



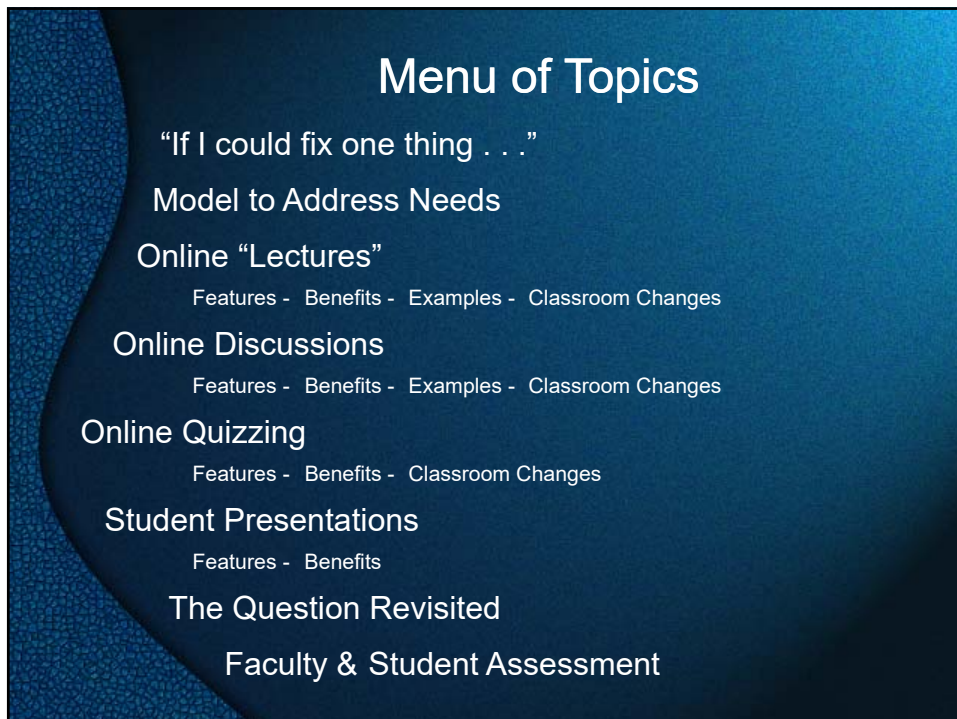
Michigan Colleges Foundation

Moving to the Next Level:

Becoming the Sage by the Side

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Menu of Topics

“If I could fix one thing . . .”

Model to Address Needs

Online “Lectures”
Features - Benefits - Examples - Classroom Changes

Online Discussions
Features - Benefits - Examples - Classroom Changes

Online Quizzing
Features - Benefits - Classroom Changes

Student Presentations
Features - Benefits

The Question Revisited
Faculty & Student Assessment

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?

What I wanted to fix...

- Students don't seem to be "getting it"
- The "tyranny of the lecture"



Two Converging Trends



Change in Educational Philosophy


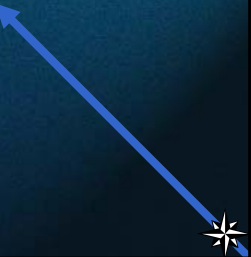
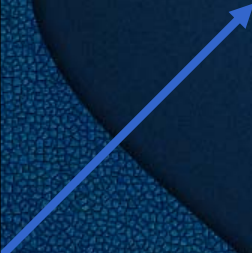
From the "Sage on the stage to the Guide by the Side."



