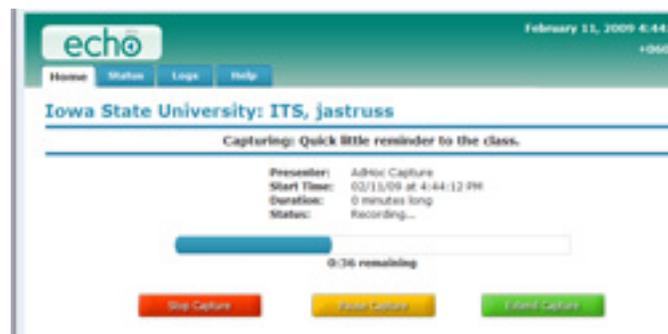


Classroom Capture I: Using the Echo360 Capture Software in the Classroom

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Visit the IT Learning Pod's
Online Web Site at:
<http://css.ait.iastate.edu/>

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Chapter 1

What is Classroom Capture?

1.1 Defining Classroom Capture

Classroom capture is a form of podcasting (audio only), enhanced podcasting (audio plus jpeg frame grabs), or vodcasting (audio and VGA output or audio, VGA output and video) which is specifically associated with a classroom or teaching environment. The audio or audio and video parts of an instructor's presentation are captured to a file or a set of files on the desktop and then uploaded to the web for use possibly in a Podcast for iTunes U or as a component of a WebCT class.

1.2 Using Classroom Captured Material

The students in the class can use the class podcast before the next class to review what was presented in the class that day and/or to study later on for an examination over the material. Since a podcast is portable and can be listened to or viewed almost anywhere either on or off the internet, it is very convenient for students who can download the material from the internet and then listen to or view the podcast offline at their convenience.

Many students have found classroom captured podcasts and vodcasts to be very useful and helpful in learning classroom materials. In fact, as a distance education— tool classroom capture can replace the face-to-face classroom but it still is only part of the full classroom experience.

1.3 The Media Pipeline for Digital Content

There are basically three steps in the “Media Pipeline” for creating Classroom Digital Content for any instructional class:

Capture → Upload → Publish

- **Capture-** This usually means capturing the audio, enhanced audio (with screen capture) and/or audio and video portions of a class as files on a computer or portable computer for later use.
- **Upload-** Take the raw audio or audio/video files on the computer and upload them to a central data repository for processing in order to be used on the web.
- **Publish-** Process the raw data files into a form that can be used in a podcast or vodcast and publish that material so it is accessible from the web. The published material can be used in iTunes U, used on WebCT or just stored at a given web location either as a set of files or as a standard RSS feed.

It’s referred to as a Pipeline because once a session is captured the other two steps are fairly repetitive. In fact the capture step, if the class occurs on a regular basis— can be fairly repetitive as well. The idea behind creating a digital pipeline is to take away the repetitive steps and have the instructor concentrate on teaching the class rather than worrying about uploading and processing the files for the web.

So the Echo360 software takes care of the digital media pipeline for you when you are doing classroom capture. You simply set the system up and then either on an a regular or ad-hoc basis have Echo360 record your class, upload the files to a central repository, process the files and then post them to the web.

1.4 What type of support does IT Services provide?

IT Services at Iowa State can help you:

- **Install** the Echo360 software on your computer or portable computer. You will need to provide the computer for installation but IT Services

can help you install the software on your desktop or portable unit. If your local IT support team installs the software, IT Services can work with your IT support team to get the IP number and MAC address for the computer or portable computer that you intend to use.

- **Process** the results from the Echo360. You will need to let IT Services know what to do with the classroom captured material that is sent to the data repository unit. Normally this means informing IT Services as to where you would like the results published— whether this is to: a WebCT class or an iTunes U podcast or some other web location.
- **Schedule** a classroom capture. Classroom captures can be scheduled to happen at a particular place and time on a regular basis. Captures can also be done on an ad hoc basis but it is usually more convenient to simply schedule when captures are going to take place.

Currently ITS Classroom Services are assisting people from Room 1200 in the Communications building or via their e-mail address *podcast@iastate.edu* with help and information regarding the Echo360 capture system. They can assist you in getting the software installed, setting up the classroom capture schedule, identifying where you want the resultant files placed and even in creating an iTunes U account for your ISU class.

