San Jose State University

From the SelectedWorks of Zhi-Xue Xu

Winter September 2, 2016

Lecture Video Capture in CSU system

Zhi-Xue Xu

Available at: https://works.bepress.com/zhi-xue_xu/11/
Lecture Video Capture in CSU system

Zhi-Xue Xu
Information Technology Services
San Jose State University
Sep. 7, 2016

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Lecture Video Capture in CSU system

Zhi-Xue Xu
Information Technology Services
San Jose State University
Sep. 7, 2016

The CSU system is made up of 23 campuses across the state of California. The California State University educates 474,000 students every year. The CSU has one of the most diverse student bodies in the United States. The lecture capture has been applied in the 23 campuses. Lecture Video Capture is one of the important next generation technologies for Smart Classroom in Academic Technology. The members of Faculty can record their lectures in the smart classroom, and live stream video web broadcast. Through the Video Content Server and Sharing. Students can watch the lecture repeatedly with the permit from the lectures. Lecture capture allows students to review content, pause and rewind in order to deepen their understanding of difficult or detailed concepts. Students can also watch course material at their own pace or review lectures in preparation for exams. Also, lecture capture provides students who miss class with a convenient way to review the lecture. Instructors can also create content in-class and out-of-class for online course development. These Lecture Video Captures can be applied to E-education and distance learning, too.

We also will learn and understand basic knowledge and concept about Lecture Video Capture, and there are three important sections in Design and Development Smart Classroom for Lecturing Video Capture.

These campuses have used different lecture capture software and equipment. The list of Lecture Capture in CSU system has contained software and equipment for each campus. The lecture capture software that has been used on campuses included Cisco Video and Share, Panopto, Camtasia, Kaltura CaptureSpace, Opencast, Mediasite, Clickers, Moodle, Relay Video Capture, Jing, Zoom, MediaVision, Echo360 and so on. We will introduce some software and equipment for Lecture Video Capture that included the basic operations and usages in CSU system. These software and Equipment will be included Cisco Video and Share, Panopto, MediaSite and Camtasia. According to our work experiences, we showed 13 sections about work step-by-step for Video Recording, Recording Screen Capturing, Recording Power Point, Video Editing, Record Camera, Captions, Operate Production Wizard, Use Production presets, Apply Custom settings, Add or Edit Presets, Produce and Share Video, Design and Add Quiz and Share and embed Camtasia video to YouTube and Web page.

1. Introduction to Lecture Capture in CSU system

The lecture capture has been applied in the most 23 campuses. The lecture capture is one of important academic technology, and provided new video technology and
computer technology to education. The members of faculty and students can be more effective to teach and study anywhere and anytime. The lecture Capture has challenged the traditional education method. The Lecture Capture on 23 campus in CSU system has listed in Fig. 1 Lecture Video Capture on 23 campuses in CSU system.

<table>
<thead>
<tr>
<th>CSU Breach</th>
<th>Lecture Capture Software and Equipment</th>
<th>Note and Web site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern</td>
<td>CaptureSpace is premiere lecture capture software, with support to include multiple video feeds such as one or more webcams, room cameras, screen shares, and more. Any presentation can be captured, including full classroom experiences in CSU Chico's origination rooms.</td>
<td>Kaltura CaptureSpace Lite is a presentation production tool that allows users to record any combination of their screen, voice and webcam. Features include: the ability to pause your recording, activate drawing tools, edit the video after recording as well as add titles and credits. CaptureSpace Lite is a standalone application, which means it can be used even without an internet connection. All recorded presentations can be easily uploaded to your my PC with just one click.</td>
</tr>
<tr>
<td>Chico</td>
<td>CSU, East Bay has used Panopto software for lecture capture. Panopto makes it easy to record video presentations, manage your existing video files, and stream your video content to any device. The captured lectures recorded in various East Bay classrooms. In one or more of the courses, the professor has requested that we make recordings available for the review using the East Bay Replay lecture capture application.</td>
<td>Panopto includes a video content management system for uploading, managing and sharing all of your institution’s video and audio files. It’s a centralized, secure place for recorded lectures, flipped classroom videos, campus events, and more. It comes with built-in video analytics, a web-based video editor, automatic encoding to ensure your videos play efficiently on any device, and a unique search engine that helps your students review material mentioned or shown in their course videos.</td>
</tr>
<tr>
<td>East Bay</td>
<td>Humboldt State University as used Opencast for lecture capture. Matterhorn is a free and open source platform to support the management of educational audio and video content. A full-featured example of this broadcast is available at the Opencast/Matterhorn Project site.</td>
<td>Noodle and Youtube</td>
</tr>
<tr>
<td>Humboldt</td>
<td>The Department of Academic Computing advocates on</td>
<td></td>
</tr>
<tr>
<td>Maritime Academy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academy</td>
<td></td>
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</tr>
</tbody>
</table>
behalf of faculty and students in campus matters related to teaching and learning with technology.

