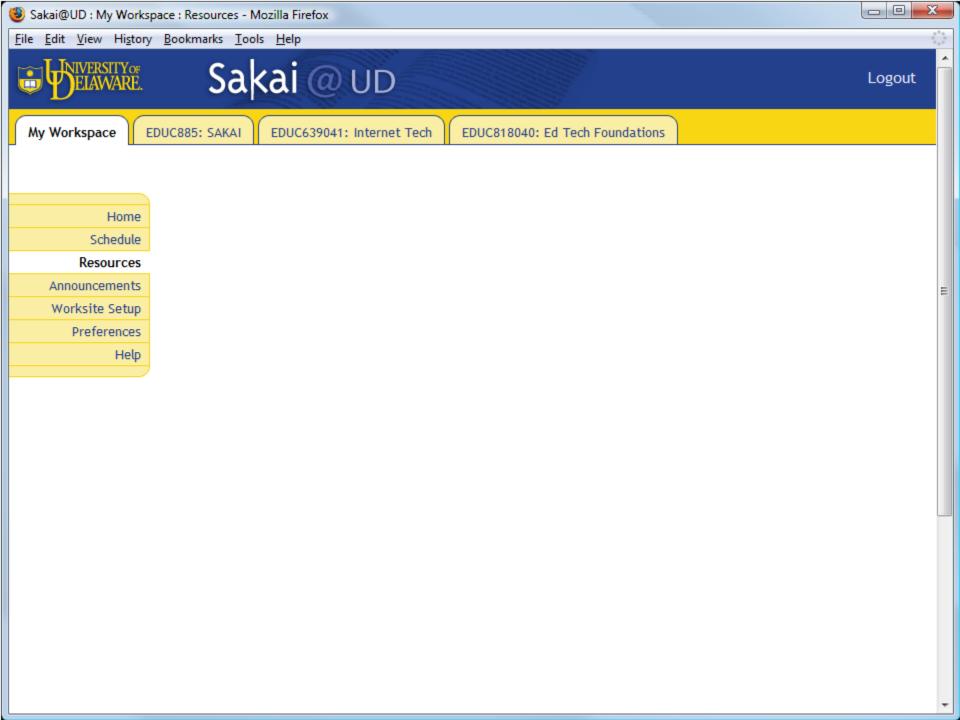
# Sakai Pedagogy and Instructional Strategies

Selecting Sakai Tools
Based on How People Learn

# Designing a Course with Sakai

- Sakai uses a frameset that provides the student with a powerful set of tools in a left sidebar.
- The key to creating a successful course with Sakai is designing the content so it can integrate seamlessly along the sidebar.
- Sakai lets you, the course instructor, decide which tools will appear in the sidebar.
- How do you make these decisions?





### Frameworks for Framesets

- The science of learning has evolved theoretical frameworks based on researched best practices that can inform the design of your Sakai frameset.
- The design principles I will be presenting this morning are based on this research, which I will document as we move along.

# How People Learn

- How do you decide which Sakai tools to use?
- You decide based on how people learn.
- A landmark book from the National Research Council, How People Learn is freely available at www.nap.edu/openbook.php?isbn=0309070368.
- It describes how effective learning environments are learner-centered, knowledge-centered, assessment-centered, and community-centered.
- Sakai contains tools that support and align these four components for learning.

# The Science of Learning

According to *How People Learn* (pp. 14-23), three guiding principles have emerged from the science of learning:

- 1) People learn by connecting new information to concepts already learned.
- 2) To learn how to reason, solve problems, and augment knowledge in a field of inquiry, people need to understand facts and ideas in the context of a conceptual framework that facilitates application to real-world problem solving.
- 3) People are motivated to learn when they can set their own goals, reflect on their progress, and feel in control of their learning.

From these principles, it follows that Sakai learning environments will be effective when instructional designs:

- 1) take into account the learner's preexisting understandings and correct any faulty preconceptions in order to prevent future misunderstandings;
- 2) enable students to study multiple examples of the concept at work in order to learn it in depth in authentic contexts; and
- 3) include metacognitive supports that make visible the learner's reflections and enable an instructor to provide scaffolding and guide revisions to improve student learning and reasoning.

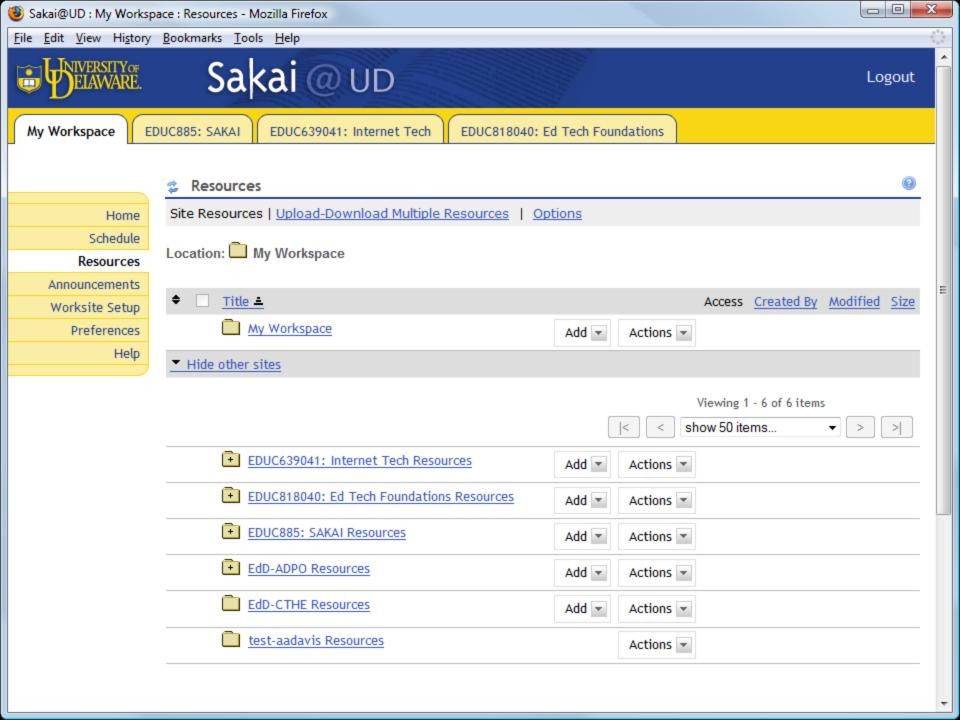
### Sakai Tool Selection

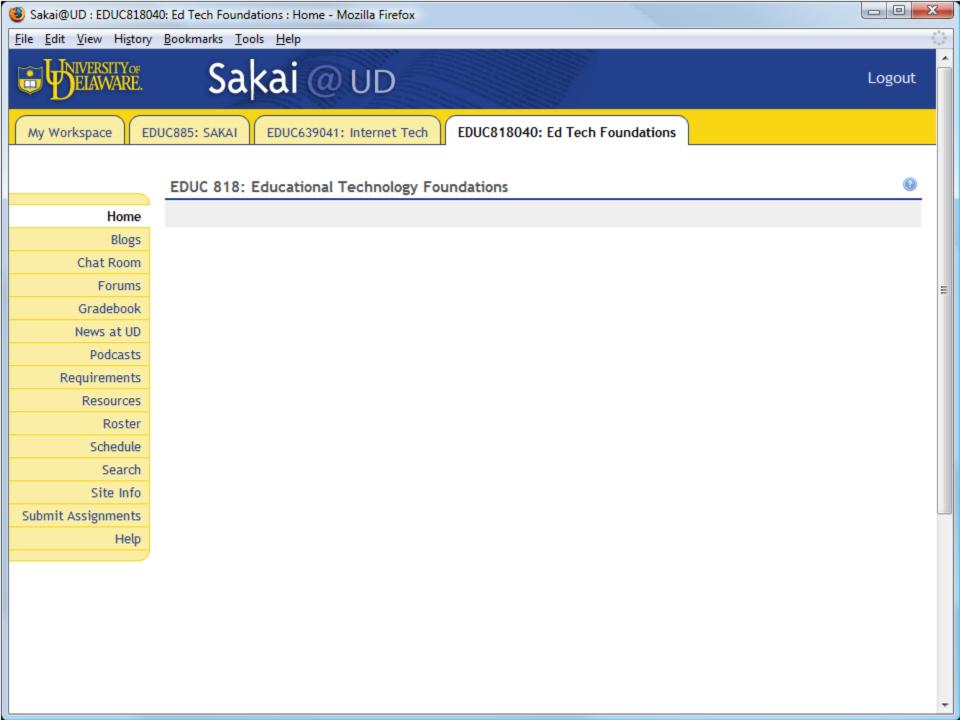
Learning principles guided my selection of the following Sakai tools to create a socially constructivist e-learning environment:

- Home. Collapsible menus foster differentiated instruction.
- Assignments. Engage and scaffold students in the zone.
- Schedule. Visualize how the course unfolds.
- Forums. Interact in a socially constructed discussion.
- Wiki. Build communal knowledge.
- Blogger. Submit reflective logs.
- Podcasts. Get videos just-in-time.
- Chat Room. Talk synchronously with classmates online.

- Search. Find things in the course including chats with tags.
- Roster. Identify your classmates.
- Site Info. Create groups and give tools intuitive names.
- Resources. Peruse file folders and follow Web links.
- Tests. Survey students about their initial reactions to Sakai.
- Gradebook. Provide second chances to enable students to succeed.
- Help. Get answers to your questions about Sakai.





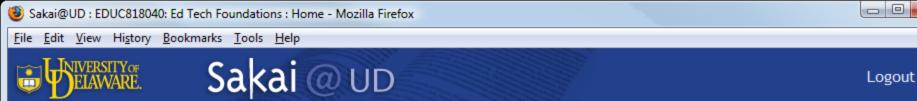


# Sakai Web Design

Making Content Make Sense in the Context of the Sakai Frameset

# Creating Your First Screen

- What the student sees onscreen makes all the difference in an online course. The first screen especially must make sense. You need to make it as intuitive as you can.
- Because Sakai uses a frameset, you are going to have its menu of tools in the left sidebar.
- How do you design your content so it makes sense in the context of the Sakai sidebar?



My Workspace

EDUC885: SAKAI

Options

EDUC639041: Internet Tech

EDUC818040: Ed Tech Foundations

#### EDUC 818: Educational Technology Foundations

Home

Blogs Chat Room

Forums

Gradebook News at UD

Podcasts

Requirements

Resources

Roster

Schedule

Search

Site Info

Submit Assignments

Help

# EDUCATION SCHOOL OF

#### **Educational Technology Foundations Course Tools**

Welcome to the online course tools for EDUC 818! Use the sidebar to access your course tools, which are powered by <u>Sakai</u>. Most of the Sakai tools in the sidebar are self-explanatory. To find out when things are due, for example, follow the link to the Schedule. Use the Assignments tool when you are ready to submit an assignment. If you want to chat with fellow students in the course, go to the Chat Room. To see your grades, check the Gradebook.

Complete information about this course is in the Educational Technology Portal, where you will find the following resources:

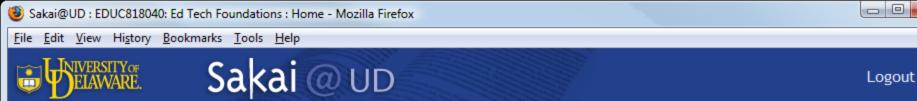
- ♣Introduction
- Formats
- ♣ Course Description
- **→**Textbook
- ▶ Requirements
- Grading Scale
- Logistics
- ♣ Just-In-Time Video

Many students have referred to this course as an E-ticket ride, and I want you to have the same outstanding results. If you ever get stuck during this course and need help from your professor, please do not hesitate to e-mail me by sending a message to <a href="mailto:the@udel.edu">the@udel.edu</a>. I hope you will enjoy the journey!

## Differentiated Instruction

Powered by Dreamweaver and Ajax

- Collapsible menus enable you to design your course content so students can locate material appropriate for their current level of achievement as well as learning style.
- You can create collapsible menus using either
  - (1) Dreamweaver and Ajax; or
  - (2) MS Word and Adobe Acrobat.
- I created my course content using our School of Education's Dreamweaver template.
- Collapsible menus powered by Ajax enable students to explore all of the course content at will.



My Workspace

EDUC885: SAKAI

Options

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#### Educational Technology Course Frameworks

- □ Overview
  - Introduction
  - ◆Logging On to Sakai@UD
  - Grading Scale
  - **Logistics**
  - ♣ Just-In-Time Video
- **⊞** Ed Tech Foundations

#### Resources

- **⊞ Internet Technologies**
- **⊞** Beginning Web Design
- **⊞ CSS Web Design**
- **⊞** ePortfolio Web Design
- **⊞ Ajax Web Design**
- **⊞** Data-Driven Web Design
- **⊞ Multimedia Web Design**
- Sakai Design
- **⊞ Sakai Development**

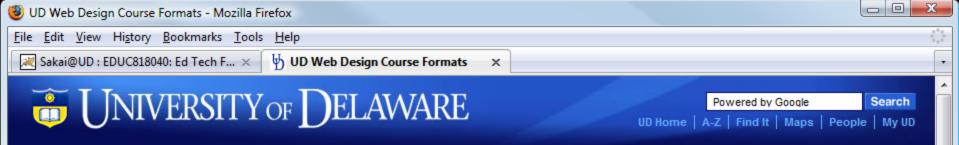
#### **Educational Technology Course Portal**

Welcome to the portal for educational technology courses taught by <u>Professor Fred Hofstetter</u> at the <u>University of Delaware</u>. True to its name, this portal functions as a gateway through which you can access the course descriptions, resources, requirements, tutorials, and videos that help students, teachers, and faculty become empowered to use technology to solve educational problems and improve teaching and learning.

This portal provides access to materials for the following courses:

- EDUC 639: Internet Technologies
- ◆ EDUC 818: Educational Technology Foundations
- ♣ EDUC 885: CSS Web Design
- ➡ EDUC 885: ePortfolio Web Design
- EDUC 885: Ajax Web Design
- EDUC 885: Advanced Web Design
- EDUC 885: Advanced Multimedia Design
- EDUC 885: Data Driven Web Design
- ◆ EDUC 885: Accessibility Web Design
- EDUC 885: Sakai Web Design
- EDUC 885: Sakai Multimedia Design

In addition to these publicly available resources, each one of these courses has password-protected components offered through Sakai@UD. Students who enroll in these courses can <u>log on to Sakai</u>, which is used for course discussions, blogs, podcasts, assignments, grading, and access to materials that cannot be posted on the public Web due to licensing, copyright, or privacy issues.



# **EDUCATION**

#### **Educational Technology** Course Frameworks

- Overview
- ⊞ Ed Tech Foundations
- - Introduction
  - Formats
  - Course Description
  - Textbooks
  - Requirements

#### Resources

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- **⊞** CSS Web Design
- ⊕ ePortfolio Web Design
- ⊕ Ajax Web Design
- Data-Driven Web Design
- Sakai Design
- Sakai Development

#### Web Design Course **Formats**

To accommodate the needs of adult learners, the EDUC 639 and EDUC 885 Web Design courses are offered in several formats

You can enroll in a classroom version that meets weekly on Monday nights at 7 PM during the Fall and Spring semesters, or you can take the courses online in a virtual classroom format. Online students may attend the Monday night session at any time to meet and interact with classroom students in person. Classroom students who encounter scheduling conflicts are permitted to become virtual and attend class online during weeks when you cannot attend class in person.

Regardless of whether EDUC 885 is taken in the classroom or online, all students participate at the course

Web site, which uses cooperative learning strategies to

create a learning community in which you work together to form teams that create effective multimedia Web environments.

During the five-week Winter session, we offer the EDUC 639 and EDUC 885 Web Design courses in a hybrid format that mixes face-to-face meetings on Tuesday and Thursday evenings with online instruction during the rest of the week.

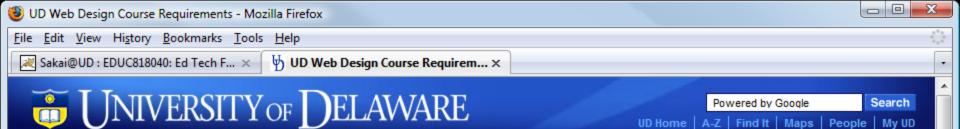
#### **Course Formats**

Web design course formats include:

- Traditional classroom
- Totally online
- Hybrid mix of classroom and online

Courses are offered according to the following schedule:

- · Monday evenings in the Spring. You have the option of attending class at 7 PM in Pearson 007.
- Tuesday and Thursday evenings in Summer. You attend class at 5 PM or 6:30 PM in Pearson 007.
- Monday evenings in the Fall. You have the option of attending class at 7 PM in Pearson
- Tuesday and Thursday evenings in Winter. You attend class at 5 PM or 6:30 PM in Pearson 007.