1.5 What kinds of digital content can you create?

There are basically three types of digital content that you can make with the Echo360:

- **Enhanced Podcasting**- This is known as audio and screen capture and takes a standard audio podcast and adds occasional snapshots of your computer screen when major changes takes place or after a set period of time. The normal resultant file is an m4b file. Enhanced podcasts are supported by most podcast players but do require some sort of a visual display device to show the screen capture portion of the file. However, the resultant file is still fairly small in size. This type of capture is most useful when you are doing a Powerpoint presentation

or showing simple content from the web as part of your class and is the most popular choice for creating digital content with the Echo360.

- **Audio Only-** This is a traditional audio-only podcast whose end result is normally just an mp3 file. Audio only is small and versatile but does have its limitations. Most people prefer audio and screen capture.
- **Rich Media-** Classrooms that have the Echo360 capture appliance can capture: audio, your computer screen as you make even minor changes and possibly even live video of the instructor (if you have also added a video camera). The resultant files are normally multiple swf files that are sync'ed together during playback. This approach is very visual and shows the instructor as an integral part of the classroom environment so it is the closest thing to actual being in the classroom. However, it does create much larger files for playback and this capture option is currently only available in a select few classrooms on campus. To include live video of the instructor, you also need to add a video camera which is not currently included in the capture appliance classrooms.

Chapter 2

The Echo360 Software

2.1 Hardware and Software Requirements

If you are **not** in a classroom with the Echo360 appliance already installed, you will probably want to have the software installed on a laptop that you can carry with you to your classroom. Ideally, you would carry the portable into the classroom, switch it on, attach the microphone and be ready to teach class as the software starts up on its on at the scheduled time or when you click on the ad hoc session button.

The **basic Echo360 system requirements** include:

1. An **internet connection** either wireless or wired in the classroom where you are doing the capture (and afterwards for session uploading).
2. A fairly hearty **Windows laptop running XP** with 10GB of space.
3. Some sort of external or internal **microphone** that is plugged in and available for the capture.

You can run the EchoSystem with a less than ideal computer system but your results may vary and it may work but take quite a bit of time to upload your capture to the central repository after the classroom capture.

2.1.1 Computer Requirements

Computer requirements for the Echo360 include:

- Intel dual core, 2.0GHz or faster

- Windows XP SP2 or SP3 (Microsoft Vista is not yet supported). Macintosh systems will be supported in the near future with the Macintosh version currently being on the schedule for a June 2009 release.
- 2GB RAM or greater
- 10GB Hard Drive Space

2.1.2 Other Requirements

Audio is captured using the built-in sound card input on the computer running the capture software. An 1/8" line-in/mic-in connection or USB based audio can be used for capturing audio. Audio levels should be configured on the input to be as high as possible without reaching maximum levels during peaks or causing audible distortion during the recording.

The VGA is captured from the local VGA screen buffer and requires no external connection or configuration.

2.2 Processing Requirements

You can have the results or products of your classroom capture uploaded to WebCT or iTunes U or both. You could also have the capture uploaded to almost any standard web location to which you have access for use with a standard style RSS feed.

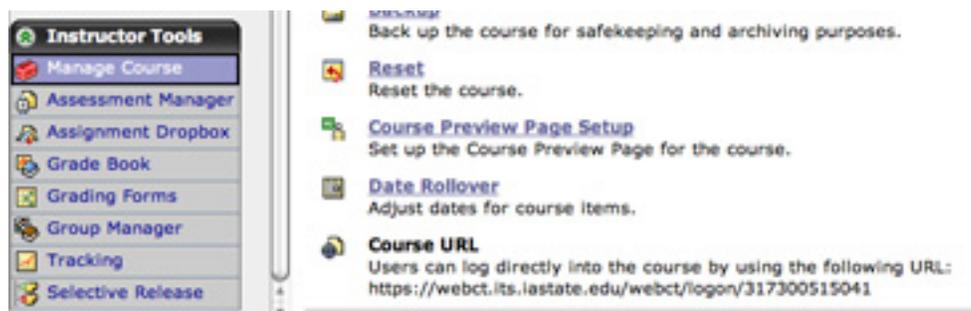
2.2.1 WebCT

To have your classroom capture files uploaded to WebCT, you must have:

- **An Official WebCT class** - Contact CELT from the instructor support web page:
http://www.celt.iastate.edu/webct/instructor_support.html
to get your class created.
- The **WebCT course number** for your class. This can be found at the end of the *Course URL* inside of your WebCT class.
- You must **add w.apresox** as a Section Designer for your class and make sure that the calendar feature is available for your class to use.

