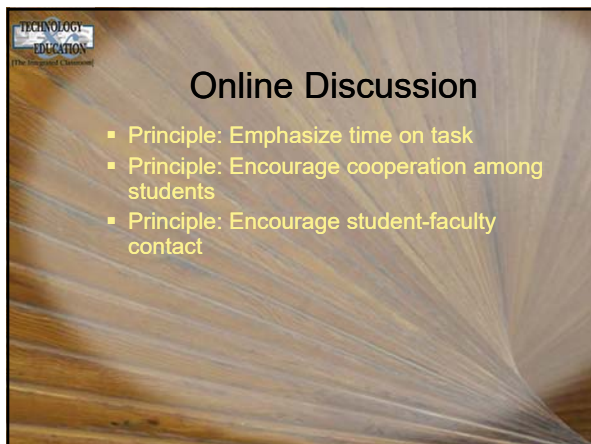
Yellow reads well on blue, for example:

Hue of high value on ground of low value

but cyan and orange don't combine effectively because both fall in the mid-value range" (Holl, 1993, p. 133)

Hues of equal value

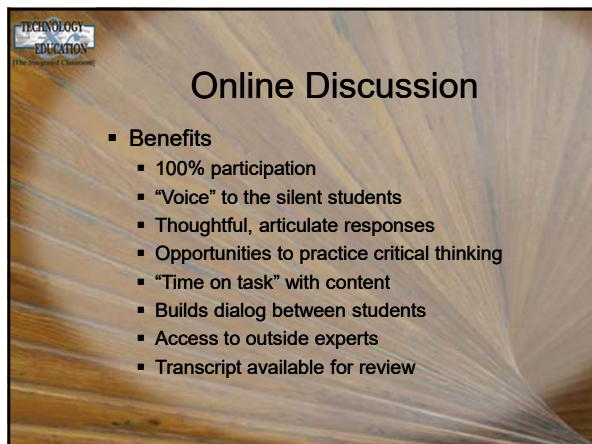




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Online Discussion

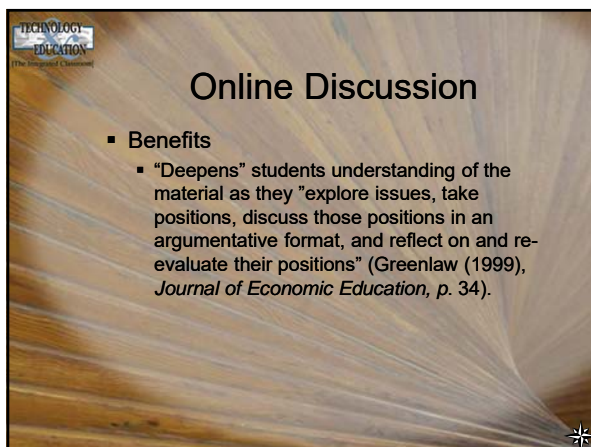
- Principle: Emphasize time on task
- Principle: Encourage cooperation among students
- Principle: Encourage student-faculty contact



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Online Discussion

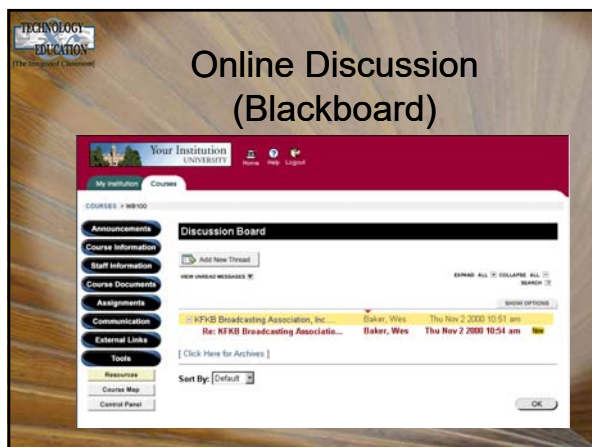
- Benefits
 - 100% participation
 - “Voice” to the silent students
 - Thoughtful, articulate responses
 - Opportunities to practice critical thinking
 - “Time on task” with content
 - Builds dialog between students
 - Access to outside experts
 - Transcript available for review



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Online Discussion

- Benefits
 - “Deepens” students understanding of the material as they “explore issues, take positions, discuss those positions in an argumentative format, and reflect on and re-evaluate their positions” (Greenlaw (1999), *Journal of Economic Education*, p. 34).



