

Using Camtasia Relay on a Tablet PC to Record Lectures in the Classroom: Experiences of a First-Time User

*Steven M. Click*¹

Abstract – Given the continuing increase in online education options for students, many universities are seeking methods which would allow faculty to quickly and easily create online versions of current courses. Using Camtasia Relay in conjunction with a Tablet PC allows for a simple, two-step process for recording lectures in the classroom and provides an excellent combination of audio and video information without the need for video editing skills. These recorded classes can be used in several different ways, including as an asynchronous course offering. The intent of this paper is twofold: to provide an overview of the tools used and to provide a troubleshooting guide for some of the issues which arise from their use. The overview section is intentionally non-technical, and the troubleshooting guide provides suggestions for overcoming most of the issues identified.

Keywords: asynchronous learning, lecture recording, engineering education, Camtasia

INTRODUCTION

Given the continuing increase in online education options for students, many universities are seeking methods which would allow faculty to quickly and easily create online versions of current courses. Using Camtasia Relay in conjunction with a Tablet PC allows for a simple, two-step process for recording lectures in the classroom and provides an excellent combination of audio and video information without the need for video editing skills. These recorded classes can be used in several different ways, including as an asynchronous course offering.

While the use of these tools may alleviate the need for advanced video editing skills, their use does require instructors to make adjustments to their teaching methods and styles. While these adjustments vary in terms of difficulty and additional work for the faculty, they ultimately affect the quality of the finished product. As a first time user of this technology, Dr. Click is experiencing firsthand the issues and challenges presented, and after learning a few tricks which are presented herein, is extremely satisfied with the results.

Dr. Click's initial motivation for use of these tools was his participation in National Science Foundation (NSF) funded research project, The Effects of Teaching with Tablet PCs with Asynchronous Student Access in Post-Secondary STEM Courses on Students with Learning Disabilities (#0726449). More information on this study can be found in Graves & Plant, 2009.

The intent of this paper is twofold: to provide an overview of the tools used and to provide a troubleshooting guide for some of the issues which arise from their use. The overview section is intentionally non-technical, and the troubleshooting guide provides suggestions for overcoming most of the issues identified.

¹ Steven M. Click, Assistant Professor, Department of Civil and Environmental Engineering, Tennessee Technological University. Campus Box 5015, Cookeville, TN 38505.

THE TOOLS

There are four key tools required for lecture recording using Camtasia Relay: a Tablet PC, a microphone, and the Camtasia Relay software. Dr. Click uses a Fujitsu Lifebook 4220, shown in Figure 1, though any Tablet PC would be acceptable for use. In truth, a Tablet PC is not specifically required for recording with Camtasia Relay – but the video portion of the recording is taken of the computer screen, so having a pen-enabled writing surface allows the recording to capture information written during the recorded lecture.

The second required tool is a microphone, in this case the CAD U7 Microphone, shown in Figure 2. Again, use of this particular microphone is not required, but an omnidirectional microphone is preferable, though in some lecture situations a unidirectional microphone may provide better quality recordings. While later discussion will indicate that even a good omnidirectional microphone is unlikely to pick up most student comments, it will allow the instructor to move about without significant impact in recording volumes.

The final tool is the Camtasia Relay software package, shown in Figure 3, with an encoding license. Without being overly technical, use of Camtasia Relay involves two different software packages. The first is the recording software itself, which resides on the Tablet PC from which the recording is being made. The second is an encoding package, which resides on its own server. Once a recording is complete, it is submitted to the encoder, which then processes the raw recording into a user-selected format and prepares it for delivery to viewers. Delivery options include both private hosting (on your own website) and automatic uploads to well known public sources like iTunes U, Screencast, and others. (TechSmith)

THE PROCESS

Given the tools noted above, the process for recording a lecture is very simple. From the Startup window (Figure 3), select Record to begin recording. This brings up the Recording window (Figure 4) which auto-hides itself but can be brought up to pause/restart the recording or to end the recording. When the recording is ended, the Processing window appears (Figure 5, next page), allowing you to preview your recording, select its publication profile from pre-defined options, give a title and description to your recording, and submit it to the encoding software.