WebCT Course Number

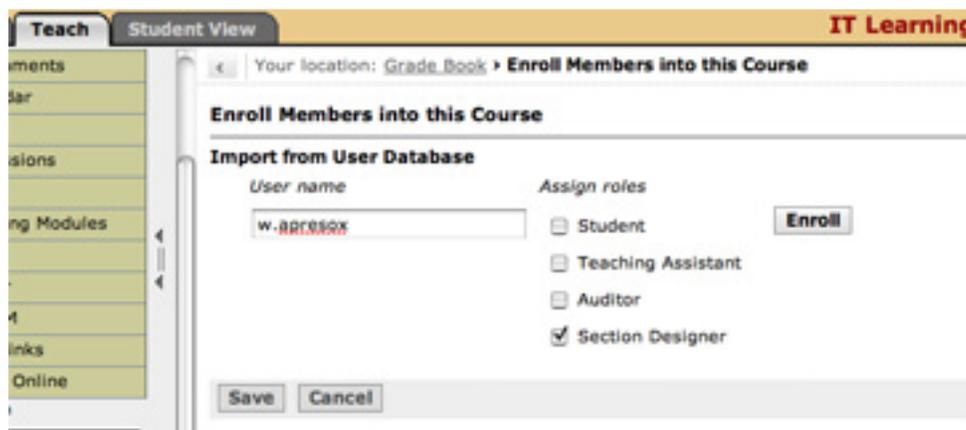
The WebCT Course Number for your class can be found at the end of the Class URL. Go under the **Teach** tab then under *Instructor Tools* click on **Manage Course**. Scroll all the way down on the right and you should see *Course URL*. The numbers you need are located at the end of the URL. For example, in the case below the WebCT Course number is **317300515041**.



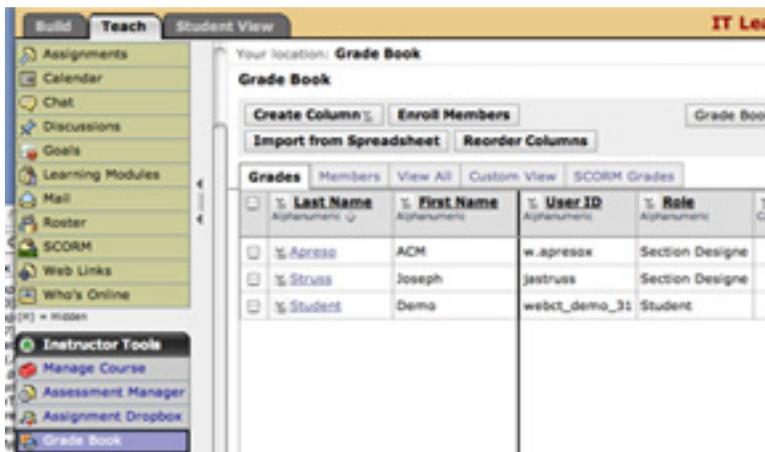
Other WebCT Requirements

The two other WebCT requirements include that you have to add w.apresox as a Section Designer and you have to have the calendar feature available for your class to use.