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Online Discussion (Blackboard)

Your Institution
University

My Institution Courses

COURSES > MB100

Announcements

Course Information

Staff Information

Course Documents

Assignments

Communication

External Links

Tools

Resource

Course Map

Control Panel

Discussion Board

Add New Thread

view unread messages 0

SEARCH

SHOW OPTIONS

KFYB Broadcasting Association, Inc. Baker, Wes Thu Nov 2 2000 10:51 am

Re: KFYB Broadcasting Associatio... Baker, Wes Thu Nov 2 2000 10:54 am

[Click Here for Archives]

Sort By: Default

OK

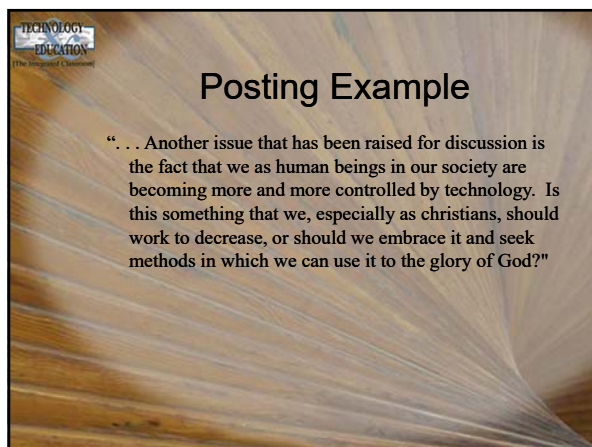
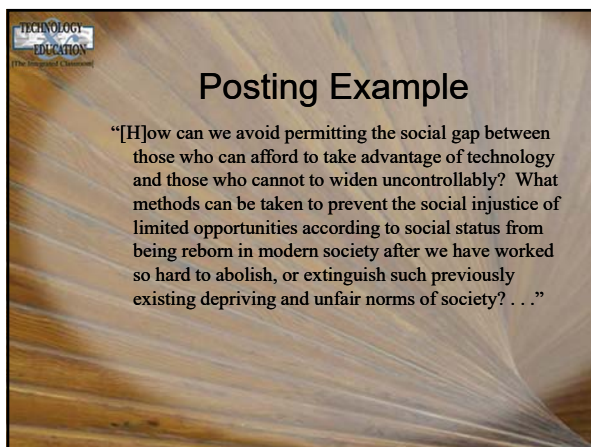
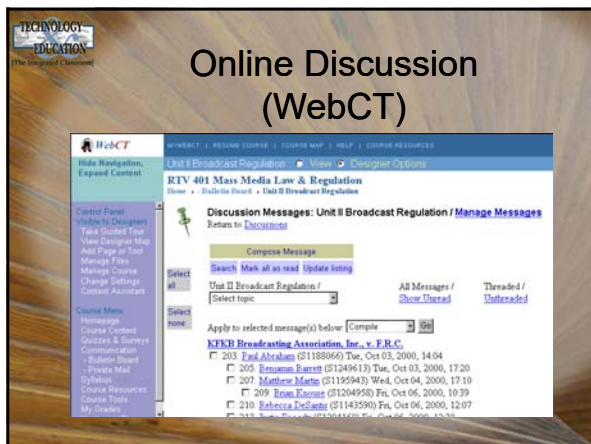
Online Discussion (Blackboard)


Online Discussion (Jenzabar)

Online Discussion (Jenzabar)

Online Discussion (WebCT)