Once a recording has been submitted, the encoding process takes over automatically. The recording files are uploaded, a process which happens in the background and is transparent to the user. This process can also be interrupted and resumed without damaging the recording. After the upload is complete, the encoding software works on a first-in-first-out priority to encode and publish all submitted recordings. Tennessee Tech University (TTU) has chosen to host its own recordings via the university's web servers, so once encoding is complete, the submitting instructor receives an email with the link to their published recording, which they can then

Figure 1. Tablet PC
(Fujitsu)



Figure 2. CAD U7 Microphone
(CAD)



Figure 3. Camtasia Relay Startup
(TechSmith Corporation, 2009)

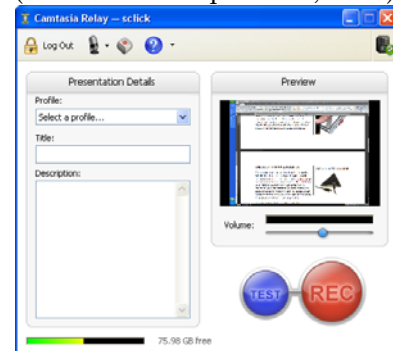


Figure 4. Camtasia Relay
Recording Window
(TechSmith Corporation, 2009)



distribute to students as they choose.

TROUBLESHOOTING GUIDE: ISSUES AND (POSSIBLE) SOLUTIONS

As with any new technology, application in a live classroom requires changes to teaching methods and creates obstacles which must be overcome. The remainder of the paper is dedicated to discussing my experiences as a first-time user of Camtasia Relay on a Tablet PC during class. Included are some of the key issues I faced, including the workaround (or lack thereof) which I used to overcome them. Because these are based solely on my personal experience, rather than being rigorously tested and approved, I have intentionally switched to a less formal, first person narrative.

To help keep these comments in perspective, understand that the course in question is a senior-level elective. From this, we know that the students had at least some level of interest in taking the course, that they have been successful over the past three or more years in engineering coursework, and that the content is of an advanced nature. The first two traits generally lead to an expectation that the recording process would go smoothly, but the latter would tend to test the limits of the medium if it were to be delivered as an asynchronous course in the future.

While recordings were made of every class meeting, this was not a distance-learning course. The goals of the NSF project for which they were made revolve around providing accommodation to students with learning disabilities through lecture recordings which are available throughout the semester. However, the adaptations necessary for providing these recordings are essentially the same as those needed for providing asynchronous course content.

Issues that Weren't

Like most faculty, I entered the semester with a list of expected problems and thoughts on how to work around them. My expectations were built on comments from others and my own imagination. Fortunately, several of these problems turned out not to be an issue.

My initial fear was that students, once presented with an opportunity to view content online instead of in the classroom, would not attend the traditional lecture periods. Perhaps it was because of the course characteristics, but this was never an issue. In fact, I clearly recall having to send a sick student home with a reminder that he could watch the lecture online the next day instead of putting his fellow classmates at risk.

Another fear was that some of my media content would not perform well in the Camtasia environment. I have several technical videos which I use during introductory lectures, all of which performed quite well when recorded in Camtasia. There was almost no loss of video quality, and only minor loss of sound quality (I left the microphone open so that I could talk over the video as it ran). The only incompatibility I have heard of involves an element I do not use: one faculty member indicated that he tried to use a webcam to include a video of his face as he lectured, but only got a black box in the recording.

I also was concerned that the switch from a more traditional PowerPoint on-screen presentation to a Tablet-based presentation would require that I re-design all my course notes. For the most part, this also proved not to be an issue, as Microsoft Journal (the primary pen-based application which I used when presenting lecture material) (Microsoft, 2007) has the ability to import Microsoft PowerPoint (Microsoft, 2007) files as backgrounds, allowing slide annotations during the lecture which were actually easier to use than my traditional screen presentations.

Figure 5. Camtasia Relay Processing Window (TechSmith Corporation, 2009)



It is worth pointing out that those who are traditional “chalkboard” teachers, i.e. those who come to class and write everything on the board as they go, can also use Microsoft Journal, which defaults to a document which looks like a sheet of paper to write on. Figure 6 shows both a blank Journal document and a sample annotated slide with a PowerPoint slide background from one of my lectures.

The annotated slide shows several elements, including an imported PowerPoint slide as a background, ink annotations (pen strokes) in purple, and highlighting annotations in yellow.

It is worth noting that Windows Journal is not the only pen-enabled software package which can be used for annotation. In fact, Microsoft PowerPoint has built-in annotation capabilities. I chose to use Windows Journal for two primary reasons: First, conversion to Windows Journal is made via printer driver, so any file which can be printed can be converted to Journal – DOC, JPG, PDF, PPT, etc. Second, Journal makes a wider variety and more capable set of drawing tools, which improves the annotating experience.