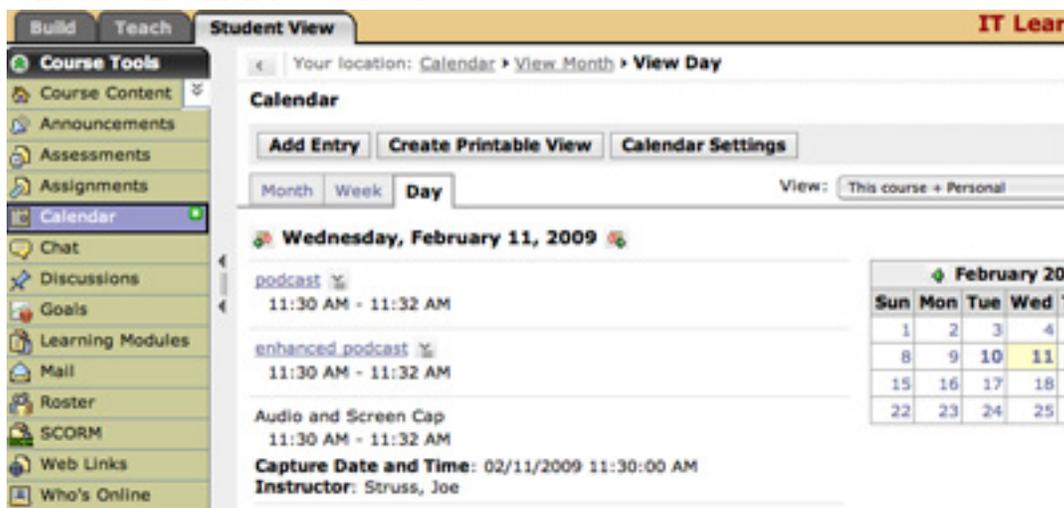
To add w.apresox as a **Section Designer**, go under the **Teach** tab then under *Instructor Tools* click on **Gradebook**. Within the *Gradebook*, click on the **Enroll Members** button and add w.apresox as a **Section Designer** then click the **Enroll** button.



Once you have clicked the **Save** button, you should see w.apresox as a Section Designer. You will need to add w.apresox as a Section Designer for every section in which you are going to use the EchoSystem for classroom capture.

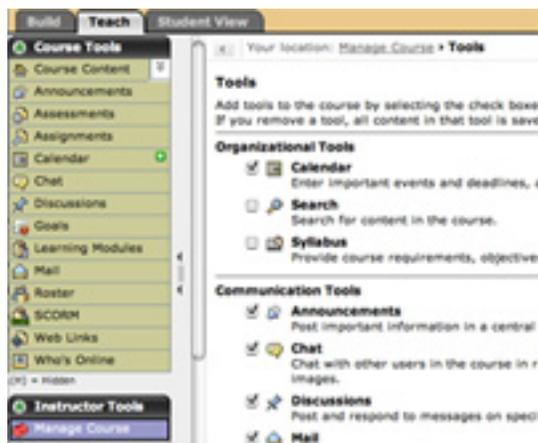


The other requirement is that your students need access to the **Calendar** feature inside of WebCT as that is what is used by the EchoSystem to display your captured sessions within a WebCT class. Each session is displayed under the date in which it was recorded.



The Calendar feature should be available to your students by default in WebCT. If you have removed the feature or are using a course template that does not have the *Calendar* tool, you can add it back under the **Teach** tab in the *Instructor Tools* area by clicking on **Manage Course**. Next click on

the **Tools** button and then click the checkbox next to the **Calendar** tool then click on the **Save** button at the bottom of the page.



2.2.2 iTunes U at Iowa State

To have your classroom capture uploaded to iTunes U, you must have:

- **An Official iTunes U class** - Contact IT Services from the iTunes U support web page:

<http://itunesu.iastate.edu/contribute/>

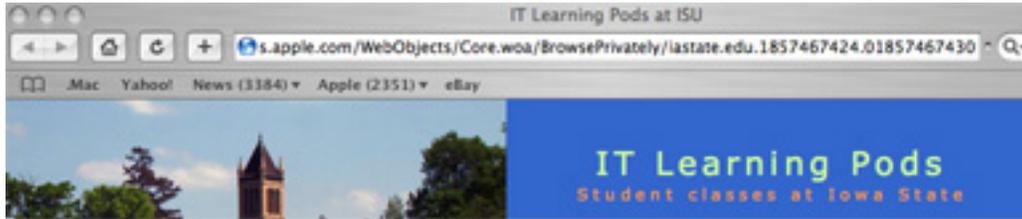
to get your class created. You can also request an iTunes U class be created for you when you have your Echo360 software installed at the Communications Building.

- The **iTunes U course number** for your class. This can be found at the end of the iTunes Store URL for each section of your course.

Once your iTunes U class has been created, you can find the course number by **right-clicking** or **ctrl-clicking** on the **sectional tab** for your class inside of iTunes U then going over and clicking on the part that reads **Copy iTunes Store URL**.