Component	Count 1	Count 2	Status
All	61	159	
Final Projects	0	0	public, unlocked
Group 1	4	4	private, unlocked
Group 2	20	27	private, unlocked
Group 3	8	13	private, unlocked
Group 4	15	25	private, unlocked
Main	0	0	public, unlocked
Notes	0	0	public, unlocked
Summer School	0	0	public, unlocked
Test Projects	1	1	public, anonymous, unlocked
Use II Broadcast Regulation	12	87	public, unlocked
Use III Cable and New Tech	1	2	public, unlocked
Use IV Substantial Privacy	0	0	public, unlocked
Use V A-Department	0	0	public, unlocked
Use VI Performance and Privacy	0	0	public, unlocked






Student Assessment


- The threaded discussions helped me to internalize concepts. The discussions were not just two-minute class discussions that I forgot shortly after class dismissed. The discussions were something that I spent a significant amount of time thinking about, working on, and reflecting on what my partner said. Because of this I remember a significant portion of what was discussed.

Student Comment from Education Class, Winter 2000




Instructions for Discussion

- Bert Wheeler's Guidelines
 - Each student will be required to post to a bulletin board at the class's WebCT site and participate in a threaded discussion (20% of total grade).
 - The postings will be based on pre and post debate discussion
 - Each student should "average" two (2) postings per debate.
 - It will be necessary to "keep up" with the postings. If a student attempts to post a large number of times at the end of the quarter, the postings will not count.



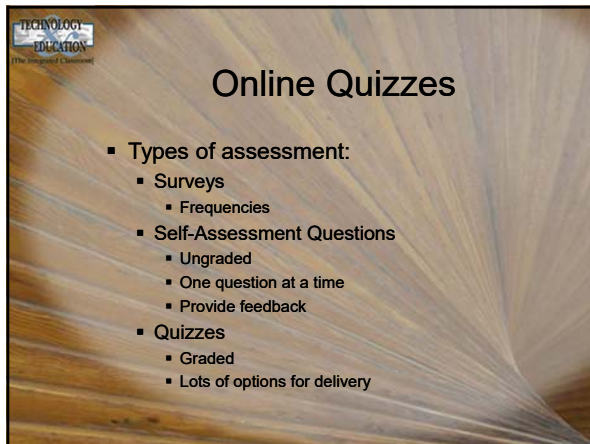
Instructions for Discussion

- Bert Wheeler's Guidelines
 - If an individual student's postings are not of a sufficient quality, notification will be made by email.
 - The purpose of the postings will be to show reflection, synthesis, evaluation and deliberation on the specific issue or ethical dilemma.
 - The grade on the postings will be earned based on 18 total posting opportunities.



Classroom Changes

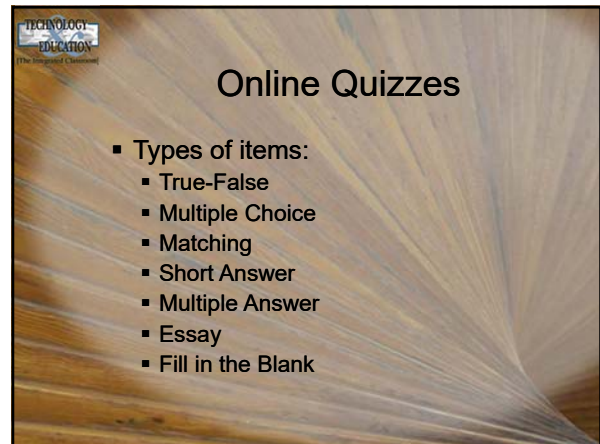
- Small groups carry over into class work
- Students better prepared for in-class discussion
- Students may gain more confidence to participate in-class
- More time in class for "higher order" thinking