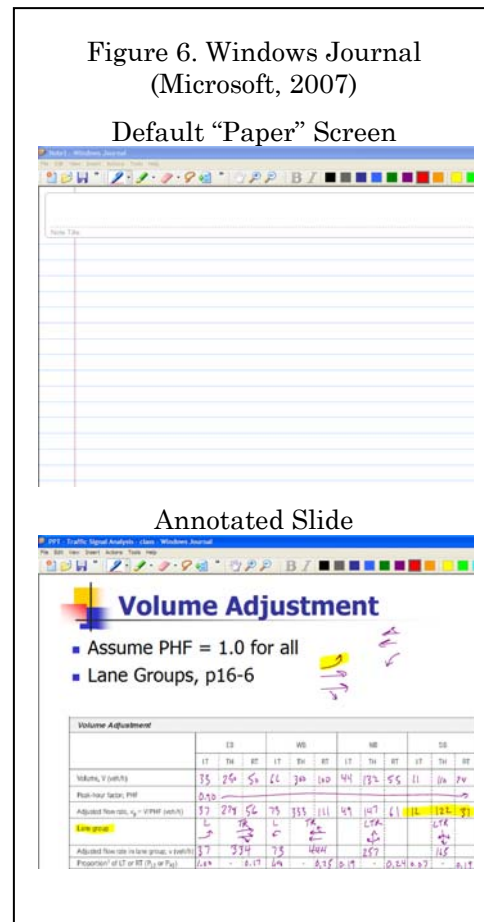
Issues that were Overcome

The biggest issue which I had to address personally was changing my in-class behavior based on the tools I was now using. Previously, my habits included frequently moving around the front of the class, using general hand gestures to emphasize material, and pointing at key elements on the screen as I discussed them; none of which were visible on the lecture recordings. Especially at the beginning of the semester, I caught myself saying things like “right here” while pointing at the projected image, only to realize that someone listening to the recording could see the image but would not know where I was pointing. I had to transition to using the hand, pen, or highlighter tool to identify items on my Tablet rather than pointing directly to them on the board. In that process, I also learned to stay with my Tablet PC, helping to improve the audio quality in my recordings.

Speaking of audio quality, having a clear and reasonably loud audio track was the next issue. As was hinted earlier, despite the use of a reasonably good quality omnidirectional microphone comments from students are at best difficult to hear and make out, and at worst create silent periods within the recording. Keeping myself in reasonable proximity to the Tablet, along with my typical “presentation voice”, there were few if any problems in hearing what I said. I overcame this issue by re-learning a technique that I was taught back in high school – using the question asked as you frame the answer; that is, I either repeated the question verbatim or gave an answer that made it clear what the original question was. I also must emphasize that using a good quality microphone is essential. I can tell a significant difference between recordings made with the built-in microphone on my Tablet and those made with my external microphone. Other options include wireless lapel microphones, but I have no experience with these.

Next, I had issues around the edges of my Tablet PC. The last quarter inch or so of screen, all the way around, does not register writing well. Because I had optimized my original slides to make images and text as large as possible, I frequently had difficulty finding space to write. This essentially is in conflict with the “problem that wasn’t” noted above. If I were creating lecture notes all new for use with Camtasia relay, I would use smaller elements that did not stretch quite to the borders of the slide and I would try to leave a little more blank space on my slides to give additional room for annotation. In the interim, I have learned to use Journal both to zoom in and out to avoid the edges of the screen and to insert a blank page within a presentation, giving plenty of additional space for annotations

An issue that surprised me was the difficulty in connecting my Tablet PC to the in-class projector. Because my assigned classroom has a ceiling mounted projector with wireless connectivity, the original plan was to connect wirelessly from the Tablet so that no new hardwire connections would be needed and so that I could take the Tablet



to any point in the room – allowing students to use it from their seats when working in-class problems. The wireless connection proved a failure, however, and running a new connection to the ceiling-mounted projector also proved excessively difficult, so in the end we purchased a video switchbox so that I could use the existing connection without having to remove it from the existing classroom PC.

A very unexpected issue was getting students to watch the videos. As discussed above, I was concerned that they would skip class and only watch the videos, not the opposite. This actually turned out to be a communication issue, however, as students indicated that they originally thought the recordings were audio only. Once they saw that the recordings included video from the screen, they were much more likely to watch them. Of my class, at least 50% of the students indicated they watched more than half of the lecture videos during the semester.