#### Educational Technology Course Frameworks

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- **⊞ Multimedia Web Design**
- **⊞** Sakai Design
- **Sakai Development**

# Web Design Course Requirements

This course is all about empowering you to create effective Webs. Thus, the course requirements revolve around you and the nature of the Web you want to create.

In the sidebar is a list of the specific assignments and how much they count toward your grade in the course. You can think of these assignments as consisting of three major parts, each of which counts for a third of your grade. The first part is class participation. You create a goal statement and share it with your fellow classmates, with whom you communicate in the course discussion forum as well as in the course Wiki, where you share knowledge and contribute to a knowledge base consisting of cool tools discovered by students while taking this course

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Weighting of Course Assignments

Weight 7%

5%

10%

10%

10%

10%

10%

33%

5%

Assignment

Goal Statement

E-mail Registration

Discussion Forum

Blog Checkpoint #1

Blog Checkpoint #2

Blog Checkpoint #3

Web Design Project

Course Evaluation

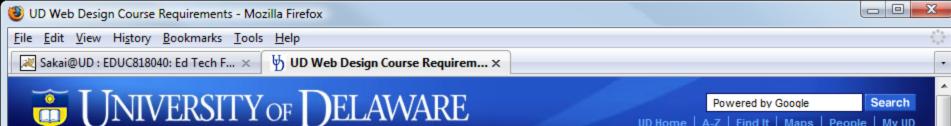
Cool Tool Wiki

#### Assignment #1: Goal Statement

Your first assignment is to state the reasons why you enrolled in this course. Please tell why you decided to take this course and state briefly what you hope to get out of it. If you have only a general idea, go ahead and describe your goals in general terms. If you have more specific goals in mind, please enumerate them. I will use this information to help advise you and guide you through the appropriate course materials.

#### Assignment #2: E-mail Registration

In response to the e-mail registration assignment in your online course environment, you tell your course instructor what is your e-mail address. Yes, there is an e-mail address on file for you here at the University of Delaware, but just in case I need to contact you about something related to this course, I want to make sure I have a good working e-mail address. Being able to reach you when I need to is so important that I am



# **EDUCATION**

#### **Educational Technology** Course Frameworks

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  - Web Page Design
  - How HTML Works
  - Creating a Résumé Page
  - Preparing Images for the Web
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10% Blog Checkpoint #1 10% Blog Checkpoint #2 10% Blog Checkpoint #3 Web Design Project 33% 5% Course Evaluation determined by your final project, which you submit at the end of the course. The rest of your grade is determined by a reflective journal that you keep in a blog, which I will visit three times during the course to

UD Home | A-Z | Find It | Maps | People | My UD

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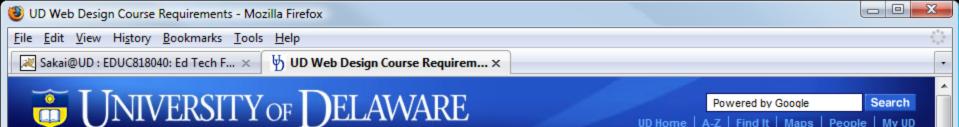
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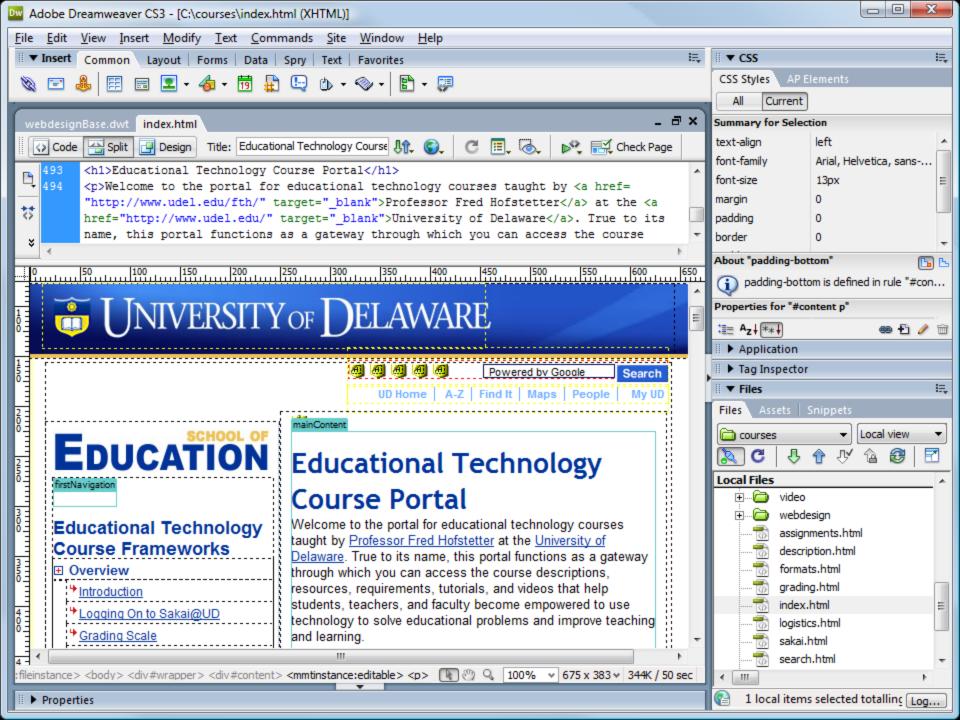
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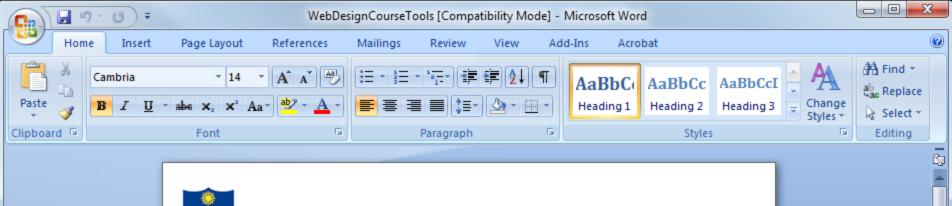
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### Differentiated Instruction

Powered by MS Word and Acrobat

- There is a simpler way to create Sakai content.
- You can use MS Word.
- Organize your course content using Word's heading styles: H1 for chapter headings, H2 for section headings, H3 for subheads.
- Then use the freely downloadable PDF add-in to convert your Word document into a PDF file.
- Automatically, Acrobat creates bookmarks that enable students to navigate your course content through its headings.





#### Web Design Course Tools

Welcome to the online course tools for EDUC 639 and EDUC 885! Use the sidebar to access your course tools, which are powered by <a href="Sakai">Sakai</a>. Most of the Sakai tools in the sidebar are self-explanatory. To find out when things are due, for example, follow the link to the Schedule. Use the Assignments tool when you are ready to submit an assignment. If you want to chat with fellow students in the course, go to the Chat Room. To see your grades, check the <a href="Gradebook">Gradebook</a>.

To reveal a detailed outline of course content, click the bookmark tool; to hide the outline, click the bookmark tool again. The bookmark tool looks like this:

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#### Introduction to the Web Design Portal for EDUC 639 and EDUC 885

EDUC 639 and EDUC 885 are so-called "repeating topics" course numbers in the educational technology master's and doctoral programs at the University of Delaware. As required or with permission of your advisor, students can take EDUC 639 and EDUC 885 multiple times, as long as the topic's title is different each time. EDUC 639 is master's level, and EDUC 885 is doctoral. Specific course titles evolve as the technology progresses and the field of education applies emerging technologies to improve teaching and learning. Course titles that are currently being offered include:

- CSS Web Design
- gPortfolio Web Design
- Ajax Web Design
- Advanced Web Design
- Advanced Multimedia Design
- Data Driven Web Design

In general, master's students should enroll in EDUC 639, and doctoral students take EDUC 885. Master's students who have taken three technology courses may also enroll in EDUC 885. From time to time, depending on the titles being offered and the needs of

specific students, an advisor may grant permission for a doctoral student to take FDLIC 639.