Two Converging Trends

Change in Educational Philosophy

Introduction of New Instructional Technologies



Old v. New Technologies

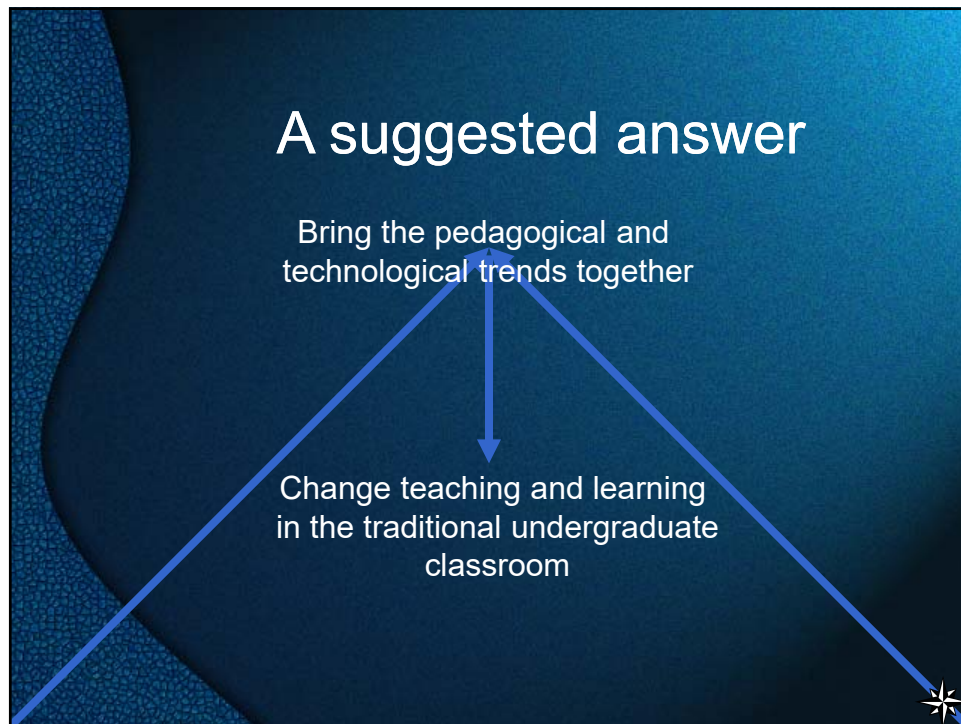
“Old”	“New”
Passive	Interactive
Analog	Digital
Linear	Non-linear



The question

- How can college professors teaching face-to-face courses use these technologies to transform their classrooms?





- ## Goals
- Find an approach to move from “sage” to “guide”
 - Reduce time spent on lecturing
 - Open up class time for active learning

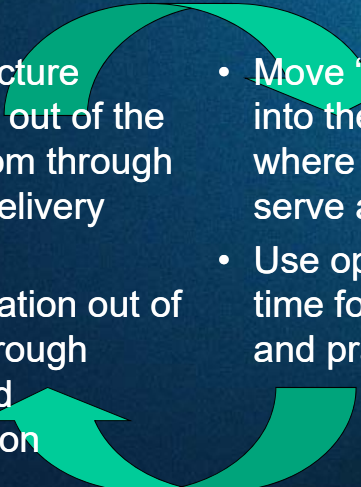
Goals

- 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

Goals

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

The Classroom Flip

- Move lecture material out of the classroom through online delivery
 - Move “homework” into the classroom where faculty can serve as guide
 - Extend conversation out of class through threaded discussion
 - Use opened up time for application and practice
- 



Enabling Technologies

- Course Management Systems
 - Online “Lectures”
 - Online discussion
 - Quizzes
 - Student Presentations



Online “Lectures”

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



Online “Lectures”


- 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”



Course Content

- 1. John Wasbitt Interview
- 2. Christians in an Age of
- 2.1. Shaftesbury
- 2.2. Shaftesbury-Factorie
- 2.3. Shaftesbury-Factorie
- 2.4. Ragged Schools
- 2.5. Motivation
- 2.6. Conclusion
- 3. Analog and Digital Med
- 3.1. Analog and Digital M
- 4. Introduction to the Cour
- 4.1. Introduction to the C
- 4.2. II Broadcast Regula

Less familiar to us today would be the name of the Earl of Shaftesbury. Shaftesbury was at the head of virtually every campaign to get humanitarian legislation passed through Parliament in the middle of the nineteenth century. Biographer Georgia Battiscombe 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 men's souls weighed far heavier in the balance than the corresponding damage to their minds and bodies" (p. 85)