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Online Quizzes

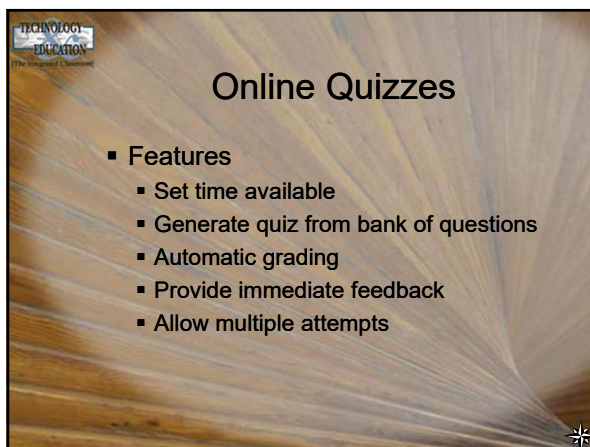
- Types of assessment:
 - Surveys
 - Frequencies
 - Self-Assessment Questions
 - Ungraded
 - One question at a time
 - Provide feedback
 - Quizzes
 - Graded
 - Lots of options for delivery



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Online Quizzes

- Types of items:
 - True-False
 - Multiple Choice
 - Matching
 - Short Answer
 - Multiple Answer
 - Essay
 - Fill in the Blank

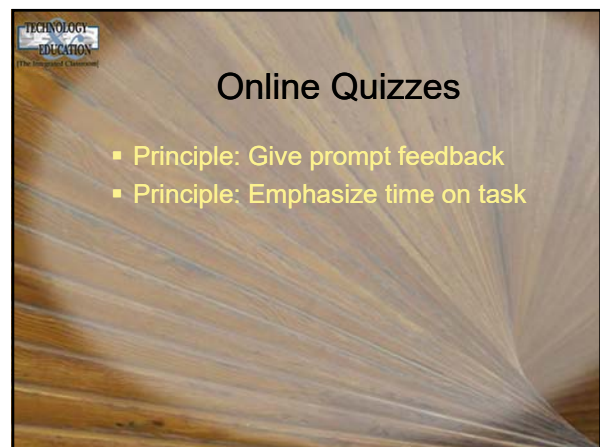


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Online Quizzes

- Features
 - Set time available
 - Generate quiz from bank of questions
 - Automatic grading
 - Provide immediate feedback
 - Allow multiple attempts


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Online Quizzes

- Principle: Give prompt feedback
- Principle: Emphasize time on task

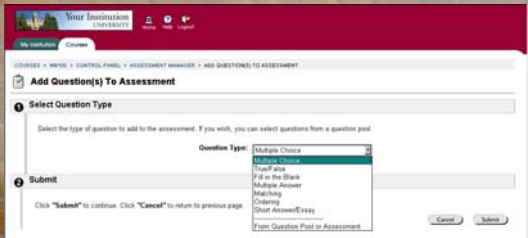



Online Quizzes

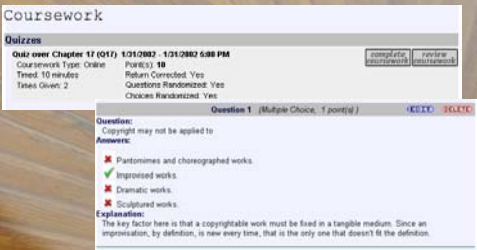

- **Benefits**
 - Holds students accountable for reading
 - Saves class time
 - Provides immediate feedback
 - Can repeat for mastery
 - Can be used for practice tests
 - Provides formative assessment for class discussion



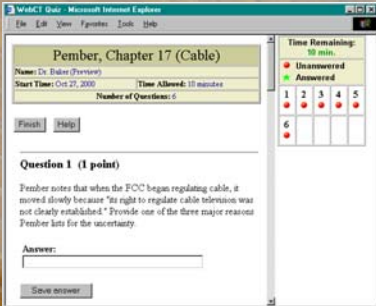
Online Quizzes (Blackboard)

Online Quizzes (Jenzabar)


Online Quizzes (WebCT)



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Classroom Changes

- Less need to overview text
- Better discussion, since students have read material prior to class



Question 1: Excellent 5 : 4 : 3 : 2 : 1 Unprepared *5/5*

Question 2: Excellent 5 : 4 : 3 : 2 : 1 Unprepared *5/5*

Question 3: Excellent 5 : 4 : 3 : 2 : 1 Unprepared *5/5*

Question 4: Excellent 5 : 4 : 3 : 2 : 1 Unprepared *5/5*

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Classroom Changes

- Focus more on “higher order” thinking
- “This leaves class time for expanding on the topics and discussing them at a deeper level because [the students] have been prepared before coming to class.”