These include, but are not limited to:
- Moodle Support
- Faculty training and workshops
- Classroom lab management
- E-Portfolios
- Video production and integration into the classroom and online
- The acquisition and purchase of educational software

**Sacramento**

**Mediasite** offers a classroom lecture capture technology that allows an instructor to easily video record their lecture(s) at selected locations on campus (AIRC 1010, AIRC 1011, Del Norte Hall 1004, Douglass Hall 208, and Library 53). The Mediasite system records the classroom video, audio (i.e., the instructor lecturing), and the podium output (from PC, laptop, or document camera) that displays on the classroom projector. Recordings can then be shared to the Blackboard course with a link from My Mediasite.

**Getting Started with Mediasite: Anytime, Anywhere Lecture Capture**

Sac State’s Mediasite system allows faculty and staff to record, edit, store, and distribute presentations for web delivery. The system integrates with SacCT and can be used to record almost anywhere: in your office, at home, or in the classroom.

Mediasite presentations can include video and audio of the presenter as well as recording anything happening on the computer screen during the presentation.

**San Francisco**

**Clickers** are a widely-used technology tool for increasing student engagement within face-to-face classes. Using a Clicker remote, students can give instant responses to in-class questions. Clickers make it easy for instructors to check attendance, grant participation points, perform

**Services**
- Checkout Equipment
- Classroom Database
- Course Development
- Desktop Support
- Digitization
- Graphics and Printed Materials
- Meeting Rooms
<table>
<thead>
<tr>
<th>San José</th>
<th>Information Technology Services (ITS) provides <strong>Videoshare</strong> (Cisco Show and Share®) a webcasting and video sharing application that helps faculty create secure video communities to share ideas and expertise and personalize the connection between students with user-generated content. San Jose State currently has seven “next generation” classrooms that include audio, visual and lecture capture equipment. The classrooms allow faculty members and students to interact with others remotely, record sessions to view online later and to collaborate through learning management systems such as Canvas. Mobile telepresence units, Wifi and Smartboards allow some of the same tools to be used in other classrooms on campus. The lecture capture technology allows instructors to record class events and activities that instructors can</th>
</tr>
</thead>
</table>
| low stakes quizzes, take class polls, and assess student understanding in real time. | • Photography  
• Request a Service  
• Video Production |
| Technologies | • Clickers  
• CourseStream  
• DIVA  
• ePortfolio  
• iLearn  
• Labspace  
• Student Evaluations of Teaching Effectiveness (SETE)  
• Turnitin  
• Web Conferencing |
| **Videoshare** | **Videoshare** (Cisco Show and Share®) is a webcasting and video sharing application that helps in creating secure video communities to share ideas and expertise and personalize the connection between students with user-generated content. **Videoshare** provides the ability to create live and on-demand video content and define who can watch specific content. It offers viewer collaboration tools such as commenting, rating, and word tagging. 

With **Videoshare** it is easy to upload, edit and share video within the secure network of the university. Instructors can create videos that can be synced with presentation slides making instructional tools and the teaching methodology very effective. With advanced content-viewing security, content authors can control who has access to view content. With Videoshare, you can watch video when you want, how you want, and for how long you want. |
make available to students beyond the classroom hours. This provides a great alternative when students miss class or when they want to review class sessions prior to tests and examinations. This is also a great way to develop online content to augment classroom instruction. This service can also be used by campus staff for recording training. The lecture capture technology is an effective method for creating hours of digital online content.