2.2. Shaft

2.3. Shaft

2.4. Ragg

2.5. Moti

2.6. Conc

3. Analog

• 3.1. Anal

4. Introduc

4.1. Intro

4.2. II B

5. Graphic

5.1. Grap

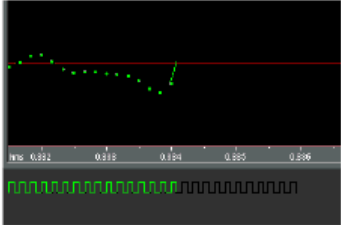
5.2. Grap

5.3. Grap

5.4. Grap

5.5. Grap

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 as points. In order to see the individual points being set, I had to zoom in on just one small part of the dipthong:



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

The screenshot shows a web browser window with a navigation bar at the top containing links for home, contents, refresh, pg back, and pg fwd, along with icons for a book, magnifying glass, and person. The main content area is titled "Introduction On Your Own" and features a large American flag. A sidebar on the left lists course content items, with "4.1. Introduction to the C" selected. The main text under "For Independent Study" discusses the book "The Brethren: Inside the Supreme Court" by Bob Woodward and Scott Armstrong, and mentions recordings of oral arguments. A small image of the book cover is visible on the right.

The screenshot shows a web browser window displaying a graphic design principle. The sidebar on the left lists items under "5. Graphic Design - Princ" and "5.1. Graphic Design - Pr". The main content area is titled "Principle: 'The smaller a graphic element, the more contrast it needs. Small type requires high contrast; ...'". Below the title, there are two boxes labeled "High contrast" and "Low contrast". A diagram shows two sets of the letter 'A' on a background of varying shades of gray. The first set shows 'A's on a white background, and the second set shows 'A's on a dark gray background. A blue callout box points to the 'A's on the white background, stating "Letters of identical values". Another blue callout box points to the 'A's on the dark gray background, stating "Letters of one degree of value difference from ground". Below the diagram, the text reads "... as the type size increases, the contrast requirements decrease. ...". At the bottom, a quote states "... A large, bold line of type can sustain a relatively low contrast level and still read effectively".

2.2. Shaftesbury-Factor
2.3. Shaftesbury-Factor
2.4. Ragged Schools
2.5. Motivation
2.6. Conclusion
3. Analog and Digital Mo
3.1. Analog and Digital
4. Introduction to the Co
4.1. Introduction to the
4.2. II. Broadcast Regal
5. Graphic Design - Princ
5.1. Graphic Design - Pr
5.2. Graphic Design - Pr
5.3. Graphic Design - Pr
5.4. Graphic Design - Pr
5.5. Graphic Design - Pr

• "Hues with low values contrast well with white or light grounds;
Hue of low value
on ground of high value

hues 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"
(Rabb, 1993, p. 125).
Hues of equal value

In-Class Discussion

Optical Disc
Optical Disc Replication
Fold Out CD Booklet
Jewel Box Backliner Inlay
Jewel Box CD Booklet
Optical Disc (4 Pages)
Optical Disc Label Specs

Up
Down

Scroll through the list of forms and click on the item you wish to print.

We Make It Right!
Main Menu

Classroom Changes

- Structure for class:
 - Clarify
 - Expand
 - Apply
 - Practice
- Time for Active Learning
- Emphasis on “higher order” thinking
- “Sage by the side” there at point of need



Online Discussion

- Types of Discussion
 - Synchronous (Chat Rooms)
 - Asynchronous (Threaded Discussion)



Online Discussion

- Features
 - Automatically created by CMS
 - Messages archived
 - Public/Private
 - With names/Anonymous



Online Discussion

- Benefits
 - 100% participation
 - “Voice” to the silent students
 - Thoughtful, articulate responses
 - “Time on task” with content
 - Use for student presentations with Q&A
 - Transcript available for review



Posting Example

"... how can we avoid permitting the social gap between those who can afford to take advantage of technology and those who cannot to widen uncontrollably? What methods can be taken to prevent the social injustice of limited opportunities according to social status from being reborn in modern society after we have worked so hard to abolish, or extinguish such previously existing depriving and unfair norms of society?"