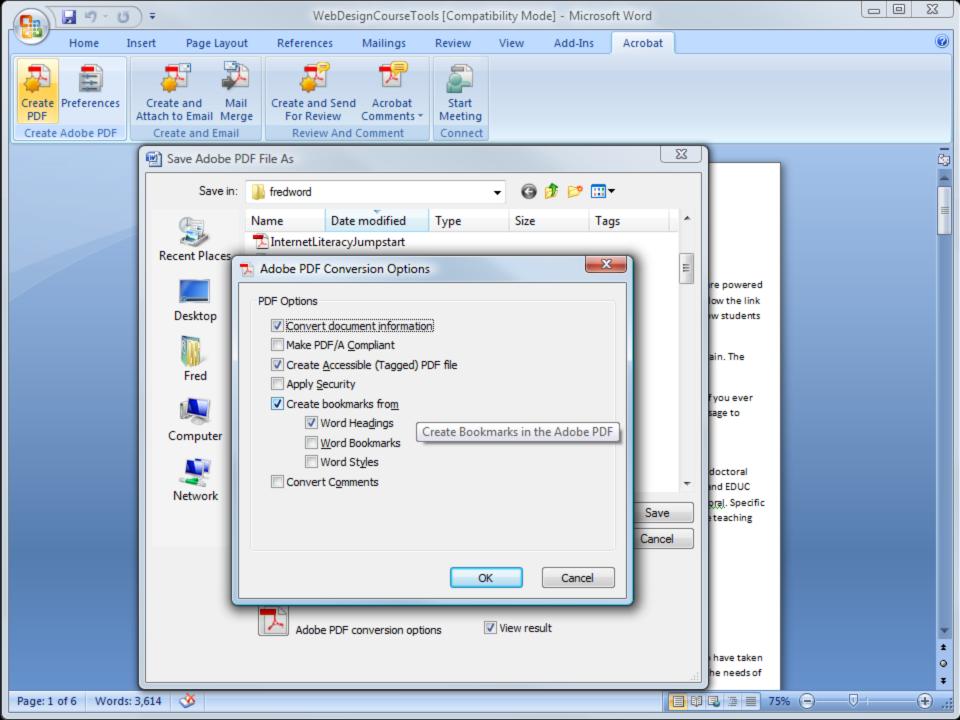


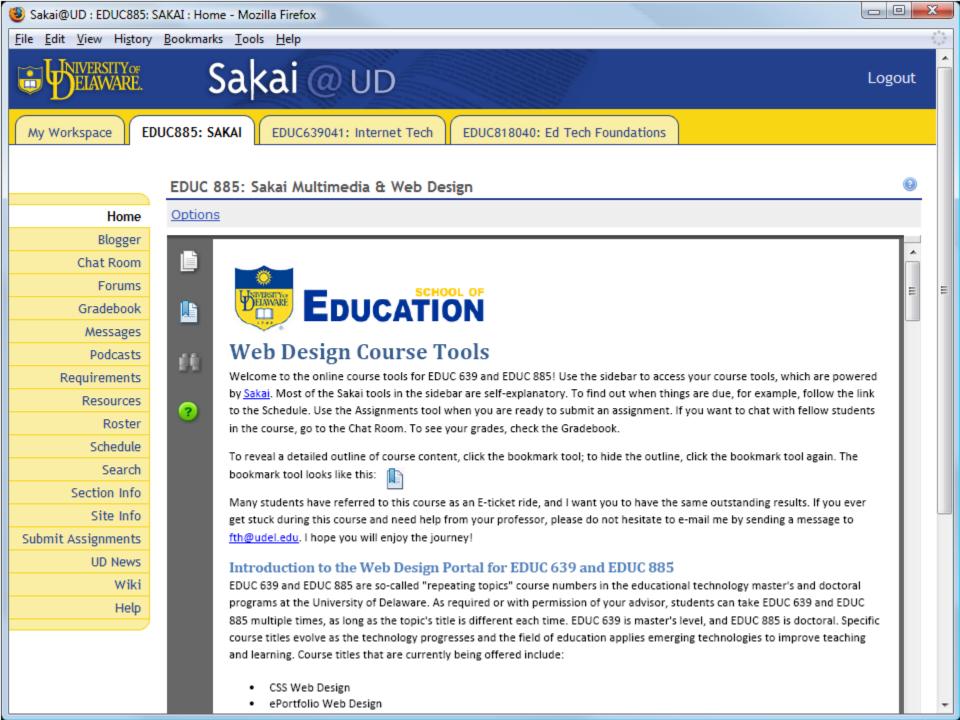


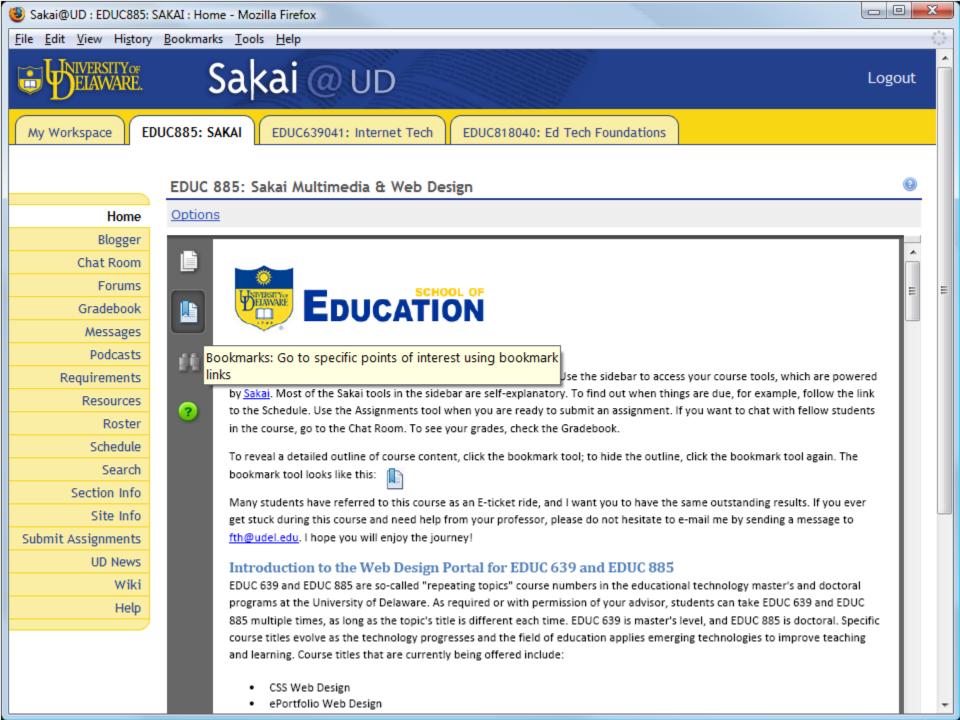
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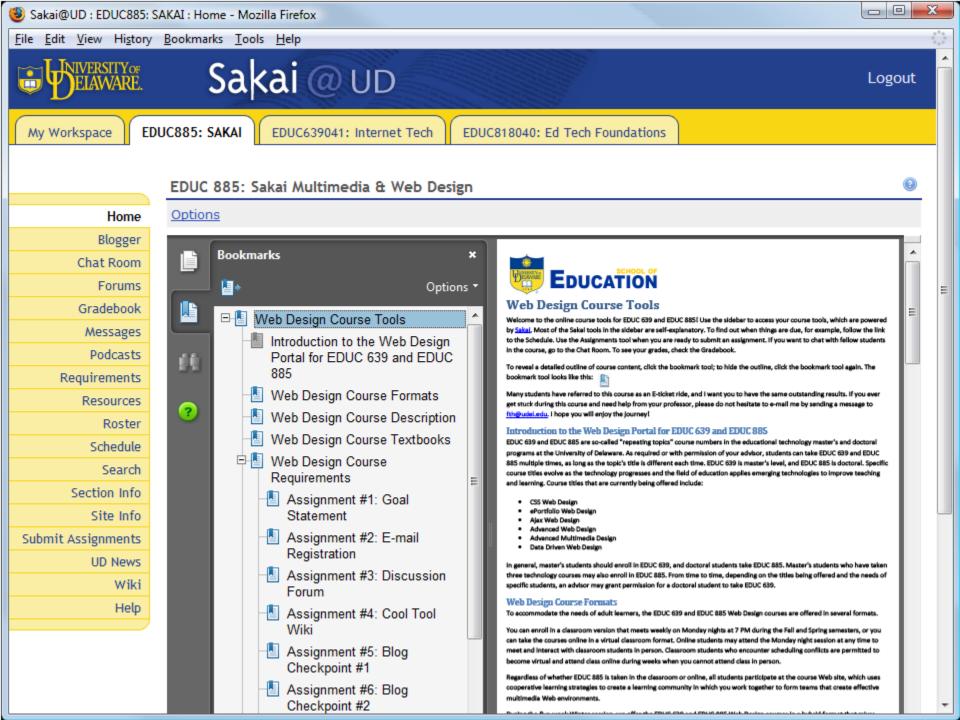
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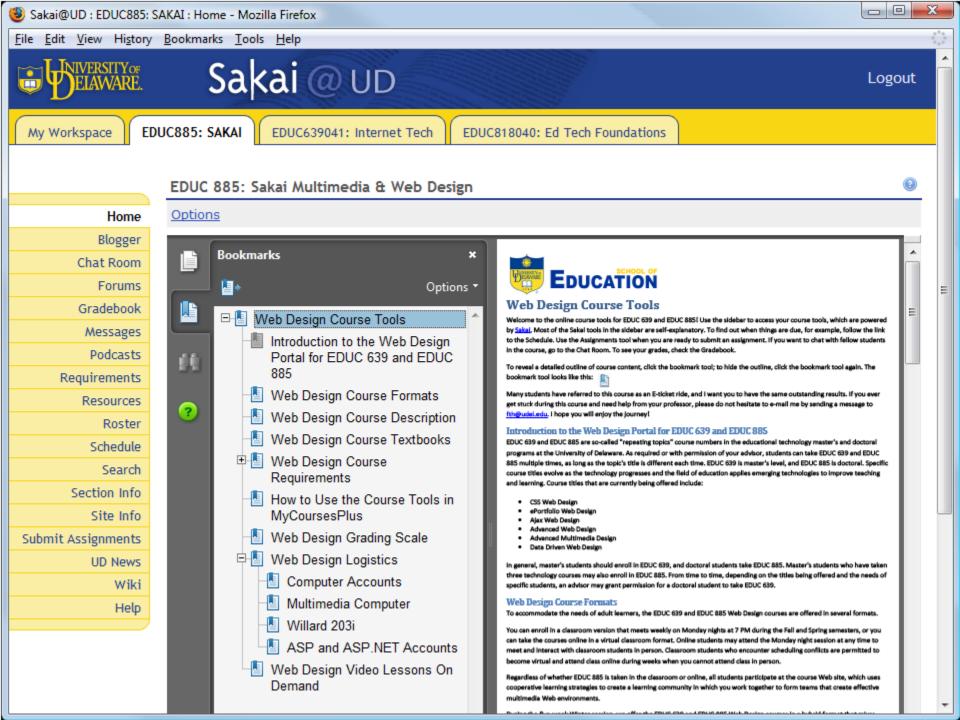
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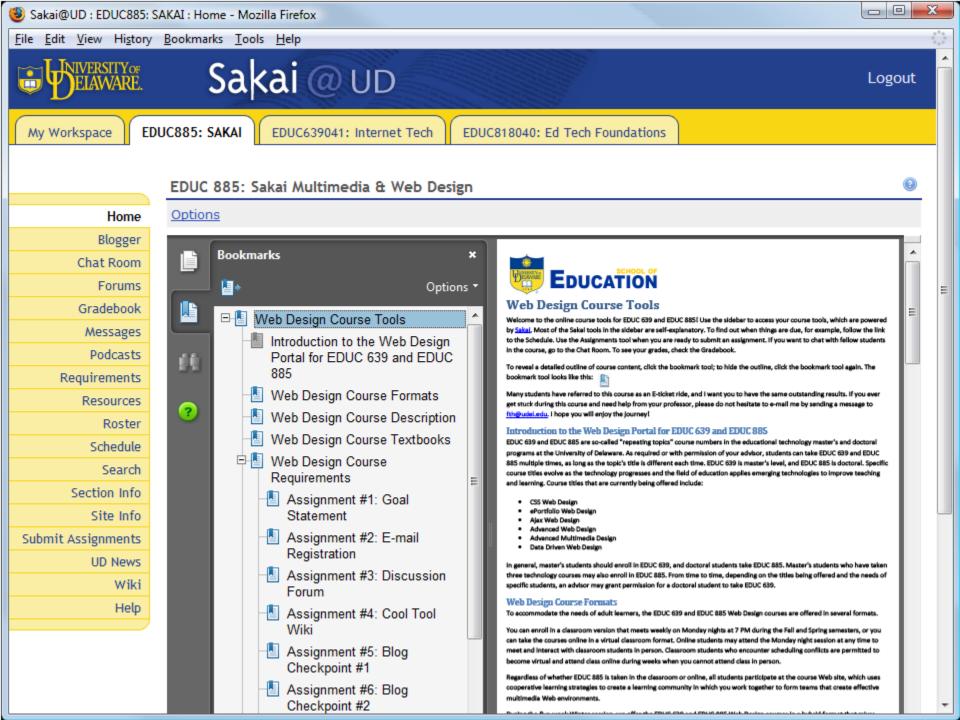


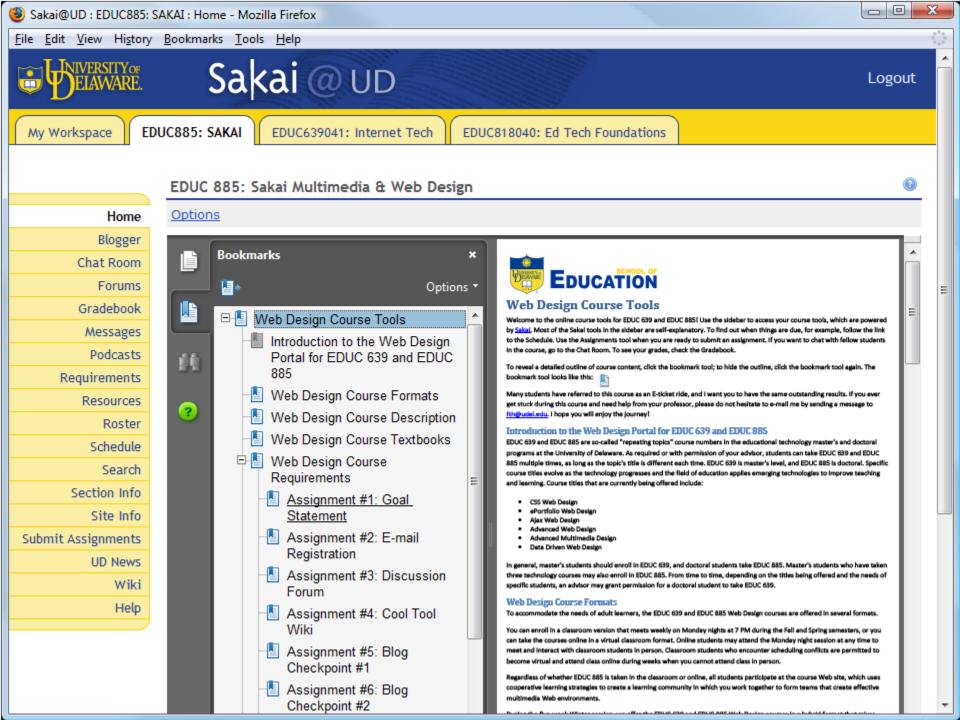


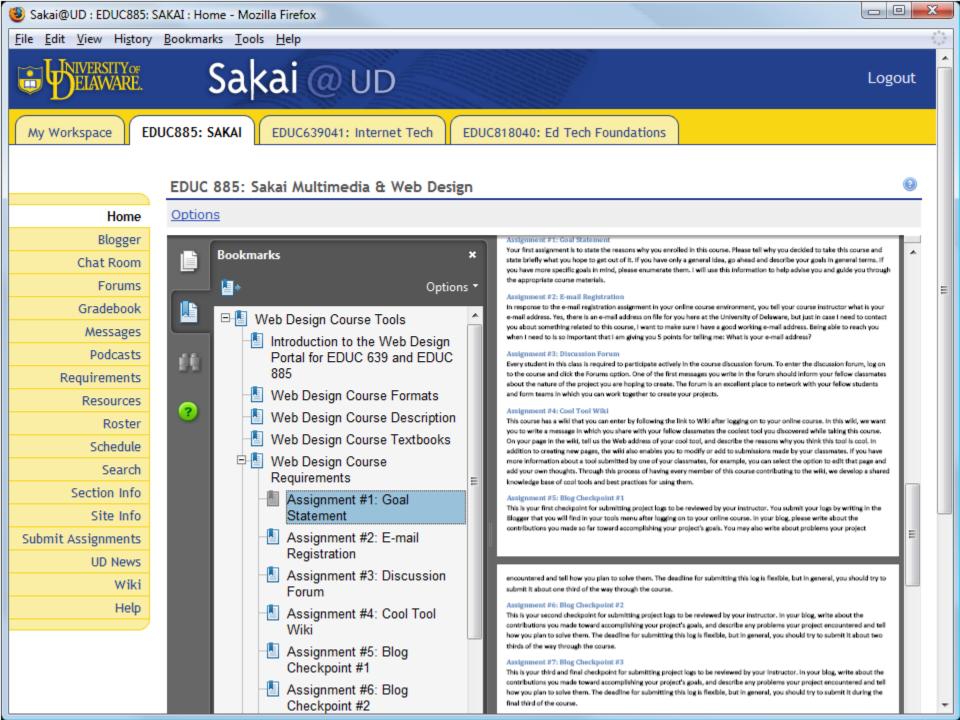


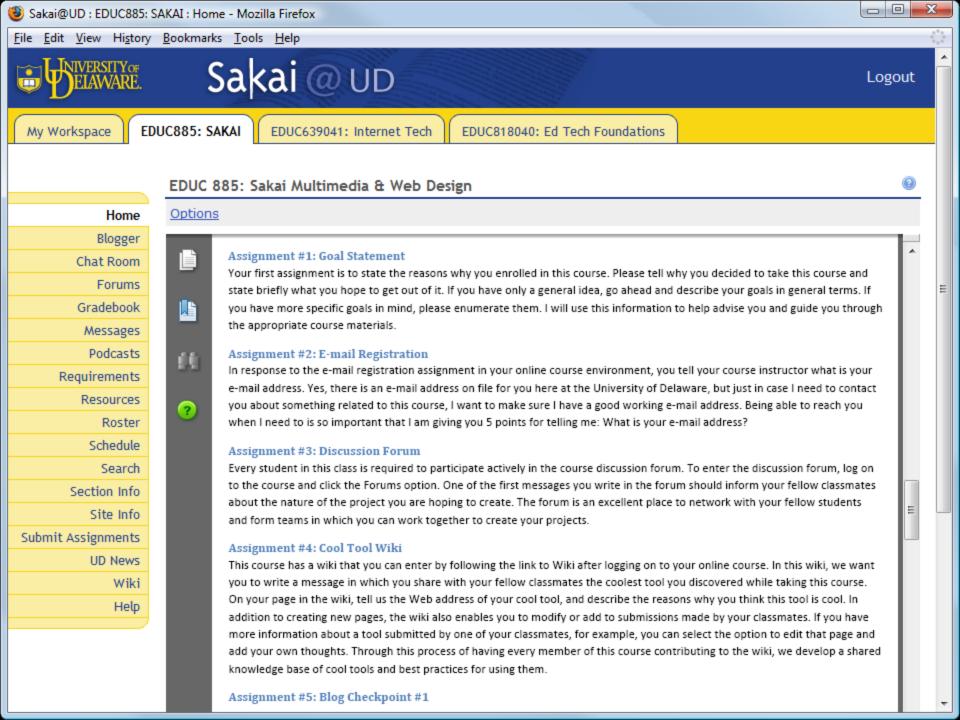










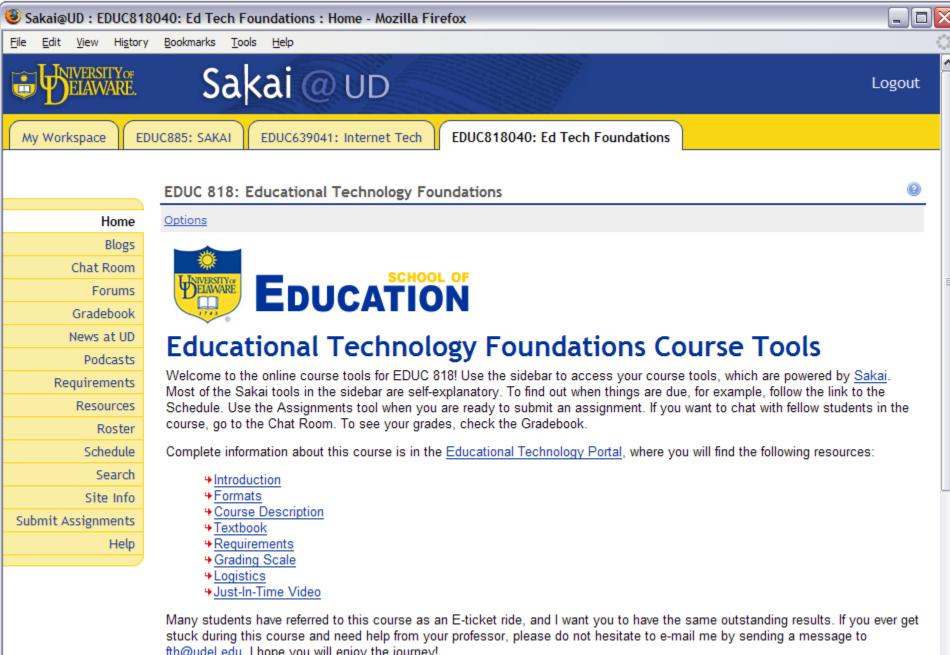


# Engaging Students In the Zone

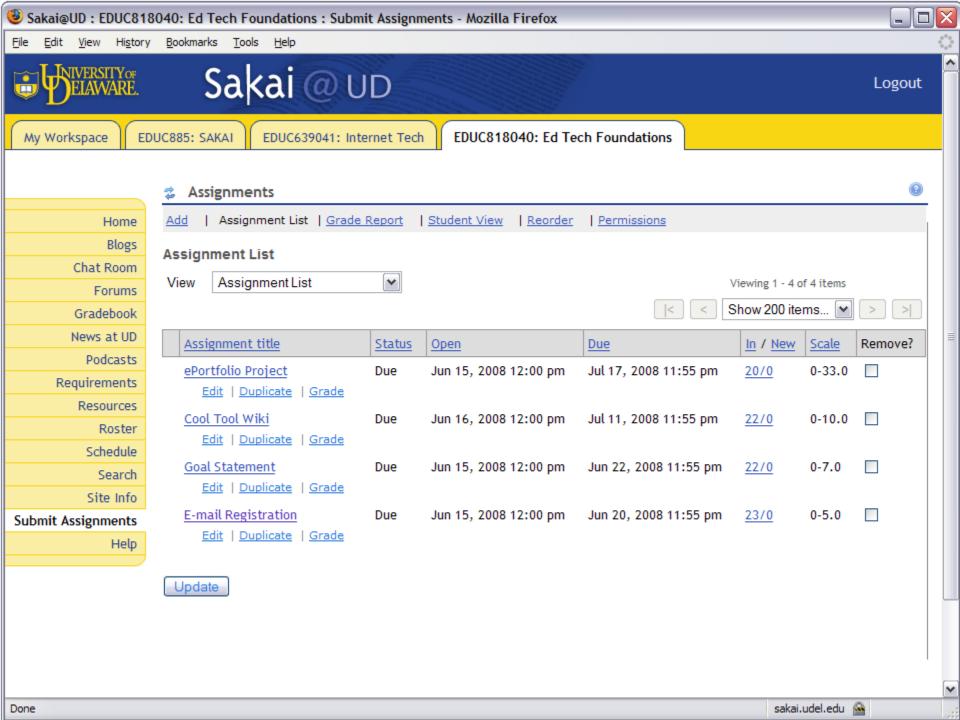
Sakai Supports Key Principles of Online Learning