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Student Collaborative Space

- Features
 - Area for students to upload material
 - Only members can save files
 - Rest of class only sees what the members make public

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Student Collaborative Space

- Principle: Respect diverse talents and ways of learning
- Principle: Encourage cooperation among students




Student Collaborative Space

- **Benefits**
 - Place for posting student projects
 - Assignments (individual or by assignment)
 - Group shared files (only group access)
 - Group reports (shared with class)
 - In-class presentation available for review
 - Students may view one another's projects
 - Area for group collaborative work




Classroom Changes

- Group has access to shared files in and out of class
- Students can learn from one another's assignments outside of class
- Homework can be submitted outside of class



Homework Drop Box


- **Features**
 - Provides assignment instructions
 - May deliver related files for students
 - Automatic availability
 - Students upload electronic files
 - Includes comment and grade fields
 - Automatically connected to grade book



Homework Drop Box

- **Benefits**
 - Don't have to collect papers
 - No late work accepted
 - Can provide electronic comments (in paper and/or from submission page)
 - Grade automatically entered in grade book

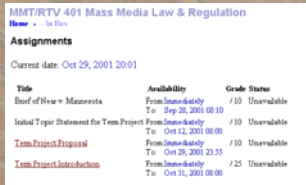
Homework Drop Box (Blackboard)



The screenshot shows the Blackboard Digital Drop Box interface. At the top, it says "Your Institution UNIVERSITY". Below that, there are navigation tabs for "My Institution" and "Courses". The main heading is "Digital Drop Box". Underneath, there is a section for "File Information" with fields for "Title", "File", and "Comments". The "Title" field contains "Hoover on earth regulation". The "File" field contains "D:\Classes\Law_and_Reg\law_history\Ho". The "Comments" field contains "Comments of Secretary of Commerce Herbert Hoover on his approach to the expansion of radio prior to the SMITH DECISION." There is a "Submit" button at the bottom left.

Homework Drop Box (WebCT)

▪ Example

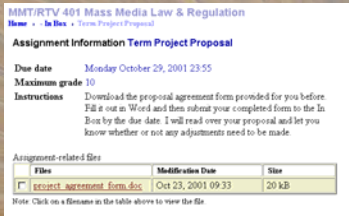


The screenshot shows the WebCT Assignments page for "MMT/RTV 401 Mass Media Law & Regulation". It lists several assignments with their availability and grade status:

Title	Availability	Grade Status
Brief of New v. Massachusetts	From Immediately To Sep 20, 2001 08:10	/10 Unavailable
Initial Topic Statement for Term Project	From Immediately To Oct 12, 2001 08:00	/10 Unavailable
Term Project Proposal	From Immediately To Oct 26, 2001 23:55	/10 Unavailable
Term Project Introduction	From Immediately To Oct 31, 2001 08:00	/25 Unavailable

Homework Drop Box (WebCT)

▪ Example



The screenshot shows the WebCT Assignment Information page for "Assignment Information Term Project Proposal".

Due date: Monday October 29, 2001 23:55
Maximum grade: 10

Instructions: Download the proposal agreement form provided for you before Fall is out in Word and then submit your completed form to the In Box by the due date. I will read over your proposal and let you know whether or not any adjustments need to be made.

Assignment-related files:

Files	Modification Date	Size
proposal_agreement_form.doc	Oct 23, 2001 09:33	20 kB

Note: Click on a filename in the table above to view the file.