Next open a web browser and paste the URL into the browser's URL location box:



The iTunes U course number for that particular section are the last set of numbers in the URL location after the last period and not including the first zero. In the above example, the iTunes U course number is 1857467430.

Chapter 3

Using the Echo360 Software

The easiest way to use the Echo360 software is as a scheduled classroom capture. This means that the software will automatically startup and begin recording on particular dates and times on a regular basis. You can contact Classroom Services (*podcast@iastate.edu*) in the Communications building to setup a scheduled classroom capture which can also be done when your Echo360 software is installed.

Besides a scheduled classroom capture, you can also do an ad hoc capture whenever you want to do so. You can do this instead of scheduling your classes to be recorded or you can do this in addition to your scheduled recordings to give clarification or additional remarks to something you said in class.

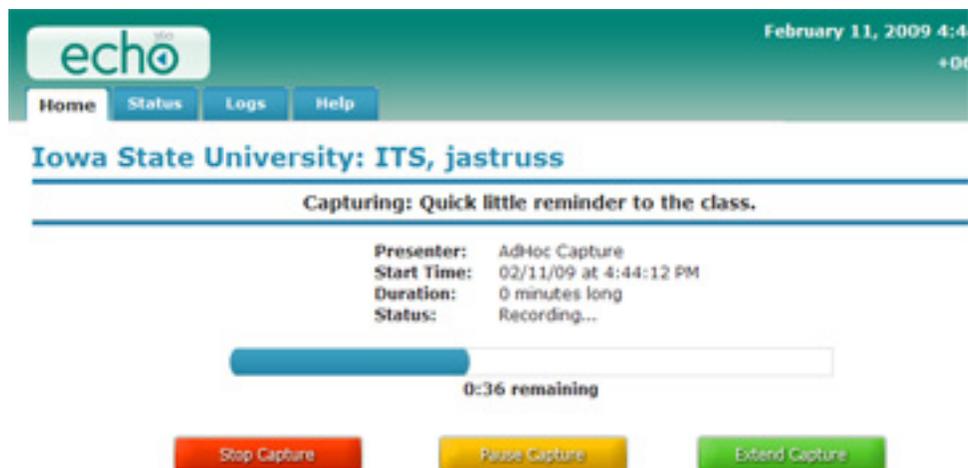
3.1 Scheduled Classroom Capture

The Echo360 software once it is installed and ready to go— is actually very simple to use. Once you have setup the software and established a publishing location, all you have to do is make sure that the computer is on and plugged into the internet in your classroom and that you have a microphone available for your computer system to use. For a scheduled classroom capture, the software will startup automatically at the scheduled time and begin recording. Once the time period for the class has completed, the software will automatically stop the session then upload the classroom captured files, process them for the web and finally publish them to your desired location.

So if you have a built-in microphone on your laptop and wireless internet access on your laptop and in your classroom, all you have to do is just have

your laptop turned on and simply start and stop the class on time. The software will automatically startup and begin recording in the background and will automatically stop when the scheduled class time is finished.

If you find that you are going to go a little over the scheduled time, bring up the Echo360 software as you would in an *ad hoc* classroom capture session and press the **Extend Capture** button within the program screen. You can also halt recording early by pressing the **Stop Capture** button within the program screen. It's usually easiest though just to let the program run to it's completed time interval.



Once class is over, the Echo360 software will begin uploading your files to the central data repository for processing. So if you shut your computer system down immediately after class, your files won't get uploaded for processing until you turn your computer system back on again (say back at your office) and re-connect to the internet. The processing takes a little while to complete as well so don't expect your published files to be available on the internet until at least an hour or so after the Echo360 reconnects with the internet after class.

Still for overall simplicity, using scheduled recordings with the Echo360 software is clearly the way to go. Simply show up at the scheduled time and turn on your computer that has an internet connection and either a built-in or a plug-in microphone and teach class. After class, turn your computer back on in your office and the files will automatically upload and be published inside of WebCT or iTunes U in about an hour.