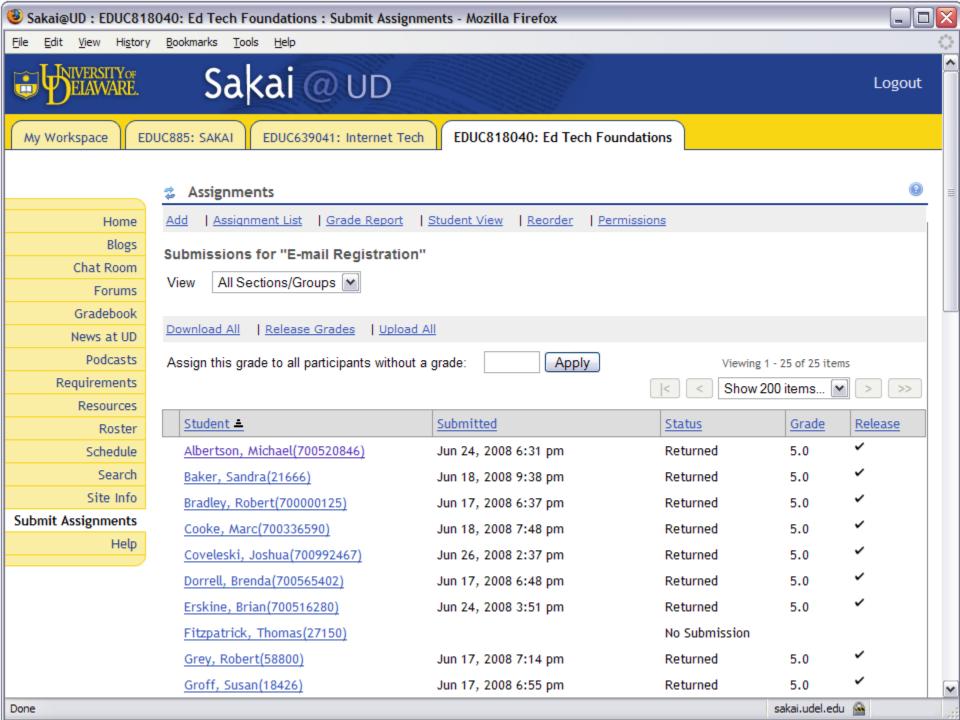
# Engaging Your Students Early

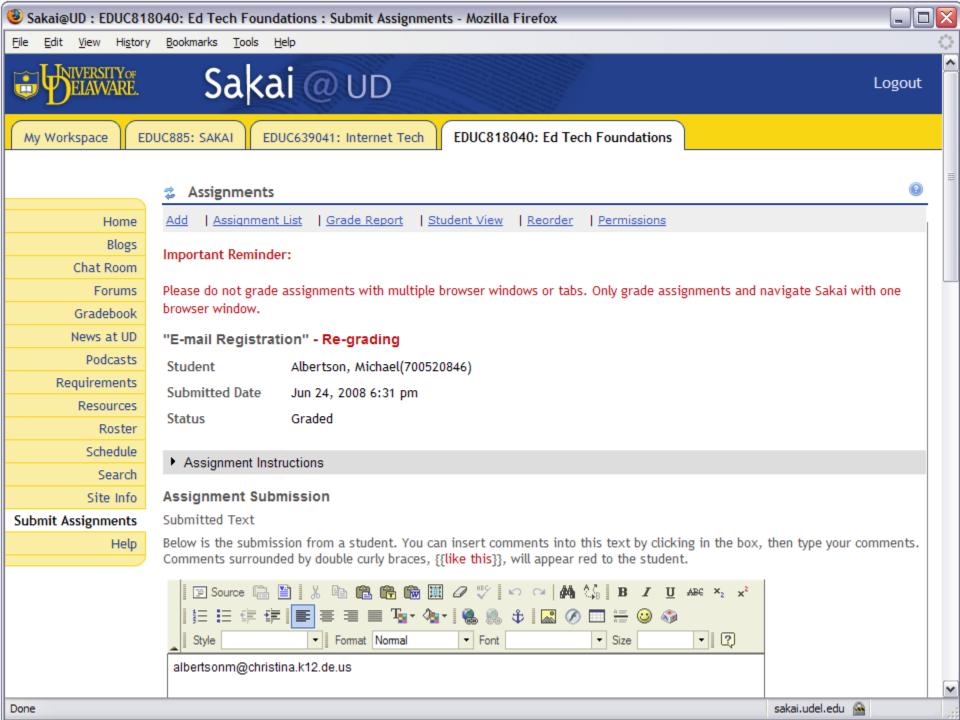
- In online learning, it is important to engage students early in the course.
- This creates a dynamic conversational framework that establishes an empathetic bond (Holmberg, 2003) among students and professor.
- I create this bond by engaging students early in the course through assignments that get students accustomed to interacting with me.

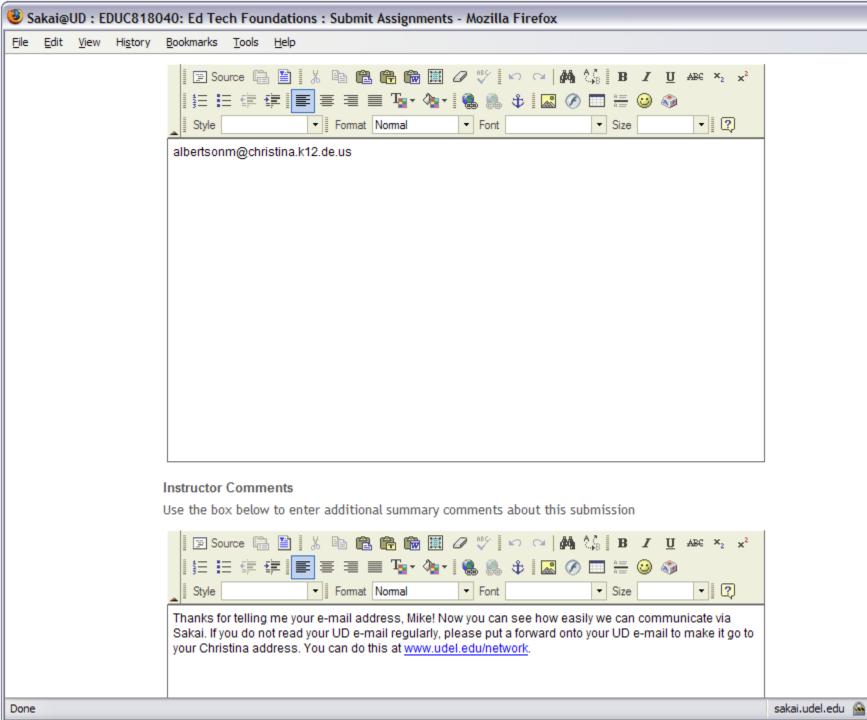


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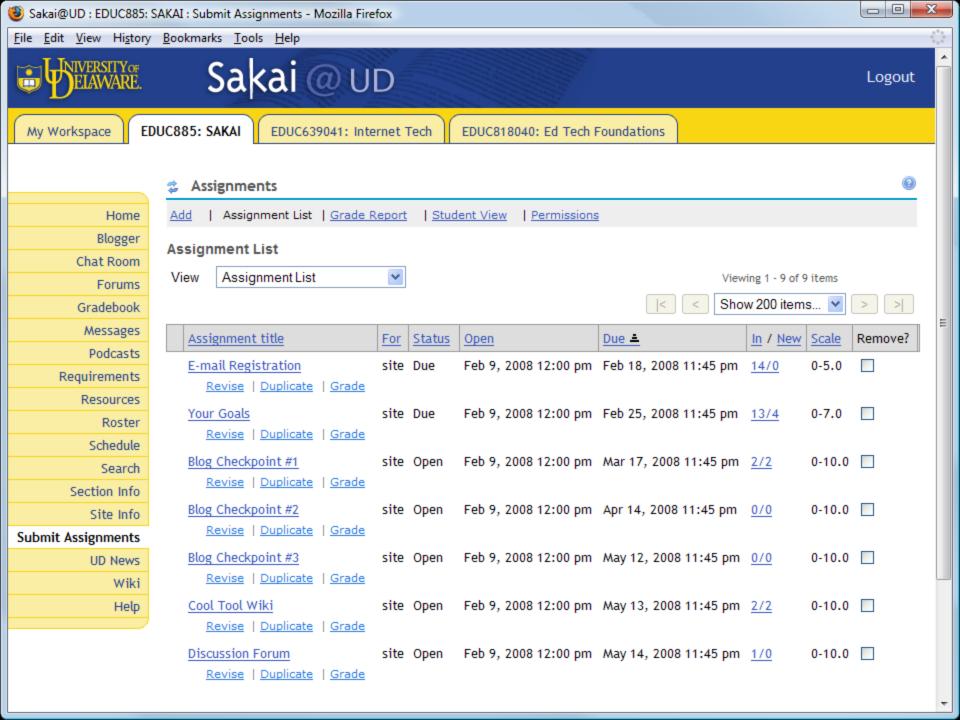


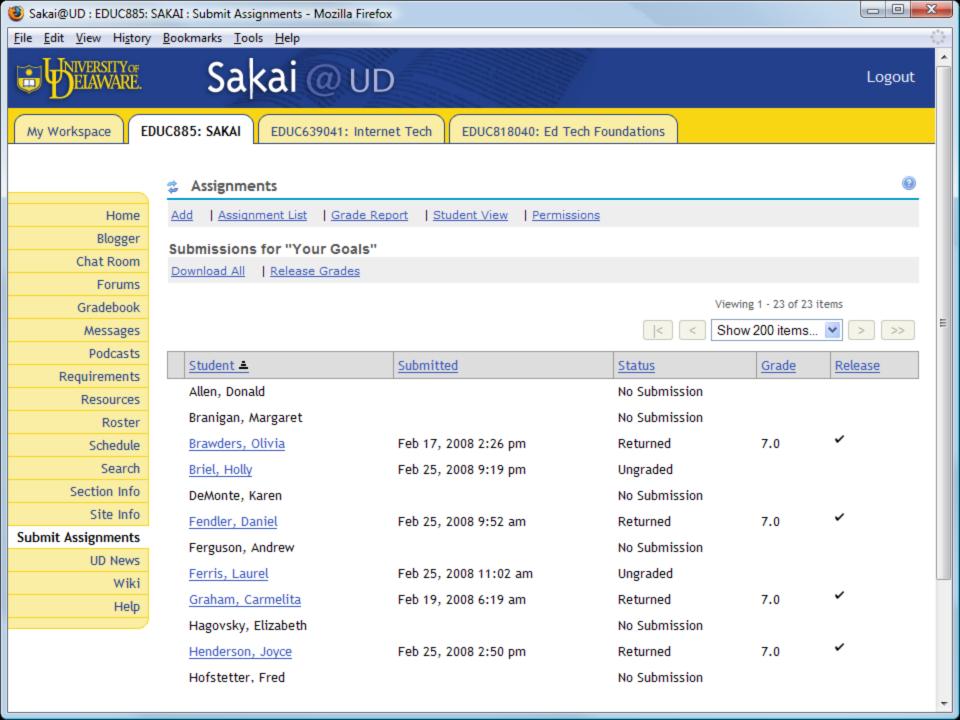
### Constructing Goals

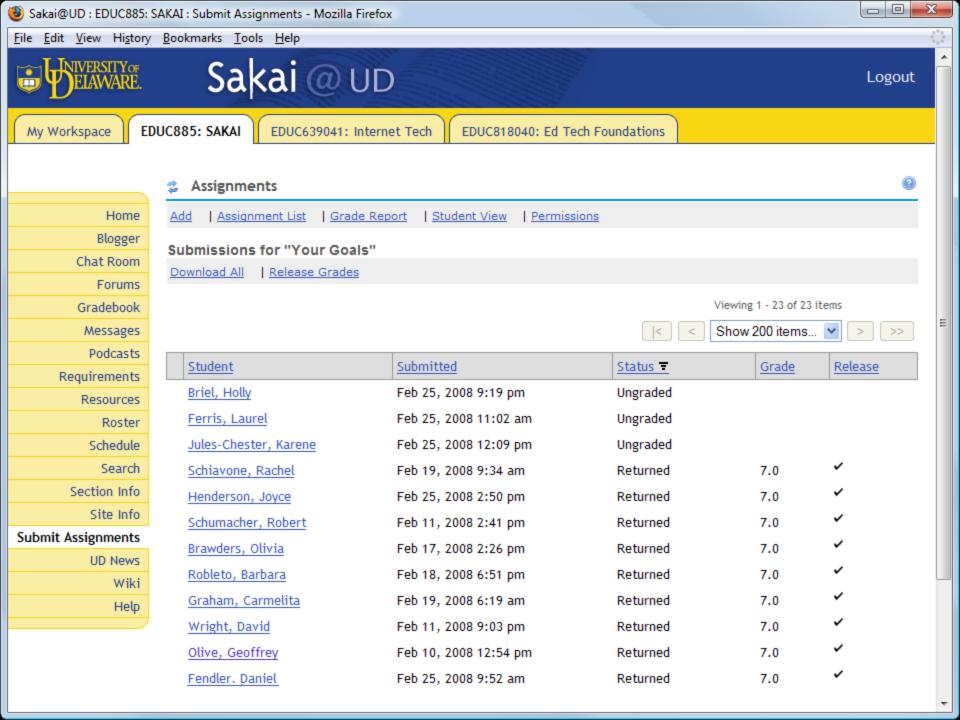
- The innate human desire to develop competence is an important factor in motivating people to learn (National Research Council, 2000, p. 60).
- In one of the early assignments, I work with my students to construct their goals, which are performance based.
- Having students articulate their goals early in the course and hone them dialogically creates a bond that the professor later uses to scaffold students when they begin encountering difficulty.

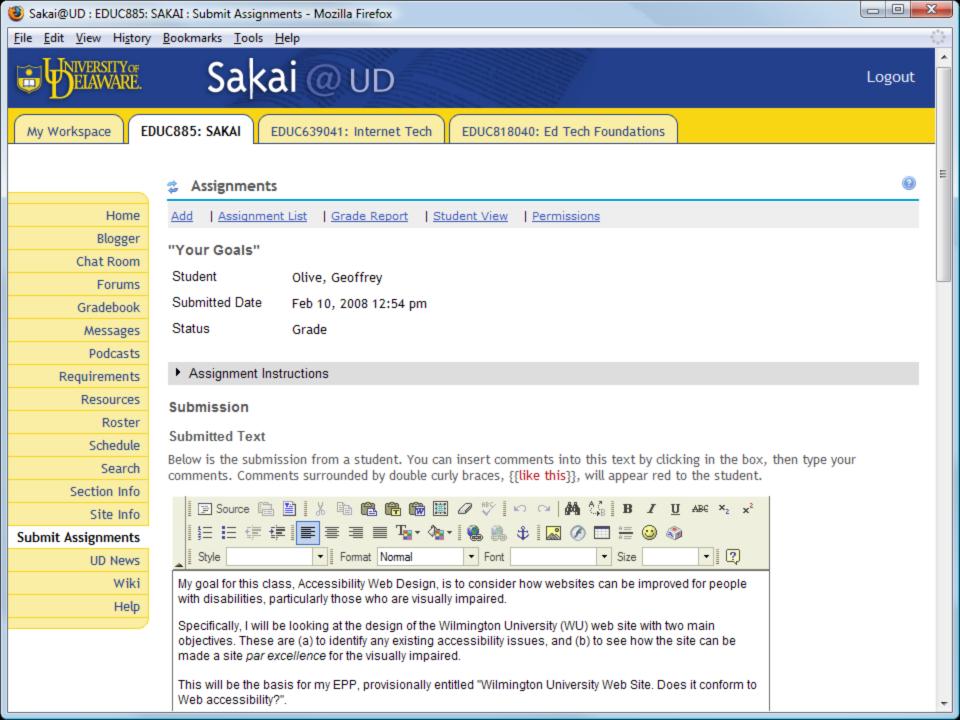
### Identifying the Zone

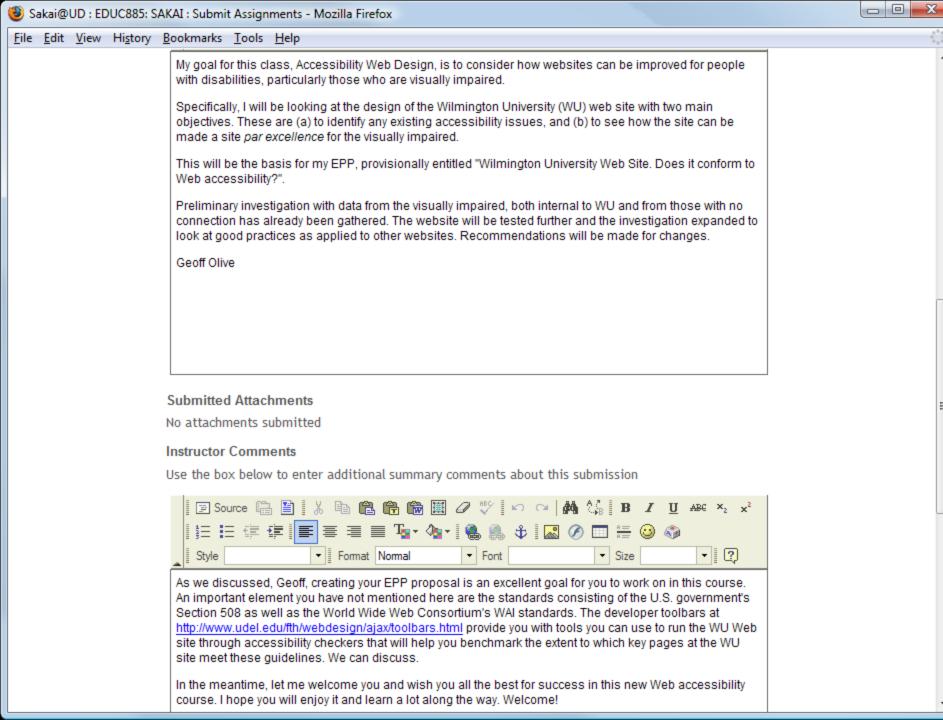
- Later in the course, it is inevitable that the students will encounter difficulty, hopefully not with Sakai, but probably with more advanced course content.
- When this happens, the students enter an educational space that the great Russian psychologist Vygotsky (1978, p. 86) called the Zone of Proximal Development; I simply call it the Zone.
- It is in the Zone that you can use the Sakai coaching protocol to help students when they encounter difficulty.
- Coaching students in their Zone is the most important principle of e-learning, and I was happy to discover that Sakai supports it extremely well.