Homework Drop Box

Mass Media Law & Regulation
Agreement on Term Project

Your Name: _____

Your proposed topic (as narrowly worded as you can at this point in your research): _____

Your research question (if you have developed one at this point): _____


The type of project you propose during for this topic (indicate by placing an "X" in the brackets next to your choice):

Research Paper
 Multimedia Project
 Handbook
 Web pages (electronic handbook)

Audience: _____

If you are proposing a project other than a research paper, provide a rationale for your selection: _____

Submitted by: _____ Date: _____
 Approved: _____ Date: _____



Homework Drop Box

Mass Media Law & Regulation
Agreement on Term Project


Your Name: John Doe

Your proposed topic (as narrowly worded as you can at this point in your research): Deceptive advertising and its effect on consumer's buying habits


Your research question (if you have developed one at this point):
How does advertising effect consumer's buying habits, and if the advertising is deceptive, what changes do the consumers make? (Not sure on this yet) Remember, this needs to be a legal topic, so "effect on consumer's buying habits" is not going to get you into the FTC rulings or court decisions on deceptive advertising; it's going to get you into surveys of consumer behavior, which is not the right direction for this class. The one possible connection may be in the rationale for FTC regulation of deceptive advertising, but that topic is covered pretty well by the text's examination of the history and development of FTC regulation in this area and you need to go beyond what the text has to offer. Take a look at the deceptive advertising cases and see where that takes you. Have you been able to find any?

The type of project you propose during for this topic (indicate by placing an "X" in the brackets next to your choice):

Research Paper




Faculty & Student Assessment of "Flipped" Classes




Faculty Assessment

- John Schauf, Edgewood College
 - Information Technology
- Cheryl Irish, Cedarville University
 - Special Education
 - Small class (10) - online discussion
- Susan Warner, Cedarville University
 - Marriage and the Family
 - Large class (58) - online discussion




John Schauf
Information Technology




Goal:
Open up Class Time

Goal:
More Active Learning

"I now do little lecturing. The students are expected to read the chapter, review my on-line chapter notes, and then we work on the homework in class. I find that I can provide much more help to the students when I can immediately answer their questions . . . The students accomplish more "homework" because they are not stuck for hours on a question that I can answer immediately."



John Schauf
Information Technology



Goal:
Student sense of
responsibility for
learning

“The upshot is that I can cover the critical material much more quickly and thoroughly than I can in a traditional class. You have to depend on your students getting more of the material on their own while you concentrate on the crucial. The students love it . . . and they are doing better on the whole than the same caliber students from my past classes.”



Cheryl Irish
Education



Goal:
Open up Class Time

Goal:
More Active Learning

“I can now use class time for discussions and learning activities I didn’t have time for before. I was frustrated with the short amounts of time I had in the past for these important experiences, but with WebCT for the concrete activities, we’re able to focus on higher levels of learning in class.”




Cheryl Irish
Education




Goal:
Student sense of
responsibility for
learning

“WebCT provides me with a mechanism for holding students accountable for reading assignments. They read the assignment and then take quizzes and participate in small group discussions over the reading material while in WebCT. This leaves class time for expanding on the topics and discussing them at a deeper level because they have been prepared before coming to class.”





Susan Warner
Sociology



Goal:
Opportunities to
learn from peers

“I was concerned my students have an outlet to be able to discuss relevant issues that surfaced during class discussion. So I divided them into group of approximately eight students. Each group had its own private bulletin board where they could post their reactions. They would often talk about their own families in ways they would not in class.”






The students say...

- These discussions helped me “dig” inside myself and find out what I truly thought. I grew as a teacher and as a Christian.
- ...I was not put on the spot and also was given plenty of time to think about ideas.


Student Comments from Cheryl Irish, Winter 2000



The students say...

- I think that I shared in more detail than I would have in class...sometimes in class time would run out and I would still be thinking about things...so it was nice to be able to have a place to talk about some of those things.


Student Comments from Cheryl Irish, Winter 2000



The students say...

- It (threaded discussion) helped me to internalize topics better because I had to think about the issues. I had to look things up in the book, in my notes and in my Bible to formulate my entry. Having to do all that work was sometimes frustrating, but it definitely helped me to learn it better.