**Sonoma Lecture Capture**

The traditional method of lecture capture is accomplished by having a single camera and videographer assigned to the classroom. The primary emphasis of lecture capture is to video the instructor, guest speaker or student presenter, as they present the course material. Once the material is captured to video, post-production processing includes basic editing, the addition of identifying opening and closing graphics, and formatting the video for DVD and streaming. Videos of the lecture can be provided on a DVD to the faculty and placed on reserve at the campus Library. One copy of the DVD is also provided to Library for campus archive purposes. The video of the lecture can also be provided as a streaming video. A link to the streaming video will be provided to the faculty, allowing the faculty to incorporate the streaming
video into Moodle, the campus learning management system. The streaming video can also be uploaded to CSUSonoma, the campus YouTube channel. Videos of lectures can be closed-captioned and transcribed to accommodate accessibility requests.

| Central Bakersfield | TechSmith software such as Camtasia Studio 8, and TechSmith Relay are now available to CSUB Faculty Members for their CSUB issued computers. Camtasia Studio and Relay both offer Faculty a way to screen capture their office PC machine desktop and present video lectures to their students. Relay is a quick one-take application that can create a fast screen capture video of lectures. Relay also includes limited editing and captioning on the relay server. Camtasia Studio 8 is a full video and audio screen capturing software that can handle editing video for post production. Camtasia Studio 8 can also publish to the CSUB Streamer server to host your online lectures. TechSmith Software information:  
- Camtasia Studio 8 is a screen capturing and full video editing software. |
- **TechSmith Relay** is a one-take screen capturing software.
- **Jing** is a screen capturing and 5 minute video recording software.

### Fresno

There are many different options for recording your desktop. If your recording is between 5-15 minutes, you can use Jing or Screencast-o-matic.

For longer and more robust recordings Camtasia may be what you are looking for. This software is available for faculty and staff. Contact your IT liaison for installation.

### Monterey Bay

**iLearn/Moodle & Tech in the Classroom: How-To's for Instructors**

**Zoom** synchronous meeting software

Virtual Meetings with Zoom! -- Zoom professional accounts are available for all faculty, students, and staff at CSUMB. Get started at csumb.zoom.us with your OtterID.

### Lecture Capture & Screencasting:

**Zoom Videos to share with students:**
| San Luis Obispo | Lecture Capture: **Panopto**  
Cal Poly Classroom Technologies provides support as available for faculty and staff utilization of **Panopto**, a software based, lecture capture application. This application resides on the user's laptop which supports in-class, ad-hoc or planned recordings anywhere, anytime. iOS platforms are supported.  
The Panopto application supports the recording of a presenter's computer PowerPoint or Keynote presentations plus the presenter's voice from a microphone. Optionally, it is also possible to record the desktop screen (screen capture), and the presenter's image, whiteboard, chalkboard or other physical information from a camera. The Panopto Recorder software is available for both Macs and PCs. | Capture, manage, and search all your video content.  
Panopto Web site |
Panopto recordings ("sessions") are first captured on your host computer. At the end of the recording if the host is online, the recording is immediately uploaded to the server for access via a website. If the host is offline the session will be uploaded to our server when network access is next available. The recording remains on the host computer until manually deleted.

| Stanislaus | Mediasite capture systems are currently installed in seven classrooms on campus: DBH146, DBH164, DBH165, DBH166, DBH167, N112, and S207, with additional classrooms under consideration. These classrooms can be scheduled to automatically capture lectures regularly throughout the semester. OIT also has a portable Mediasite unit that can be set up in any campus room or faculty office for on-demand recording.  
- Recording or capturing the audio and video of lectures and other presentations for later viewing  
- Live broadcasting of campus events over the Internet  
- Storage and delivery of large multimedia instructional materials, such as video clips and audio files used by individual courses |

| Southern | capturing the audio and video of lectures |

Camtasia Studio  
Clickers  
Mediasite Streaming  
Moodle Course WebSites  
Multimedia Services  
VoiceThread  
Zoom Web Conferencing
<table>
<thead>
<tr>
<th>Channel Islands</th>
<th>Zoom Video Conference</th>
<th>System requirement for Zoom Video Conference:</th>
</tr>
</thead>
</table>
|                 | Zoom Conferencing is a cloud conferencing system that provides a video meeting space, lecture capture, and classroom environments. | Recording and Lecture Capturing—  
- Local Recording  
- Cloud Recording |
|                 | Zoom allows for video, audio, and screen sharing between participants. It can be used from any computer, laptop, tablet, or phone, and it works on PC, Mac, Android and iOS devices. A user can initiate a video or audio meeting from anywhere they have internet access. | |