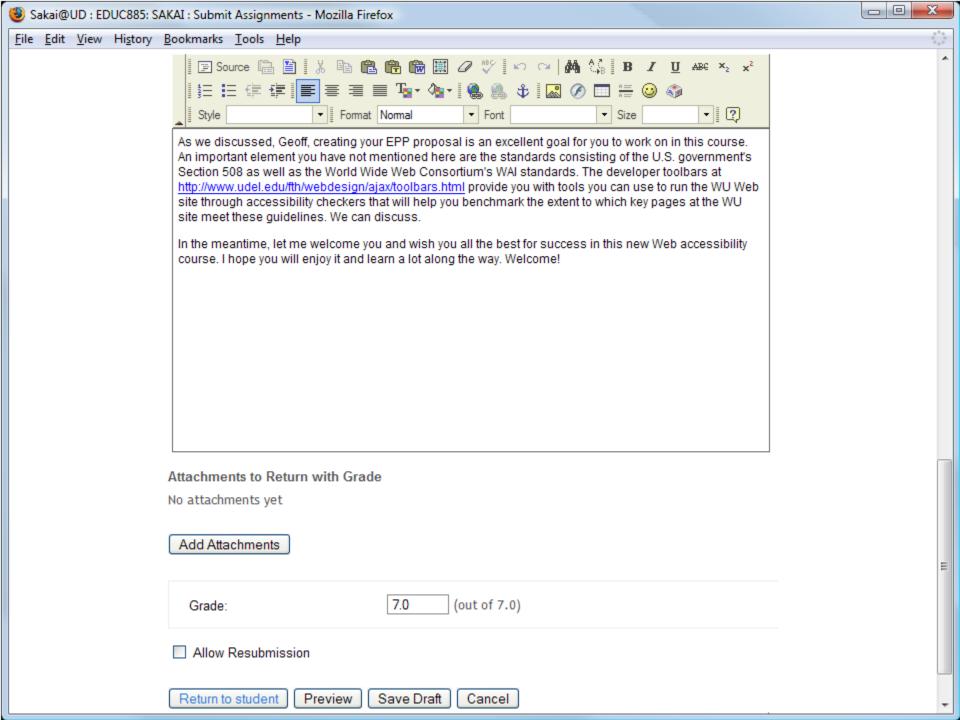








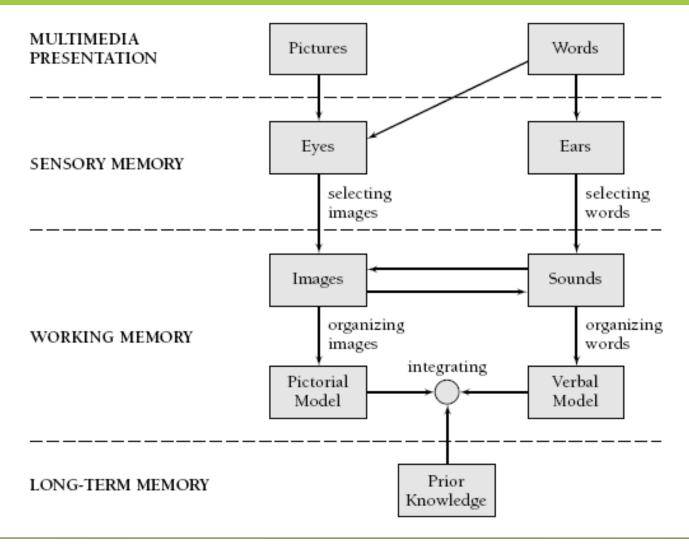




## Multimedia Learning

How the Principles of Multimedia Learning Inform the Design of Course Content

### Multimedia Learning Theory



### Multimedia Learning Principles

Principle	Effect on Learning	
1. Multimedia	Deeper learning from words and pictures than words alone	
2. Contiguity	Deeper learning from presenting words and pictures simultaneously rather than successively	
3. Coherence	Deeper learning when extraneous words, sounds, or pictures are excluded rather than included	
4. Modality	Deeper learning when words are presented as narration rather than as on-screen text	
5. Redundancy	Deeper learning when words are presented as narration rather than as both narration and on-screen text	
6. Personalization	Deeper learning when words are presented in conversational style rather than formal style	
7. Segmentation	Deeper learning when complex lessons are presented in smaller parts	
8. Pretraining	Deeper learning when key terms are explained in advance	

Source: Clark & Mayer (2006, p. 386), summarized.

### Multimedia Research Results

Cognitive Principle	Effect Size	Studies Showing This Effect
1. Multimedia	1.50	9 of 9
2. Contiguity	1.11	8 of 8
3. Coherence	1.32	11 of 12
4. Modality	0.97	21 of 21
5. Redundancy	0.69	10 of 10
6. Personalization	1.30	10 of 10
7. Segmentation	0.98	3 of 3
8. Pretraining	1.30	7 of 7

### Just-In-Time Video

- Key to my instructional strategy is just-in-time video that students can view to have my lectures onscreen just when you need them.
- I create these videos with Camtasia Studio and follow Mayer's principles to make them effective.
- By balancing content across visual and auditory channels, I observe Mayer's (2001) modality principle, and by organizing the videos into small clips, I follow the segmenting principle (Clark & Mayer, 2008, p. 183).

## Camtasia Workflow

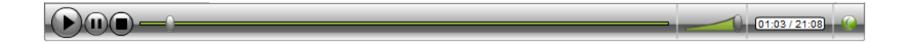
Creating Just-In-Time Videos with Camtasia Studio

### Camtasia Workflow

- The next few slides step you through the process of creating an instructional video with Camtasia.
- This is the process I have evolved over the past few years based on fairly extensive use of Camtasia.
- I am always open to learning better ways of doing things, however, so if you know of a better way, please let me know!

### Storyboard

- You begin by planning your video sequence. Video professionals call this storyboarding.
- I create my storyboards with PowerPoint.
- Because the Camtasia player has a green skin, I created a PowerPoint theme based on that same shade of green.



### Record a Slide with Narration

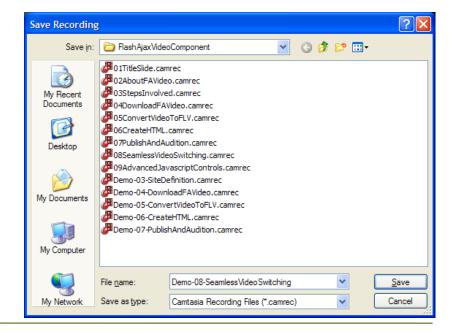
- Use Camtasia to make the PowerPoint window be what gets recorded.
- It works best if you set the window to 1024 by 768.
- Use the Camtasia Recorder to record the slide with your narration.

 Make sure your microphone gain is turned way up, but not so high as to distort.



### Review the Recorded Slide

- After you record something, Camtasia provides a playback window that lets you review it.
- You can delete the recording if you do not like it, or you can save it for future use.
- When I save a clip, I begin the filename with a number, so the file manager will display my clips in sequence.

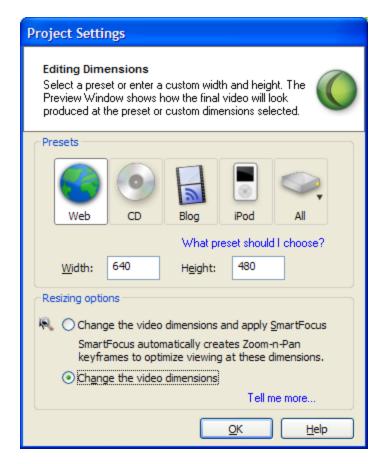


#### Record a Demo with Narration

- Use Camtasia to make the demonstration window be what gets recorded.
- It works best if you set the window to 1024 by 768.
- Record the slide with your narration.
- Save it.
- Edit out any unwanted audio pauses or glitches.
- Save it.

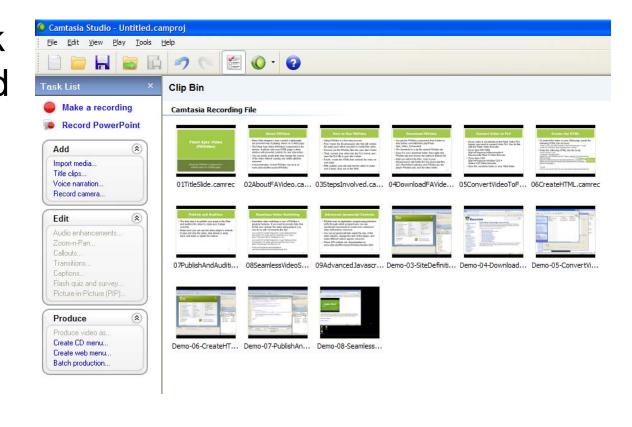
#### Insert Slides into Camtasia

- When you begin editing your production, Camtasia will ask about your settings.
- If you are producing for the Web, I recommend 640 x 480.
- I do not recommend automatic Smart Focus because I find it more efficient creating the zooms by hand.



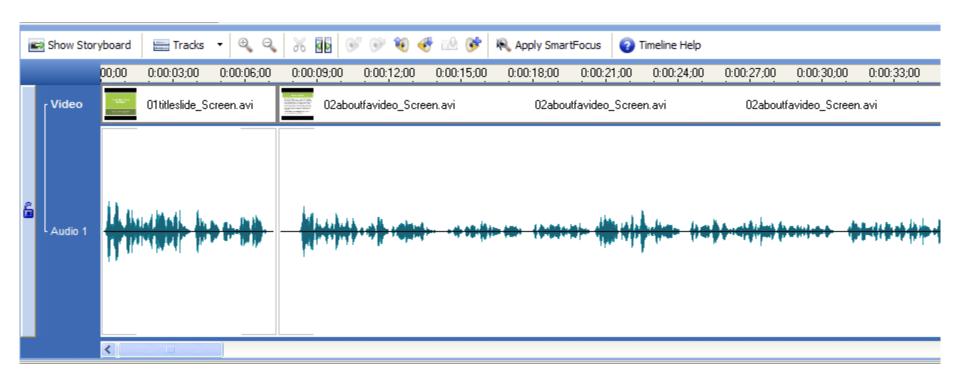
### Using the Clip Bin

 If you right-click the Clip Bin and choose Import Media, you can import all of the clips you created for use in this production.



### Delete Pauses and Glitches

 On the timeline, you can delete all the pauses and glitches in your production. The timeline's "zoom in" and "zoom out" features are very helpful here.



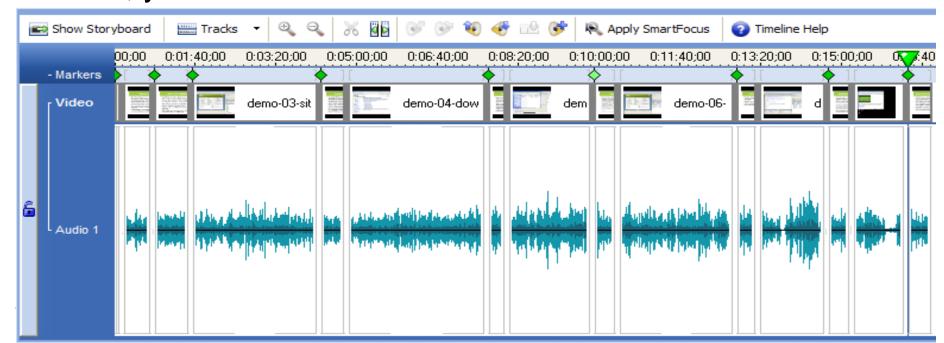
### Add Transitions

- The transitions I found to work best are:
  - 1. The gradient wipe, which I put before each slide.
  - 2. The wheel, which I put before each demonstration.



### Create Markers

- Markers create a sidebar that users can click to jump to different parts of your video.
- Use markers when you have a complex, multi-part video.
- If you are creating a simple screen recording, on the other hand, you will not need markers.



### Create Pans and Zooms

- Pans and Zooms enable you to focus on the part of the screen to which you want to draw the viewer's attention.
- Zooms are especially helpful when the text is small and you want to make it more readable.
- It helps to pre-arrange the window positions to make any popout windows appear within the frame of the zoom you have onscreen.

Local view

Site - soeWebSite (C:\soeWebSite)

000 0000



### Camtasia Zoom

- As noted by Clark & Mayer (2008, p. 38), "our cognitive systems have limited capacity. Since there are too many sources of information competing for this limited capacity, the learner must select those that best match his or her goals."
- Through judicious use of Camtasia's zoom feature, you can help learners attend to important parts of the lesson.

# Sakai Podcasting

Reducing Transactional Distance by Reaching 21st Century Students On Their iPods

### Sakai Podcasting

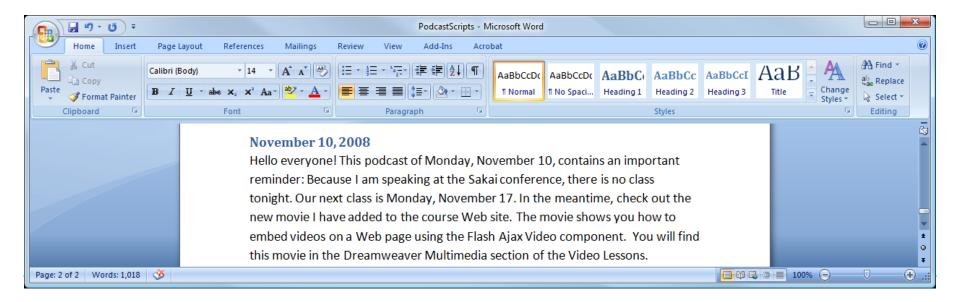
- As identified by Michael Moore (1993), transactional distance is the psychological gap created by communication latency in distance learning environments.
- For the younger generation of students who live on their cell phones and iPods, Sakai Podcasting is a powerful way of reducing transactional distance.
- Throughout my course, as I make new videos and add them to the online collection, I announce the new titles via Sakai Podcasting.
- Students do not need an iPod, but if they have one, their Sakai professor can be on it.

### Podcasting Software

- We create our Sakai podcasts with open-source software, including:
  - Audacity, which is freely downloadable from http://audacity.sourceforge.net;
  - 2. Lame, an MP3 encoder that you download freely from <a href="http://audacity.sourceforge.net/download/lame">http://audacity.sourceforge.net/download/lame</a>; and
  - 3. Sakai, in which you use the Podcasting tool to upload the recording to your course feed.
- Students can subscribe to your course feed from iTunes or from the latest versions of Internet Explorer, Firefox, and Safari. Thus, you can tune in to the feed without necessarily having an iPod.

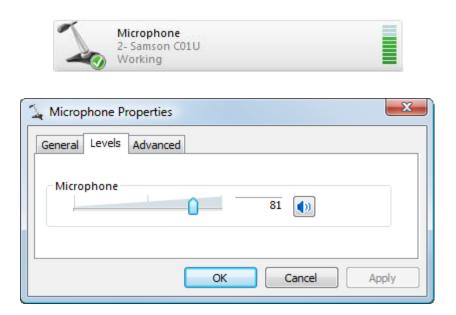
### Scripting Your Narrative

- It saves considerable time if you script your narrative prior to recording it.
- Following Mayer's personalization principle, avoid third person and instead use first and second person in your script.