Posting Example

"Another issue that has been raised for discussion is the fact that we as human beings in our society are becoming more and more controlled by technology. Is this something that we, especially as christians, should work to decrease, or should we embrace it and seek methods in which we can use it to the glory of God?"

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 Cheryl Irish, Winter 2000



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



Online Quizzes

- Types of items:
 - True-False
 - Multiple Choice
 - Matching
 - Short Answer
 - Calculated
 - Paragraph Answer (Essay)



Online Quizzes

- Features
 - Set time available
 - Generate quiz from pool of questions
 - Automatic grading
 - Set feedback based upon response
 - Allow multiple attempts



Online Quizzes

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



Classroom Changes

- Less need to overview text
- Better discussion, since students have read material prior to class
- Focus more on “higher order” thinking
- “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.”



Student Presentation

- Features
 - Area for students to upload material
 - Can be divided into groups



Student Presentation

- Benefits
 - Place for introductory personal information
 - In-class presentation available for review
 - Place for posting student projects



The question revisited

- How can college professors teaching face-to-face courses use these technologies [in pedagogically effective ways] to transform their classrooms?

“Effective Practices”

Need	Strategy	CMS 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.



Faculty & Student Assessment of “Flipped” Classes




Faculty Assessment

- Cheryl Irish
 - Special Education
 - Small class (10)
 - Used online discussion
- Susan Warner
 - Marriage and the Family
 - Large lecture class (58)
 - Used online discussion

**Goal:
Open up Class Time**

**Goal:
More Active Learning**


Cheryl Irish
Education



“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.”


**Goal:
Student sense of
responsibility for
learning**

Cheryl Irish
Education




“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

- Survey of Six Web-enhanced Classes
 - Range of Sizes: 9-58 (8-45 in-tab)
 - Mean Class Size: 21.3
 - Students in-tab: 132
- Survey of Four Lecture Classes
 - Range of Sizes: 13-33 (in tab)
 - Mean Class Size: 22
 - Students in-tab: 88



Student Assessment

Statements with strongest positive ratings
(Strongly Agree = 1)

**Goal:
Opportunities to
learn from peers**

The class encouraged me to spend more time collaborating with other students than I typically do in other classes. (Graphic Design 1.3;

All Web-enhanced 2.73, Lecture 3.23, $p < .002$)

I feel I learned from my fellow students through their presentations and comments in class discussion.

(Graphic Design 1.7; Comm in the Info Age 2.3;
All Web-enhanced 2.05, Lecture 2.81, $p < .003$)

Student Assessment
Statements with strongest positive ratings
(Strongly Agree = 1)

**Goal:
Focus on Understanding
and Application**

Class discussion encouraged
critical thinking.
(Graphic Design 1.4; Comm in the Info Age 1.8;
All Web-enhanced 2.08, Lecture 2.14, p< .246)

In-class time was spent more in discussing
implications than in presenting facts.
(Graphic Design 1.8; Comm in the Info Age 1.8;
All Web-enhanced 1.89, Lecture 3.13, p< .000)

Student Assessment
Statements with strongest positive ratings
(Strongly Agree = 1)

**Goal:
Student control of learning**

The [online/class] resources provided me
with more control over my own learning.
(Graphic Design 1.8;
All Web-enhanced 2.64, Lecture 2.02, p.< .002)

Student Assessment
Statements with strongest positive ratings
(Strongly Agree = 1)

**Goal:
Student sense of
responsibility for
learning**

I was more responsible for my own learning in this class compared with others.
(Comm in the Info Age 1.8;
All Web-enhanced 2.10, Lecture 2.69, $p < .000$)

Student Assessment
Statements with strongest positive ratings
(Strongly Agree = 1)

**Goal:
From Sage to Guide**

The online material and in-class discussion made the course more of a forum than a lecture. (Comm in the Info Age 2.1;
All Web-enhanced 2.05, Lecture 3.3, $p < .000$)

The question re-stated

- Can college professors teaching face-to-face courses use these technologies in pedagogically effective ways to transform their classrooms?

The answer

- YES!