<table>
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<tr>
<th>Dominguez Hills</th>
<th>LECTURE CAPTURE AT CSUDH:</th>
<th>HOW TO BEGIN RECORDING LECTURES</th>
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</table>
|                 | Lecture capture is the process of creating video and audio content for any standard, hybrid, or online course. By recording your voice and computer screen, it allows you to digitally record your classroom lecture or presentation. You can record your PowerPoint presentations and computer screen, either in the classroom or at home, and then share them online with your students. | How do I make the lectures available to my students?  
1. Create a Blackboard content area in your course.  
2. Copy the presentation link that you received by e-mail.  
3. Paste the link into the URL field and submit.  
4. You can also send the link to your students by e-mail. If your presentation is a Blackboard Collaborate recording, it will be available for your students when you finish the recording. Check here for detailed instructions. |
|                 | * Required Equipment: | |
|                 | 1) USB Microphone | |
|                 | 2) Webcam (optional) | |
| Fullerton | Provide Learning Management System (LMS) hosting services to CSU-LA. CSU LA – Moodle |
| Long Beach | Lecture Capture with **Panopto**: **Panopto** provides video capture tools to record presentations, for example, with course materials or for exam reviews in and outside the classroom. Presenters can incorporate PowerPoint slides and/or record activities on a computer screen and post the presentation to a BeachBoard course. Creating Videos Lectures with Panopto (Full PDF Instructions). |
| Academic Technology | Getting Started for **Panopto**: **Recording Videos** The Panopto Recorder allows a lot of flexibility in how and what you can record. A presenter may wish to record alone (with one computer) or with a videographer using a separate computer. Note icon for Broadcasting Live broadcasting is only available for Panopto Windows Recorder for PC. Both versions are capable of recording and uploading videos. Please review the equipment checklist before recording your session. Windows Recorder for PC Basic Recording for PC Mac Recorder Basic Recording for MAC **Panopto Information for Instructors** |
Los Angeles

Educational Technology Support
Beginning with Summer 2016 courses on, Cal State LA will be upgrading to **Moodle version 3.0**.

Information Technology Services is pleased to announce that through a CSU campuses system wide and CSULA site license agreement with TechSmith, Camtasia Studio and Snagit for Windows and Mac are now available upon request for installation on faculty and staff Baseline computers. In addition, these software applications are also available for faculty and staff for home use.

- Camtasia Studio for Windows and Camtasia Mac - This is a powerful, but easy-to-use, screen recording and video editing software that enables users to create professional videos. Users can record or input video, edit and customize content, and then share the videos with viewers on nearly any device.
- Snagit for Windows and Mac - This is a screen capture software that allows users to "snag" screen content, enhance it with effects, and then share the document instantly. Users can quickly

Moodle 3.0

Uploading Video to Youtube

Iclicker
and easily enhance documents with visuals that clarify, explain and enhance the message.

### Northridge

Lecture Capture is currently available in the following rooms:
- Noski Auditorium (NA 101)
- Juniper Hall 1103 (JH 1103)
- Chaparral Hall 5122 (CR 5122)
- Chaparral Hall 5125 (CR 5125)
- Chaparral Hall 5126 (CR 5126)
- Kurland Hall (LA 181)
- Nobbs Auditorium (SQ 104)
- Johnson Auditorium (JA 100)
- Nordhoff Hall 113 (NH 113)

### Personal Lecture Capture and Lecture Creation

Outside of these classrooms, faculty can use software on their Macs or PCs to capture and create video lectures. YouTube and Camtasia are the recommended options;

### Pomona

Lecture Capture System Piloted

I&IT and Academic Affairs are piloting Echo 360, a lecture-capture system that allows professors to post their lectures on the Internet.

### Information Technology

MediaVision is responsible for the campus cable system, video streaming and conferencing services, video production, and for the distribution of video programming.
<table>
<thead>
<tr>
<th>San Bernardino</th>
<th>Zoom is CSUSB’s new tool for video and web conferencing</th>
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<tbody>
<tr>
<td></td>
<td>Zoom, for HD video and audio conferencing and screen sharing, is now available to all CSUSB students, faculty and staff. Zoom can be used from any PC, Mac, iPad, iPhone, Android device or phone line, and includes H.323 and SIP Room Connector for participants to leverage existing legacy devices, including Polycom, Tandberg, LifeSize and others. You can access zoom by clicking on <a href="http://csusb.zoom.us/">http://csusb.zoom.us/</a> or through the quick launch button on MyCoyote, and signing in with your Coyote ID and password. Student usage examples:</td>
</tr>
<tr>
<td></td>
<td>Zoom video conferencing</td>
</tr>
<tr>
<td></td>
<td>Camtasia</td>
</tr>
</tbody>
</table>
- Quick and easy group meetings when time and/or weather do not permit
- Group members who can't attend in person can be part of a meeting
- Recording feature allows users to save a session for future reference and send to members who aren't able to attend
- Meeting with instructors and professors
- Talking with friends and family