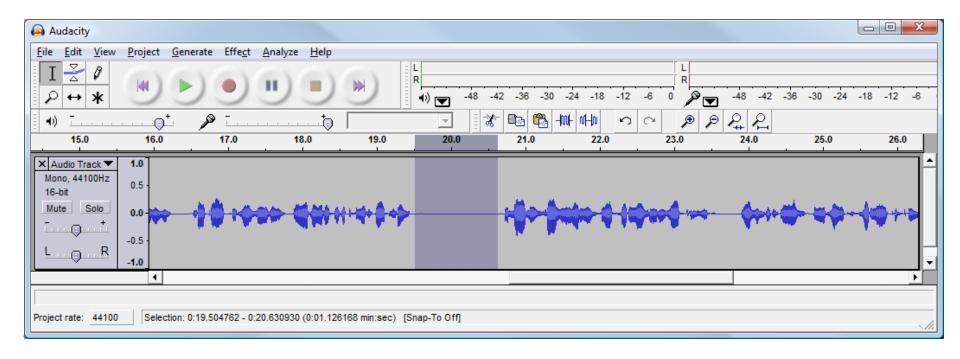
### Recording Your Narrative

 When you record your narrative, make sure your audio record level is turned way up, but not so high as to distort, and keep your mouth close to the mic to create presence.



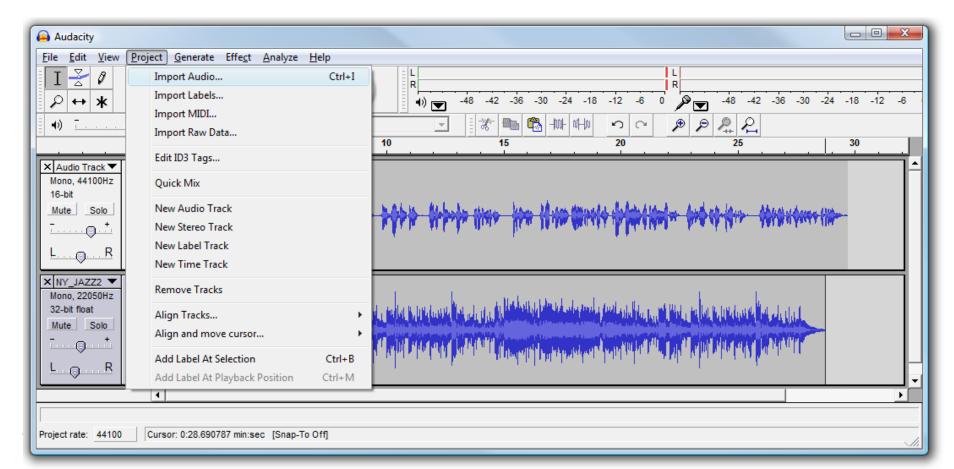
### Delete Glitches

- Audacity makes it easy to delete glitches.
- Remove unwanted silence from the beginning and end of the clip; this is called trimming.



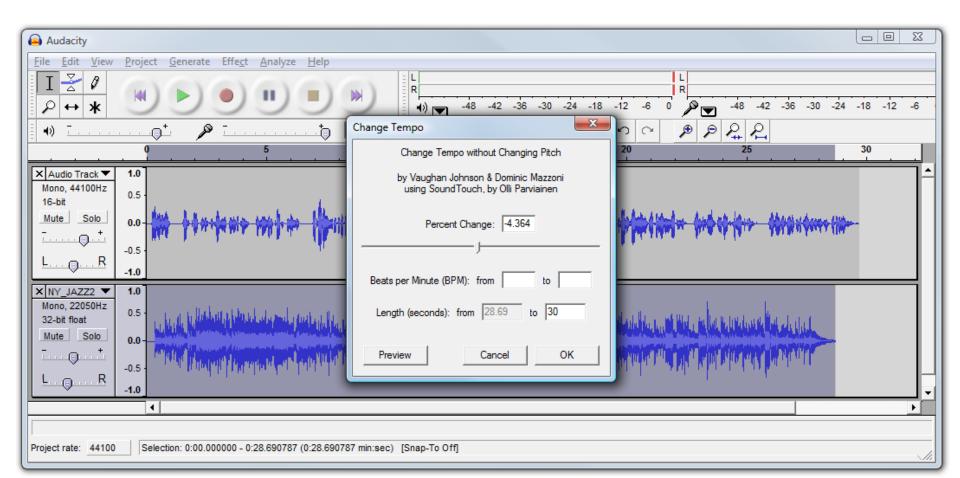
#### Mix In Some Music

Musical backgrounds add a professional quality to your podcast. Audacity makes it easy to import audio.



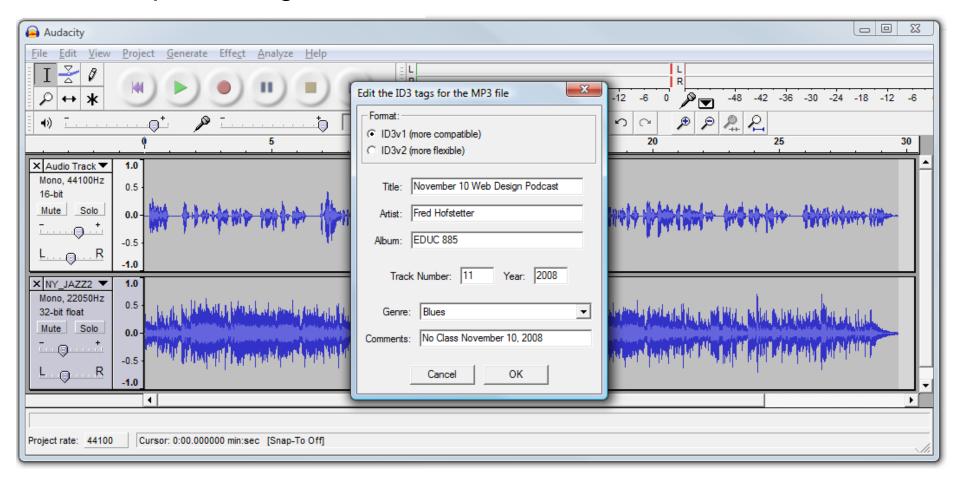
### Adjust the Length

If the length of the music does not quite match that of your narration, you can use Audacity to lengthen or shorten the tracks without changing their pitch.



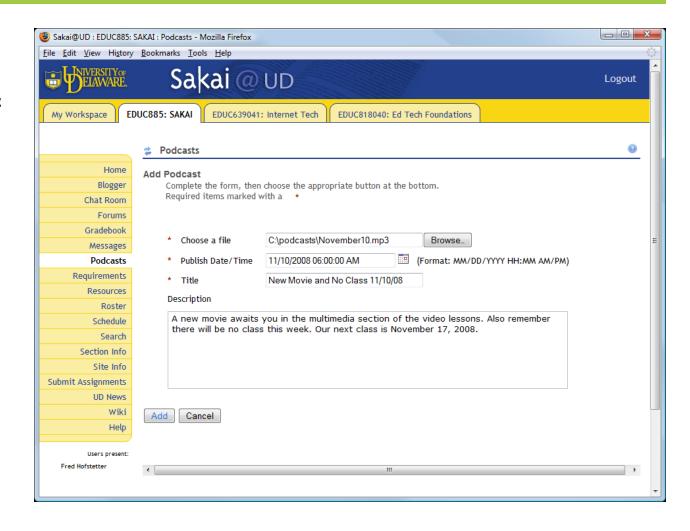
### Export the MP3

You export the recording as an MP3 file, which is the format used in audio podcasting.



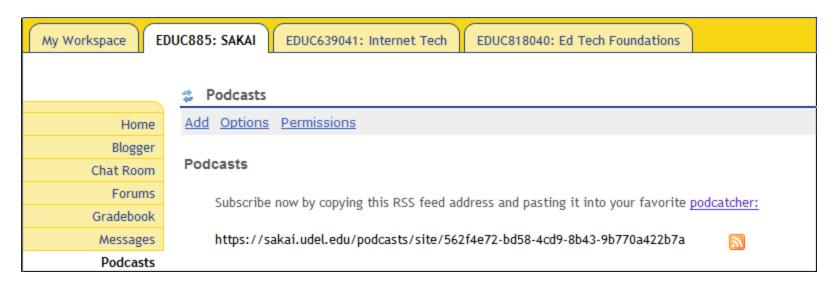
#### Use Sakai to Podcast the MP3

- Sakai steps you through the process of uploading the MP3 file to your podcast.
- Behind the scenes, Sakai creates the RSS file that defines your podcast.

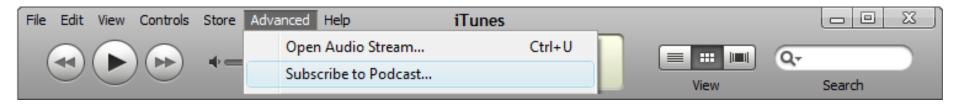


#### Receiving a Sakai Podcast

Sakai tells you the address of the podcast here:



To tune in from iTunes, pull down the Advanced menu, and click Subscribe to Podcast:

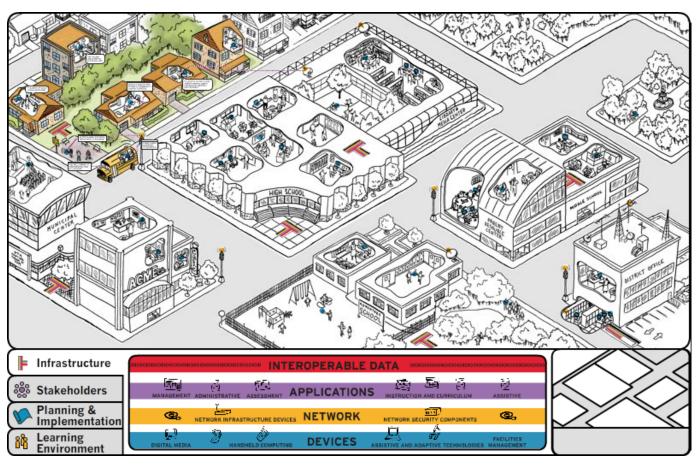


# Knowledge Building

Using Sakai's Web 2.0 Tools to Create a Shared Knowledge Building Environment

#### School 2.0

"In School 2.0, the learning ecosystem includes not just a school building, but also the combination of home, school, and community that collaborate to bring the wider world into day-today instruction and provide a rich array of learning opportunities."



www.school2-0.org

Office of Educational Technology, U.S. Department of Education

### Collaboration Principle

- Reflecting on his invention of the virtual high school (VHS) concept, Tinker (2005, p. 413) concluded that "Without collaboration, the social value of networking is lost and online courses become simply extensions of existing course formats."
- Riel (2005, p. 315-316) identified three overlapping ways in which online education should be community based: (1) collaborative learning in the context of a student cadre, (2) theoretical learning through community experiences, and (3) transformational learning in one's community of practice.

# Communal Knowledge Building

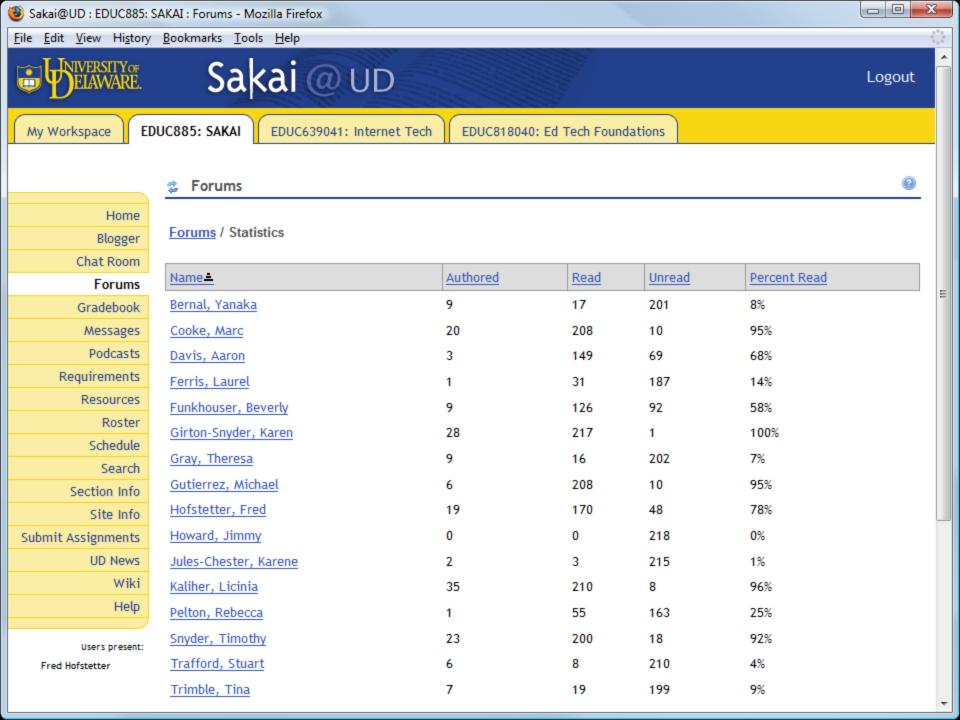
- As Scardamalia and Bereiter (2006, p. 99) teach us, "People are not honored for what is in their minds but for the contributions they make to the organization's or the community's knowledge."
- Sakai's Wiki tool is a powerful tool for communal knowledge building.
- If it could be searched and tagged, the Sakai wiki would be even more powerful.

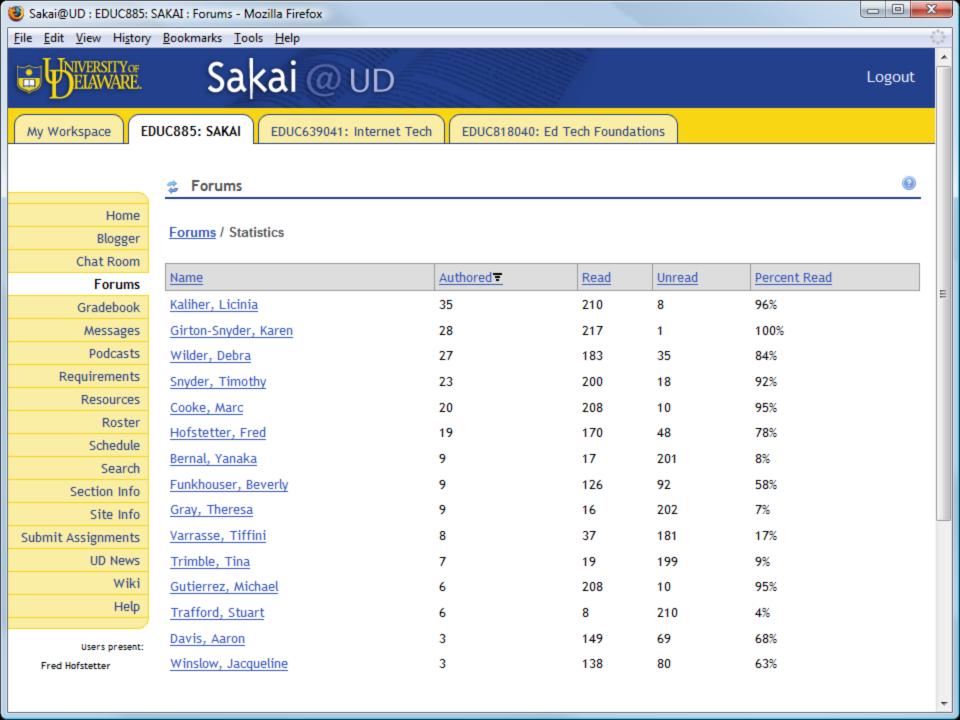
#### Sakai KBE Tools

- Sakai contains several tools that can be used to form communities and build shared knowledge:
  - 1. Forums provide multi-threaded asynchronous discussion space;
  - Blogs enable students to journal their activities, reflect on their progress, and, if enabled, let other students comment on their work.
  - 3. Chat rooms let students meet synchronously, although the Sakai chats are perpetually ongoing, so you can participate in them asynchronously as well.
  - 4. The Wiki lets participants create knowledge on pages that are communally shared, with an edit trail keeping track of who changed what when.

#### Forum Statistics

- I like how the forum statistics enable you to see each student's level of participation.
- This is particularly helpful when forum participation is a requirement in the course.
- You can even grade a message in a forum if you have created an assignment that requires participation in a forum.
- I like how you can sort the forum statistics by column categories.





#### Wiki

- Social opportunity is important in motivating people to learn (National Research Council, 2000, p. 61).
- I used the Sakai Wiki to create a "cool tool" assignment in which I have the students (1) identify the tool they consider most useful and (2) write an essay explaining why they think it's cool.
- Through the Wiki, students explore each other's tools and make discoveries richer than anything I could design on my own.
- The Sakai Wiki addresses Romiszowski's (2005, p. 337) criticism that in spite of what is known about creating knowledge building environments, IMS vendors have done little to build these kinds of cooperative learning protocols into their products.