Student Comments from Cheryl Irish, Winter 2000



The students say...

- I often felt rushed to get this done because I had so much other work to do and had to wait for my partners to respond *but* I did internalize concepts...I learned about my own beliefs in the process.


Student Comments from Cheryl Irish, Winter 2000



The students say...

- When writing the threaded discussion, I seemed to write a lot more than I would share in class. The reason being: I like to write a whole lot more than I like to talk. I also seemed to be able to think more deeply about the subjects and Biblical integration thus could write more.



Student Comments from Cheryl Irish, Winter 2000



Student Assessment

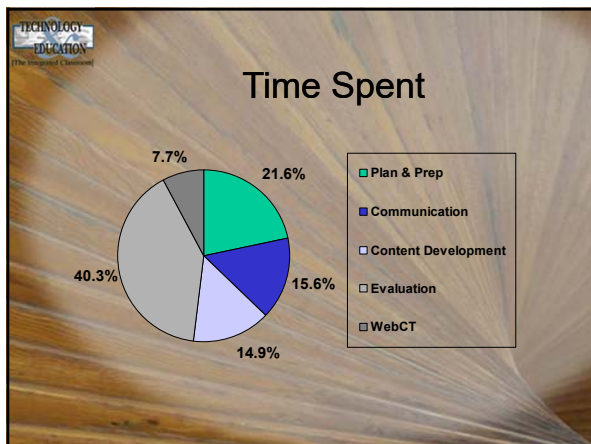
- The threaded discussions helped me to internalize concepts. The discussions were not just two-minute class discussions that I forgot shortly after class dismissed. The discussions were something that I spent a significant amount of time thinking about, working on, and reflecting on what my partner said. Because of this I remember a significant portion of what was discussed.

Student Comment from Education Class, Winter 2000

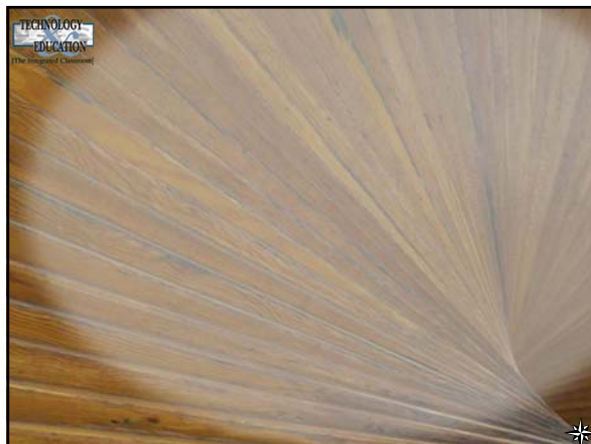


Time Spent

- Accounting of time spent on Mass Media Law & Regulation (Fall 2001)
- WebCT used for:
 - Content
 - Delivery of student briefs & memos for all to read prior to class
 - Homework submission
 - Quizzes over text
 - Grade book



Activity	Time to Date	Percentage		
Planning and Preparation			34.48	21.6%
Class Preparation	11.50	7.2%		
Planning	2.93	1.8%		
Resource Development	4.20	2.6%		
Syllabus	6.38	4.0%		
Text reading	9.47	5.9%		
Communication			24.85	15.6%
Communication - Group	7.12	4.5%		
Communication - Individual	17.73	11.1%		
Content Development			23.68	14.9%
Content Development	21.88	13.6%		
Graphics	2.00	1.3%		
Evaluation			64.25	40.3%
Quizzes	9.02	5.7%		
Tests	12.90	8.1%		
Evaluation - Formative	1.85	1.2%		
Evaluation - Summative	2.63	1.6%		
Evaluation - Individual Summative	37.85	23.7%		
WebCT Administration			12.20	7.7%
Quiz Setup	1.08	1.0%		
File Management	4.12	2.6%		
WebCT	6.99	4.4%		
	159.46		159.46	



Citations

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