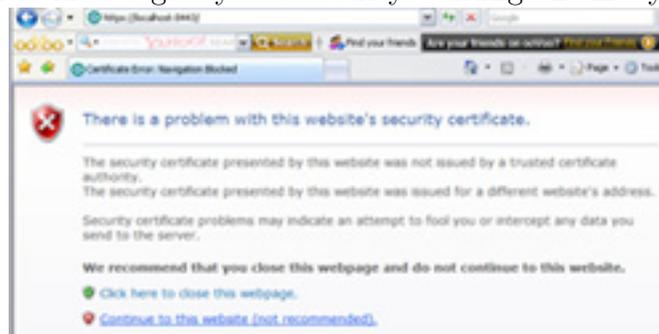
3.2 Ad Hoc Classroom Capture

If you don't have a scheduled classroom recording time or simply prefer to use the ad hoc recording feature, capturing a session almost anywhere or any time for supplemental information or for non-traditional classroom use is still not very hard to do. Again, just show up to your classroom, office or other learning environment and turn on your computer making sure that it has an internet connection and a built-in or a plug-in microphone.

Next before your class begins, open an internet browser and go to the following URL (note that it starts with https):

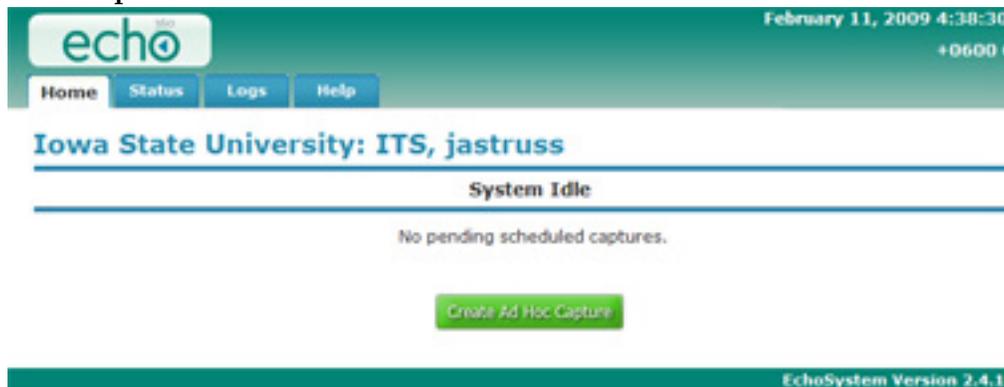
`https://localhost:8443/`

some browsers will also give you a security warning on this type of page:



but just click on the **Continue to this website** link to proceed onward. Next enter the **Username** and **Password** that was given to you when your Echo360 software was installed. Ask your in-class instructor, for the username and password to use in Durham 89. The Echo360 software should immediately then wake-up on your computer and be available for your use.

Once the Echo360 software has started up, simply click the **Create Ad Hoc Capture** button:



and fill out the information about your Ad Hoc Capture session including describing the capture, telling how many minutes long you want the capture to take place and what type of capture that you want either audio-only or display-audio which is audio along with screen capture:

The screenshot shows a web interface for starting an ad-hoc capture session. At the top, there is a navigation bar with links for Home, Status, Logs, and Help. Below this, the page title is "Iowa State University: ITS, jastruss" and the status is "System Idle". The main content area contains a form with the following fields:

- A text input field for "Describe this capture" containing the text "Quick little reminder to the class."
- A text input field for "How many minutes is the capture?" containing the number "1".
- A dropdown menu for "What do you want to capture?" with options "audio", "display-audio", and "audio".

At the bottom of the form, there are two buttons: a red "Cancel" button and a green "Start Capture Now" button.

Next just click on the **Start Capture Now** button and your session will begin. Add that's pretty much all there is to it.

After that you can cut the session short or extend the session by pressing the **Stop Capture** and **Extend Capture** buttons or just let it continue to its scheduled conclusion. Your captured session will begin to upload just as soon as the Echo360 software re-connects to the internet after your class session ends.

After uploading, ad hoc processing currently requires intervention from an Echo360 admin staff person so you may have to wait a little bit to receive your published result— especially if the Echo360 admin staff are out of their offices; though it usually gets processed and published in short order.

3.3 Demonstration of Classroom Capture

Go ahead now and create your own ad hoc classroom capture. On the demonstration unit or using your own classroom Windows unit, open an internet browser and go to the following URL (note that it starts with https):

<https://localhost:8443/>

and use the other information about creating an ad hoc session and create your own ad hoc capture session of about three minutes in length. With any luck, all the ad hoc sessions will be uploaded to visit in the **IT Learning Pods** WebCT class by the end of class today.