### Chat Room Searching

- Students go into the chat room to add a synchronous dimension to their online course.
- I like how the search tool includes chat room transcripts.
- The tags let you explore other info related to what was found in the search.
- Students like how the size of the tag represents how frequently it appears in the search results.
   This is powerful indeed for identifying themes in your course discussions.

# Assessment

Sakai Supports Multiple Assessment Strategies

### Multiple Assessment Strategies

- When a course is online, it is especially important for students to have a clear picture of how they will be evaluated.
- Sakai supports multiple forms of assessment that enable you to evaluate students on goal setting, individual performance, class participation, and performance outcomes.

#### Assessment Tools

- The assignment tool provides for formative assessment by enabling faculty to provide feedback and give students a chance to resubmit their work and earn a higher grade.
- The quizzing tool allows for self-tests and feedback so students can self-assess their learning.
- The testing tools have both formative and summative assessment.
- Blog Wow! is well-suited for gathering student self-reflective data and faculty or peer feedback.
- Sakai provides logs which enable faculty to know how long students work on tasks or which resources they access.



# Learning Outcomes

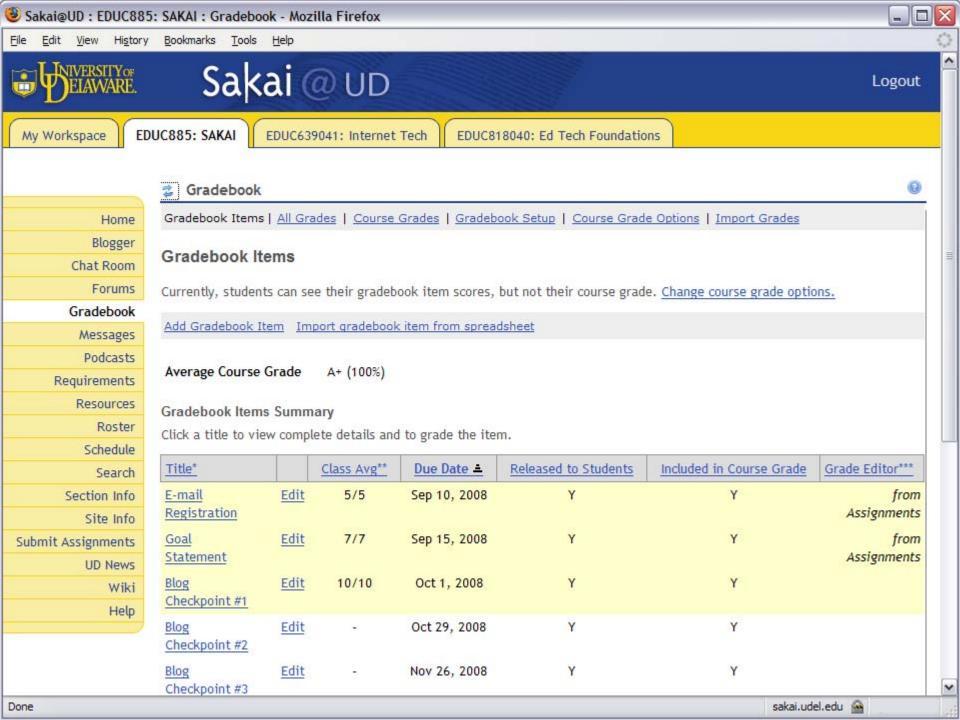
- By the end of the course, each team must mount its portfolios and projects on the Web for their professor to review and grade. Each member of the team receives the grade awarded for the final project, which constitutes one third of the final grade.
- Individually graded, on the other hand, are the blogs, in which each team member keeps track of their individual contributions toward accomplishing the project's goals.
- Thus, at the end of the course, I can assign final grades based on the overall quality of the final project as well as the role each student played.

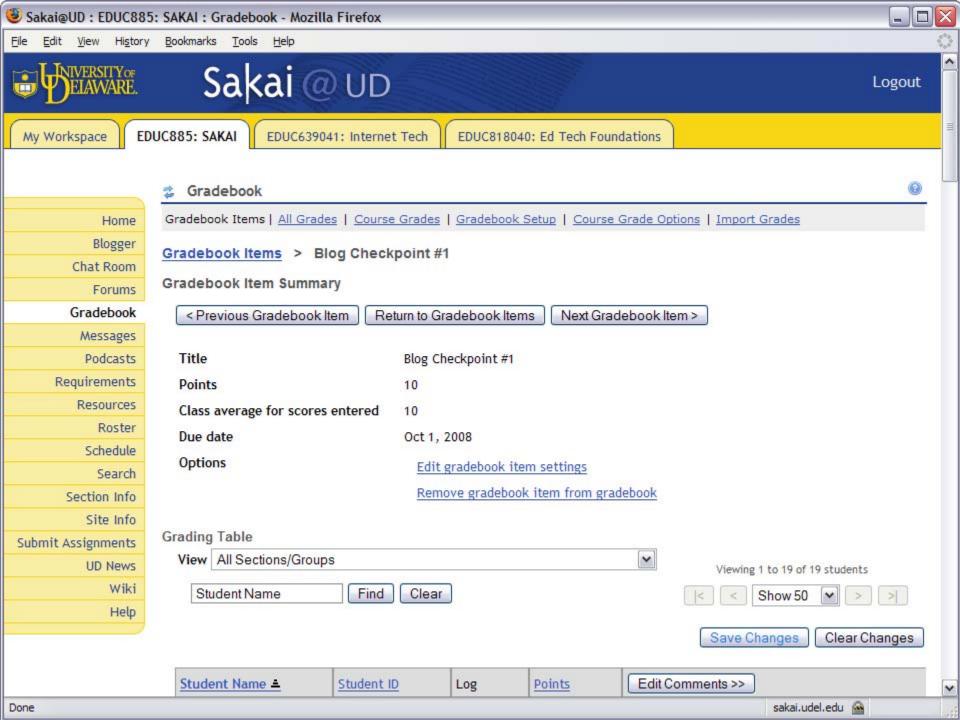
# Gradebook Strategy

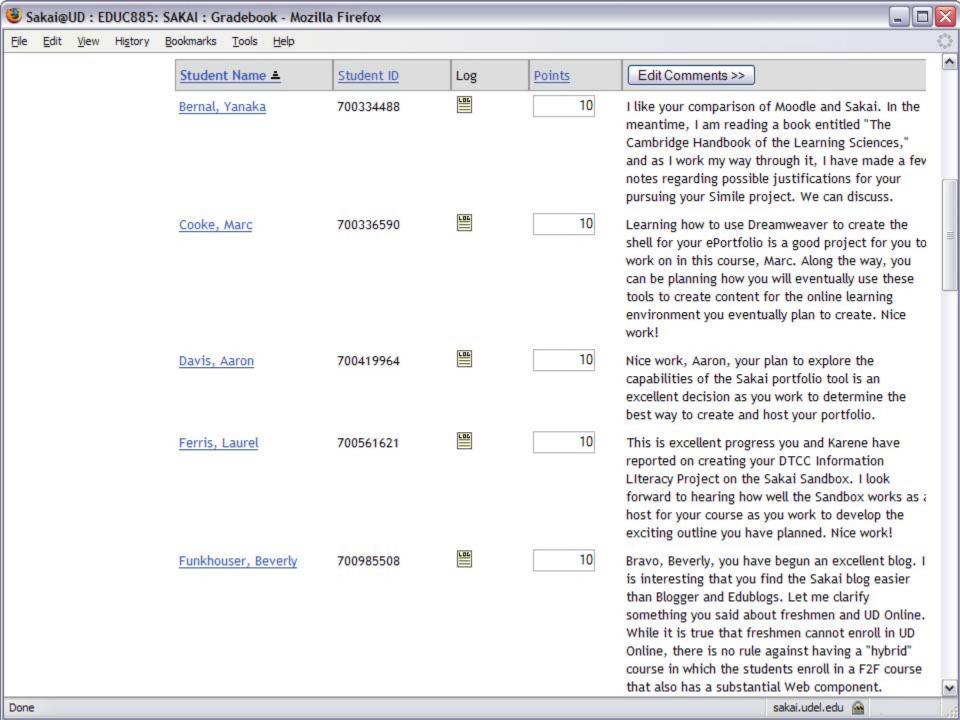
- Sakai lets you give students as many extra chances as you want. You can even markup the students' answers.
- You can set the date when assignments appear, when they must be answered, and when they will become unavailable. You can even restrict exams to specific IP addresses.
- Instead of passing students on with mediocre grades, I use the Sakai scaffolding to help each student master the content and ace the course.

# Blogger

- In a meta-analysis of 122 studies of computersupported collaborative learning, Lou, Abrami, and d'Apollonia (2001) found that group performance is not necessarily predictive of individual performance; I agree with this finding.
- To assess each individual's contribution to the group project, therefore, I require each student to write in the Sakai Blogger at three checkpoints equally spaced throughout the course.
- Students like being able to see each other's reports, and some of the students turn on the feature that lets classmates comment on each other's blogs.







#### Metacognitive Assessment

- Through the conversational assignment protocol that records the dialog between students and instructors, Sakai can make student thinking visible. By posing questions that make students reflect on whether their current level of understanding is adequate, the instructor can help students learn to be aware of the progress they are making toward understanding.
- In my Web design courses, for example, students propose and negotiate the topics of their projects. Through an online consultation protocol, I help students formulate a project that not only satisfies their interests, but also meets national standards in their chosen career field. The dialog I have with my students is recorded in the Sakai database and can be viewed at any time on the course assignment page.
- I encourage students to reflect on this dialog, think about their progress toward meeting the standards, and become actively involved in setting their learning priorities.

#### Course Evaluation Results

By following the principles of *How People Learn*, the Sakai course portal achieved the following results in Winter 2008, when my students completed a rigorous evaluation of the course administered independently through the University of Delaware course evaluation process:

- In the doctoral course offering (n=14), on a scale of 1 to 5, the Instructor rating was a perfect 5.0 (excellent), and likewise, the overall evaluation of the course was 5.0 (excellent).
- At the master's level (n=12), the Instructor rating was 4.75, and the course rating was 4.67 (4 = very good, 5 = excellent).

I am grateful to the University of Delaware for adopting Sakai and making this work possible.

### Survey Results

The following responses are typical of the feedback I received when I used the Sakai testing tool to administer a survey asking my students what they thought about Sakai.

- MyCoursesPlus in my view is 10 times better than mycourses. It is more up to date with times and has many more features that were not present in MyCourses.
- 2. I am very pleased with the new structure for this course. The site is very organized and easy to navigate.
- 3. This new course management system is very similar to Serf. It is easy to navigate, fun to use, and has a lot of various options for the student to use.

# Pedagogical Frameworks

How Leading Instructional Models Inform the Design of Sakai Learning Materials

### Component Architecture

- As we have seen, Sakai's frameset requires the course author to choose and configure the tools to be used in the course.
- Ferdig (2007, p. 52) refers to this kind of design framework as a component architecture.
- In the scholarly literature are several instructional design models that can help faculty think about what components to include and how to use them.

### Gagne's Instructional Model

Gagne's (2005) nine events of instruction inform the design of online learning in the Florida Virtual School and Spokane Virtual Learning (Johnston, 2007, p. 22):

- Gaining Attention (Reception)
- 2. Informing Learners of the Objectives (Expectations)
- 3. Stimulating Recall of Prior Learning (Retrieval)
- 4. Presenting the Stimulus (Selective Perception)
- 5. Providing Learning Guidance (Semantic Encoding)
- 6. Eliciting Performance (Responding)
- 7. Providing Feedback (Reinforcement)
- 8. Assessing Performance (Retrieval)
- 9. Enhancing Retention and Transfer (Generalization)

#### Keller's ARCS Model

Keller's (1987) motivation model called ARCS reminds us of four principles important in motivating virtual learners (Johnston, 2007, p. 23):

**Attention:** establishing and maintaining curiosity and

learner arousal;

Relevance: linking the learner situation to the needs and

motives of the learner;

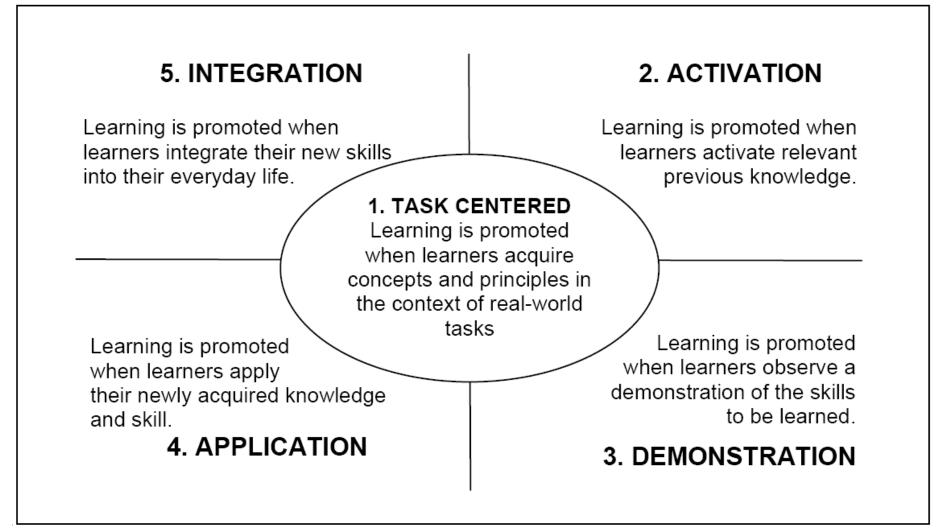
Confidence: learners attribute positive learning

experiences to their individual behavior;

Satisfaction: learners develop the desire to pursue similar

goals.

# Merrill's First Principles



# Andragogy

- Adragogy is a theory of adult learning developed by Malcolm Knowles (1984).
- Andragogy offers four design principles:
  - 1. Adults need to know why they need to learn something.
  - Adults need to learn experientially.
  - 3. Adults approach learning as problem-solving.
  - 4. Adults learn best when the topic is of immediate value.

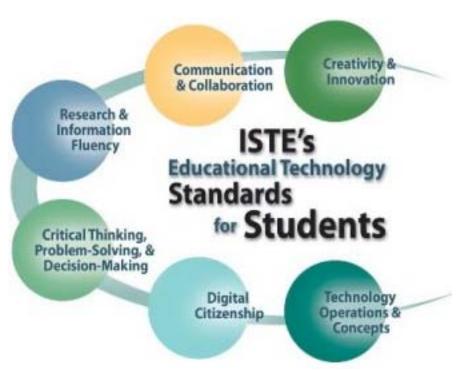
### **Articulation Principle**

 Sawyer (2006, p. 12) teaches that "articulation and learning go hand in hand, in a mutually reinforcing feedback loop. In many cases, learners don't actually learn something until they start to articulate it. In other words, while thinking out loud, they learn more rapidly and deeply than studying quietly."

# Creativity in Learning

 As we learn more about how people learn, creativity becomes more important as an instructional strategy.

 In the recent revision of the ISTE standards, creativity replaced operations as the first standard.



### Bloom's Taxonomy

Creating is on top of Anderson & Krathwohl's revision of Bloom's taxonomy.

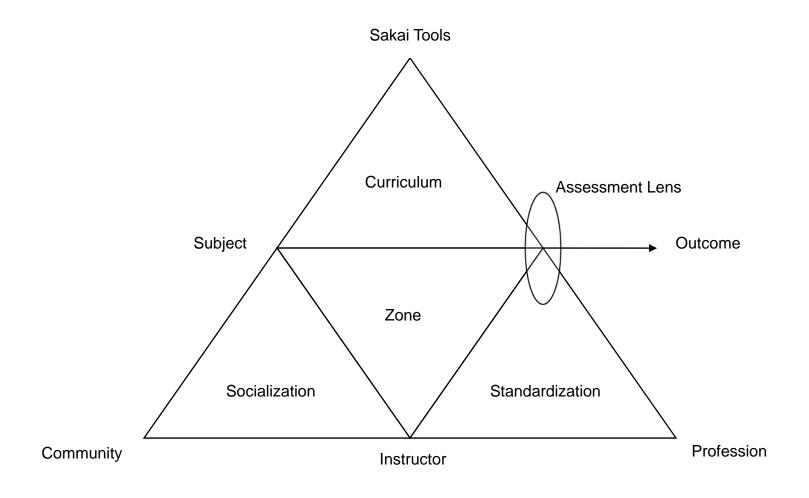
Benjamin Bloom (1984)	Anderson & Krathwohl (2001)
Evaluation	Creating Generating new ideas, products, or ways of viewing things
Synthesis	Evaluating Justifying a decision or course of action
Analysis	Analyzing Breaking information into parts to explore understandings and relationships
Application	Applying Using information in another familiar situation
Comprehension	Understanding Explaining ideas or concepts
Knowledge	Remembering Recalling information

## Revised Taxonomy Table

The revised taxonomy table has a knowledge dimension and a cognitive process dimension. The instructional designer aligns objectives to assessment techniques by considering the kind of knowledge to be learned (knowledge dimension) and the process used to learn (cognitive process dimension).