Issues that Remain

To this point, I have encountered only two problems without a clear solution. The first is by far the biggest – lost recordings. Regardless of the method used to create recorded content, this is always a concern. Admittedly, the Camtasia Relay software has proven very robust in keeping recordings. There are only three instances I am aware of which caused a recording to be lost, and one of those was later recovered. The recovered event was caused by a problem with the encoding server. After the server/encoder issue was addressed, all the in-queue recordings were recovered and resubmitted, the only affect being a delay in their availability.

The other two instances, both of which resulted in a truly “lost” recording, were caused by user error. The first occurred when I began a recording without sufficient drive space for the recording time I needed. Camtasia Relay recorded right up until the drive was full, then quit. In effect, only part of the recording was lost. The software does warn you when your recording space is low, but I thought the remaining space was sufficient. The second occurred to a colleague, who did not plug in his tablet PC when he began his lecture, and the battery ran out during his presentation. In this case, all the recorded content was lost.

The final issue I want to discuss relates specifically to using the recordings for asynchronous content. One goal I have is to record a course during a typical semester and use those recordings to provide an online version of the course during the summer. However, any general course “housekeeping” information – test dates, changes to homework, etc – will not apply to the asynchronous course. While one of the great strengths of using Camtasia Relay is that lack of need for video editing skills, those very skills would allow me to remove the unwanted content. As of now, my plan is to simply tell students in the asynchronous course to ignore such in-lecture announcements and read the summer calendar instead.

It should be noted that for those who have experience with Camtasia Studio (TechSmith), the full featured video production software from the same company that provides Camtasia Relay, any Camtasia Relay recordings can be saved in a format which can be opened and edited using Camtasia Studio. This provides additional flexibility, but requires advanced video edition skills (and time).

CONCLUSIONS AND FUTURE PLANS

The intent of this paper was twofold: to provide an overview of the tools used and to provide a troubleshooting guide for some of the issues which arise from their use. The overview addressed Tablet PCs, microphones, and the Camtasia Relay software. The troubleshooting guide identified several issues in the following categories:

- Issues that Weren't
 - Student attendance to regular class meetings
 - Media content within lectures
 - Converting existing lecture notes
- Issues that were Overcome
 - Changing behavior and gestures
 - Good quality audio
 - Screen space and the edges of the Tablet PC

- Connecting to the classroom projector
- Issues that Remain
 - Lost recordings
 - General course housekeeping

While this does not represent a complete list of all the problems anyone could encounter, it does provide a good starting point and hopefully helps to alleviate the concerns of anyone thinking about recording their class lectures. This trial semester has been a positive experience.

In the future, I plan to record more courses, including a required junior-level course which I hope to later offer as online during summer semester.

ACKNOWLEDGEMENTS

I would like to thank Laura Graves, PI for the NSF project here at TTU, for providing me this opportunity to learn and use new technology in the classroom. I would also like to thank Stacey Plant, Instructional Media Specialist here at TTU, for all her technical assistance as I learned how to use these tools.

REFERENCES

- CAD. (n.d.). CAD Audio U7 USB Microphone. Retrieved December 17, 2009, from CAD Audio: http://cadaudio.com/USB_U7.php
- Fujitsu. (n.d.). Fujitsu Lifebook 4220 Table. Retrieved December 17, 2009, from Fastrack Computing, LTD: <http://www.fastrackcomputing.net/forum/showthread.php?t=1377>
- Graves, L., & Plant, S. (2009). An Attitudinal Study Of Pen Technology And Web-Based Recordings To Accommodate Students With Disabilities In Post Secondary Science, Technology, Engineering, And Math (STEM) Courses. WIPTE Conference. Blacksburg, VA.
- Microsoft. (2007). Microsoft PowerPoint 2007.
- Microsoft. (2007). Windows Journal Version 5.1.
- TechSmith. (n.d.). An overview of Camtasia Relay. Retrieved December 17, 2009, from TechSmith.com: <http://www.techsmith.com/camtasiarelay/overview/default.asp>
- TechSmith. (n.d.). Camtasia Studio. Retrieved December 17, 2009, from TechSmith: <http://www.techsmith.com/camtasia.asp>
- TechSmith Corporation. (2009, December 17). Camtasia Relay, Version 1.1.0.0. Michigan, USA.

Steven M. Click

Steven M. Click, Ph.D., PE, is an Assistant Professor at Tennessee Tech University, where he specializes in transportation operations and design research and education. He received his masters and doctorate from NC State University, and he worked for the North Carolina Department of Transportation for seven years primarily in traffic signal and signal system operations. He is a member of ASEE, and has made several presentations at the ASEE-SE Annual Conference, predominantly focused on technology applied to the classroom.