Chapter 4

Echo360 Problems & Solutions

Here is a way to avoid some snags and difficulties that you may encounter when doing classroom capture with the Echo360 and the EchoSystem. Just a quick list of items to consider when using or having problems:

- **Upload Time** — make sure your computer is on and has an internet connection some time shortly after your classroom capture session has completed. The EchoSystem needs time to upload the files to its central repository so you need to give it a some time after your class has finished to complete this function. You can interrupt this process if it has already started in the classroom and continue later on somewhere else as it will just continue on with its upload from where it was interrupted once it regains an internet connection.

So if you are not seeing your published files on WebCT or iTunes U, you may want to check and make sure that you've turned your computer on after class.

- **Starts on Time** — Scheduled recording times will always start and stop on time if the computer system is on and available to the internet. So if you are sick and working from home on your computer, the EchoSystem is still going to start recording you and will upload that recording once it's finished.

So if you are ill or don't want a particular scheduled recording time to take place, contact IT Services to cancel the particular recording session.

- **Minimal Editing** — You can be granted access to do some simple editing on your classroom capture once it has completed. This can allow you to cut out the front part or the end part of your class so you don't have a lot of empty space in your recording. Contact IT Services in the Communications Building for more information about this capability.
- **Auto-Shutoff** — If your class is going long, remember to use the *Extend Capture* button to lengthen your session. The session will automatically cut off precisely at the scheduled time and if you have a tendency to run a little over and you don't catch it with your classroom capture then your final published capture will be minus the last few minutes of class which may be the most important of the day.

So as you get towards the end of class, check your time and if necessary— extend the recording time for your class.

- **Use a good Microphone** — A decent plug-in microphone or even wireless USB microphone is not overly expensive and can be very useful in getting a quality recording that your students can easily hear and understand. Also you need to remember to bring that microphone to class and if necessary to plug it in. This check is vitally important to getting any classroom capture at all— so you may want to make yourself a quick pre-class checklist: 1.) Turn on computer, 2.) Check for internet access, and 3.) Plug in the microphone.

If you check on your recording later and you have a very low volume recording or no recording at all, check to make sure that your microphone is working plus make sure that the gain on the microphone is set so you can be heard or that you are positioned close enough to the microphone to get a good recording.

Having a built-in microphone is a good safeguard and additional wireless microphones should be available for checkout from the Communications Buildings checkout window in the near future.

- **Take your time and test out the system** — Try some ad hoc recordings before you have a real classroom capture that you want to keep. You can always go and delete your recordings from WebCT and iTunes U so there's really not any good reason for not trying out the system first.

Also when your teaching class, just relax and teach as you normally teach. But if you are doing an audio-only recording— remember to try and describe at least a little bit when you have something that is very visual that you are showing. Plus, if you are doing screen capture— remember that a new screen capture won't take place unless 70% of your screen has changed. So if you are making small notes on say a Powerpoint slide, you may want to switch to the next slide and then switch back for those notes to be included in the screen capture.

- **Annotations** — When you are doing an ad hoc recording or even once a recording has completed and has been published, you may want to annotate or describe the recording a little better for your eventual listener. You may just want to add a comment or two to the classroom capture once it's been published so that when your students go back to the recording that may have some idea what that particular classroom session was about. You may also want to divide the session into timed quarters and annotate the contents of each quarter or section.

Annotations can really help your students or listeners who are trying to find a particular topic that is of interest to them or that they want to review. It takes a little extra time for you but can definitely help your students. Some instructors even place a copy of the Powerpoint slides for that day or their class notes with the classroom captured material inside of WebCT to assist their listeners in helping them find what they need.

Chapter 5

For More Information

For more information on the Echo360 software system, please visit the IT Services EchoSystem web site:

<http://www.it.iastate.edu/classroom/capture/>

The class notes for this class and other additional information is also available on the IT Learning Pods web site:

<http://css.ait.iastate.edu/Podcasting/>

Additional Echo360 and EchoSystem Information can be found at the company's web site:

<http://www.echo360.com/>

Some research articles on Podcasting and teaching pedagogy that you may find useful are located at:

<http://recap.ltd.uk/moodle/mod/forum/discuss.php?d=15>