The Knowledge Dimension	The Cognitive Process Dimension						
	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	
Factual Knowledge							
Conceptual Knowledge							
Procedural Knowledge							
Metacognitive Knowledge							

## Sakai Activity Theory



# Design Tips

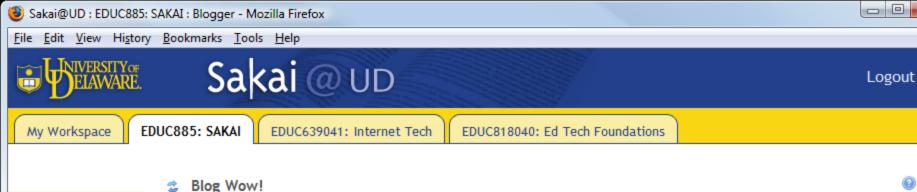
Jumpstarting Three Sakai Tools in Which Instructions Are Not Clear

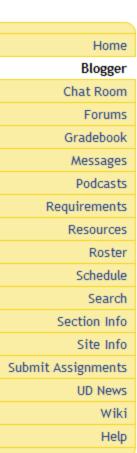
## Making Sakai Tools Intuitive

I created startup messages in three tools for which students may need help getting started. These three startups explain that:

- In the Wiki, you must create a link in order to make a new page.
- In the Blogger, you must click new in the menu bar to write a new entry in the Blog.
- In the Forum, you must click the heading of the message to which you want to respond.









#### Fred Hofstetter

How this course uses the Blogger tool å

Sep 2, 2008

Welcome to the Blogger tool! In this course, you will use the Blogger tool to complete your three checkpoint assignments, which are creatively named Blog Checkpoint #1, Blog Checkpoint #2, and Blog Checkpoint #3. True to their names, these blogs are literally logs of the progress you make toward achieving your course goals or your specific project goals. You can write more than three times if you want. I like to see details regarding how you decided to organize your project, the order in which you decided to do things, tools you discovered along the way, any problems you ran into, and how you went about solving them.

To write a new entry in your Blog, click Add blog entry in your Blogger's menu bar. I suggest setting the access to SITE so you can view each other's blogs. I really look forward to reading them!

Edit entry | Remove entry | 0 comments | Leave a comment | Permalink



Hello, I am Fred Hofstetter, and it is my honor to serve as your course instructor. I hope you are enjoying the course!



## Reflections on Sakai

Many Features to Like and a Few Pitfalls to Avoid

#### **Automatic Notification**

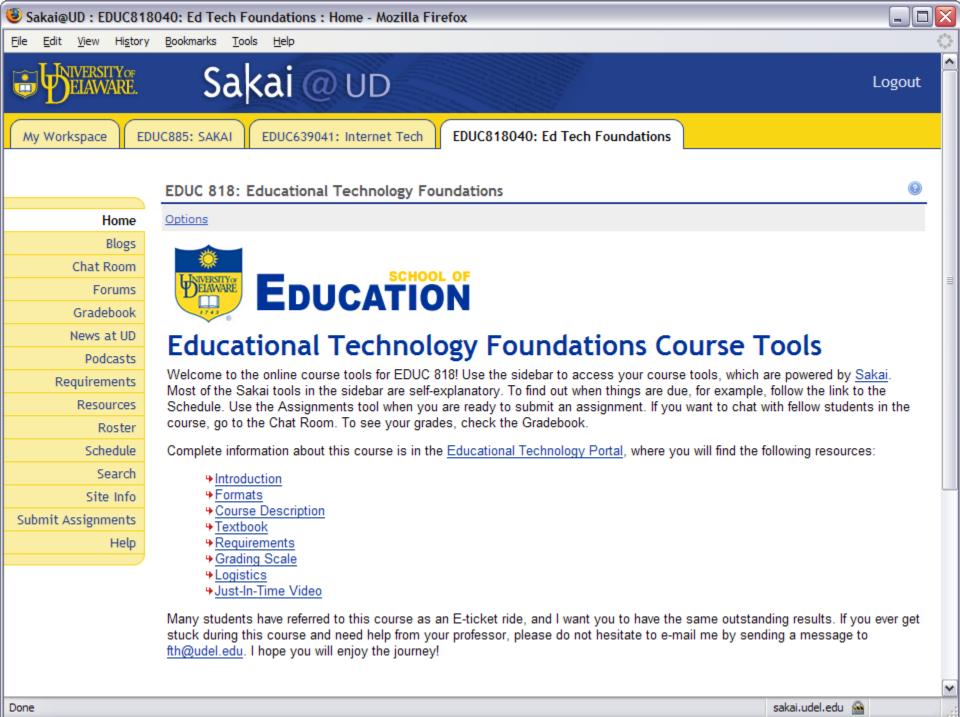
- I like how the Announcements, Resources, and Syllabus tools can send email notifications to site participants when you add new items to the course. You can specify low or high priority.
- In low priority, email notification will be subject to each participant's notification preferences.
- In high priority, all site participants receive the notification.
- To further reduce transactional distance, I would like to see this automatic notification feature added to the Sakai gradebook and assignment tools.

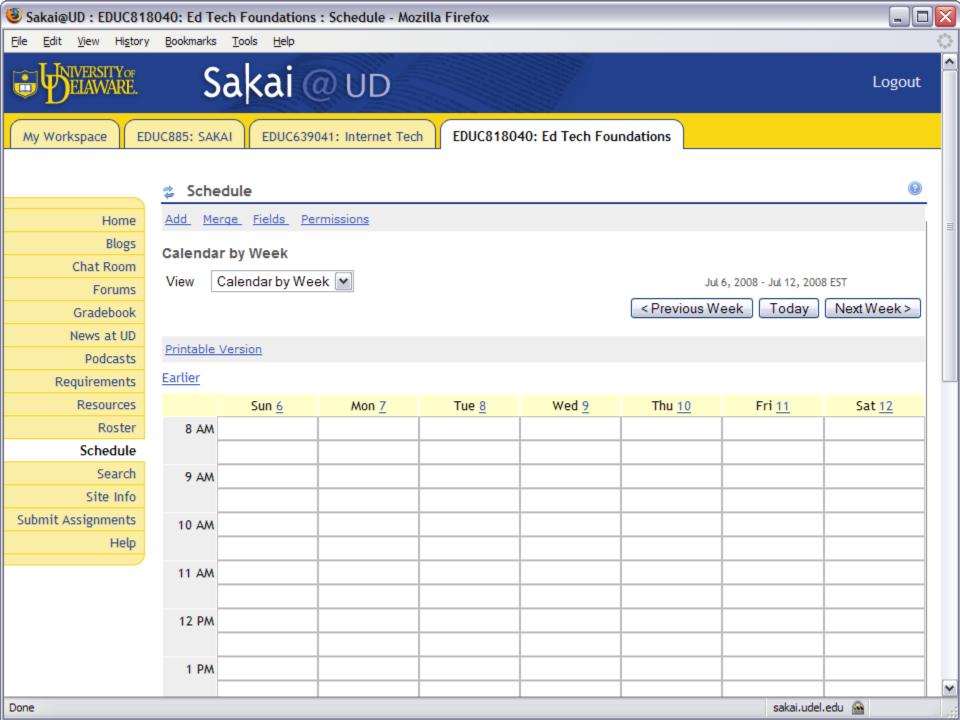
#### Forum Statistics

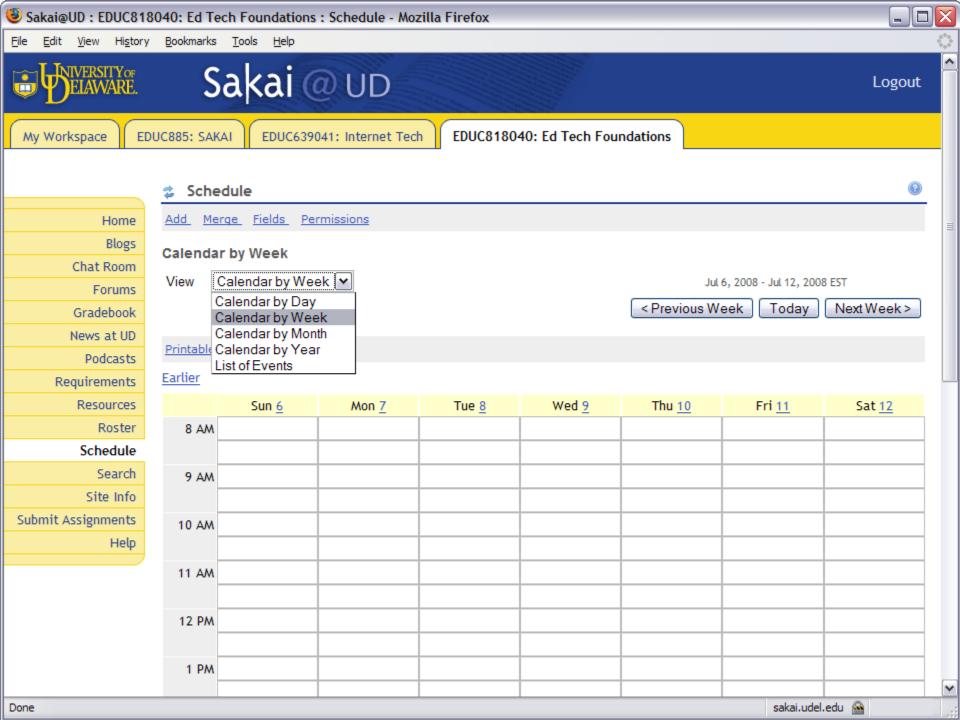
- I like how the forum statistics enable you to see each student's level of participation.
- This is particularly helpful when forum participation is a requirement in the course.
- You can even grade a message in a forum if you have created an assignment that requires participation in a forum.

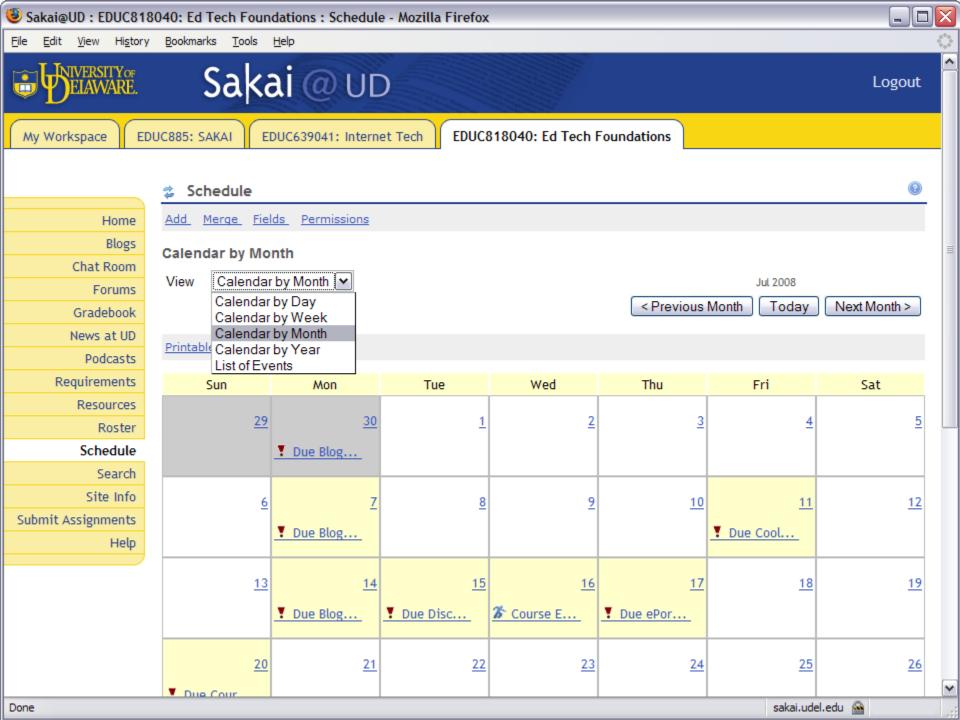
## Scheduling

- Students like how the Sakai schedule tool enables you to visualize how the course unfolds.
- I like how assignments appear automatically on the schedule.
- I really like how the schedule updates when you change an assignment's dates.
- I found the schedule's monthly view most useful because it pictures how the daily and weekly activities unfold.









## Grading

- Students reported no problems answering my first assignments in Sakai.
- Grading went smoothly and became more efficient when I figured out how to sort by submission status.
- To see what needs to be graded, you choose Assignments (not Gradebook), click the In/New summary, then click Status to sort by submission status.

## Sidebar Tooling

 I like how the Page Order feature of the Site Info tool enables you to turn tools on or off and change the order in which the tools appear in your Sakai sidebar.

### Blog and Wiki Wishes

- As noted earlier, Sakai's Blog and Wiki are powerful tools for communal knowledge building.
- If the Wiki could be searched and tagged, however, it would be even more powerful, as would the blogger.
- Tagging provides a mechanism for following discussion themes, which is one of the knowledge building requirements identified by Scardamalia and Bereiter (2006).

#### Pitfalls to Avoid

- In the forums, do not permit students to create new topics. Let students create threads, but not topics. When you create a topic and configure the settings, you should consider leaving the long description blank because it only shows if the student clicks details.
- Sakai@UD is a secured Web server that uses the https protocol.
  If you have http resources on an https page, you will get an
  annoying warning about mixing secure and non-secure items. To
  prevent this, either put everything into Sakai to make it all https,
  or create an external link from content not in the sidebar.
- When using Sakai, all users need to avoid using the browser's back button. Instead, use the Sakai buttons and breadcrumbs.
- Chat room conversations reside in an archive that classmates can search and read. Make sure students realize the chats are not private.

#### Sakai Design Process

#### In a Nutshell

- On the home page, replace "worksite information" with the name of your course. Use the Site
  Info URL field to give the link of your first page to display. Make this be a page within your Sakai
  worksite in order to avoid the unwanted warning about mixing secure and non-secure items.
- Use the Site Info tool to add tools to your course; I added assignments, schedule, forums, wiki, blogger, podcasts, chat room, search, and tests.
- Create your course content. I did this with Dreamweaver; you can also create content with MS
  Word and use the PDF add-in to convert it into a PDF file that works beautifully in Sakai.
- Adopt textbooks; I did this at <u>safari.oreilly.com</u>.
- Create assignments and decide upon the weighting of your assignments. This works best if the weights add up to 100.
- Decide when your assignments will become visible, due, and accepted.
- Write a startup message in the forum explaining to click the heading of the message to which you want to respond.
- Make the first message in your Wiki explain how to create a link to make a new page.
- Front-end your blogger with a message explaining to click new in the menu bar to write a new entry in the Blog.
- Record an audio or video message and use the Podcast tool to put it on your course feed.
- Use the Test tool to create a survey for students to take over the first weekend and let you know how they are doing with Sakai.

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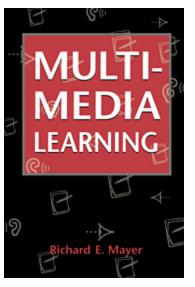
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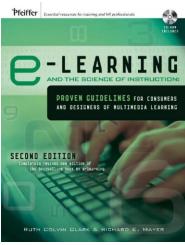
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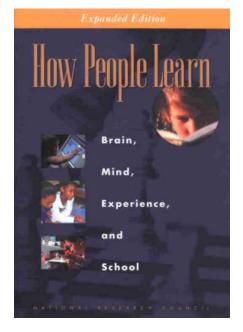
# Recommeded Books

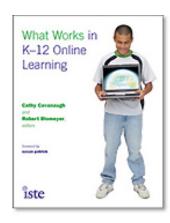
Researched Best Practices of e-Learning

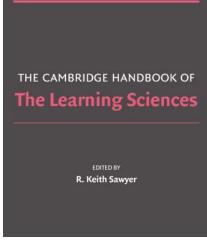
#### Recommended Books











### Thanking User Services

I want to thank the University of Delaware's IT-User Services for the fine service they are providing to faculty learning Sakai.



 Janet DeVry manages the effort and encourages our participation in the Sakai community.



 Nancy O'Laughlin facilitates our migration from WebCT to Sakai.



 Karen Kral is invaluable in finding workarounds to temporary problems you may encounter.



 John Hall is doing an excellent job of explaining technical details to faculty in our LMS forums.