Faculty and staff usage examples:
- Staff meetings
- Working with vendors
- Virtual office hours
- Meeting with students
- Teaching from a remote location
- Guest speakers from remote locations

<table>
<thead>
<tr>
<th>San Diego</th>
<th>Mediasite Automated Course Capture</th>
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<tbody>
<tr>
<td></td>
<td>Mediasite Automated Course Capture is available in the following rooms:</td>
</tr>
<tr>
<td></td>
<td>• AH 2108</td>
</tr>
<tr>
<td></td>
<td>• AL 201</td>
</tr>
<tr>
<td></td>
<td>• COM 207</td>
</tr>
<tr>
<td></td>
<td>• ENS 280</td>
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<tr>
<td></td>
<td>• GMCS 301 and GMCS 333</td>
</tr>
<tr>
<td></td>
<td>• HT 183</td>
</tr>
<tr>
<td></td>
<td>• NE 60</td>
</tr>
<tr>
<td></td>
<td>• PS 130</td>
</tr>
<tr>
<td></td>
<td>• SHW 011 and SHW 012</td>
</tr>
<tr>
<td></td>
<td>• WC 220</td>
</tr>
</tbody>
</table>

How it works:
• Complete our brief Mediasite request form
• We will schedule your recordings

ITS YouTube channel
<table>
<thead>
<tr>
<th>San Marcos</th>
<th><strong>Mediasite</strong>-equipped rooms - for the best production values</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Our <strong>Mediasite</strong> recording systems are built into rooms designed for maximum visual and aural impact. With professional lighting, acoustic treatments, multiple cameras, document cameras, microphones, and other pro features, our Mediasite facilities are designed to make you look and sound your best. Sometimes we can even move your entire class into Markstein 104.</td>
</tr>
<tr>
<td></td>
<td>Facilities equipped with Mediasite recording systems:</td>
</tr>
<tr>
<td></td>
<td>• Kellogg Library 2415 - small Mediasite studio</td>
</tr>
<tr>
<td></td>
<td>• Markstein 104 - distance learning classroom with Mediasite capability</td>
</tr>
<tr>
<td></td>
<td>• Markstein 125 - lecture hall with Mediasite capability</td>
</tr>
<tr>
<td></td>
<td><strong>Mediasite Desktop REcorder</strong></td>
</tr>
<tr>
<td></td>
<td>Screencast + Video</td>
</tr>
<tr>
<td></td>
<td><strong>Media Delivery</strong></td>
</tr>
</tbody>
</table>
Use the Mediasite request form to book a session in one of these rooms. One of our staff will be there to help you get started.

Fig. 1 Lecture Video Capture on 23 campuses in CSU system

2. Basic knowledge and concept about Lecture Video Capture

Lecture capture is technology that allows instructors to record their lectures either in or out of the classroom. It enables students to review lectures, which can improve learning and grades. In classroom lecture capture enables the recording of all audio and video sources used in the classroom. Lecture capture will also record any audio picked up by either the wireless microphone or microphone built into the podium.

There are three important sections in Design and Development Smart Classroom for Lecturing Video Capture. The three sections included Endpoint with Camera and Microphone, and Video Content Server for capture, Transform and show and share. Cisco has developed the equipment and hardware with software that included Video Codec, Content Server, Media Experience Engine, and show and share for Video Capture to High Education in the classrooms. Cisco Technology Partner Vyopta also provided the software for the Video Content Management, vControl and vPublish. Adobe also had applied Flash Video Server 5 for codec video streaming and content server with Linux and Windows Servers to High Education on campus.

The general concept of Design and Development Smart Classroom for Lecturing Video Capture is the following:

- **Endpoint:** The Endpoint included Camera and Microphone, and Video Content Server for capture. The video capture can be recording to Content Server in Windows, Mac and Linux computer servers. Cisco has provided Cisco codec C40 and C90 for Endpoint.

- **Transform:** We need a Media Experience Engine that can be built in Windows, Mac and Linux computer servers, can be integrated content server together. The Web Server and Database in the Media Experience Engine will be used to Live Web Video Broadcasting and Show and Share. Cisco can provide Media Experience Engine: Cisco MXE 3500.

- **Show and Share:** The Show and Share is a Web software application. Cisco has developed this Show and Share Software for much equipment that also can be integrated to Cisco MXE 3500. We can also use YouTube, Vimeo, 56.com and so on to video Show and Share.
General Concept of Design and Development for Video Lecture capture in the Smart Classroom

1. End point:

2. Transform:

3. Show and Share

Fig. 2 General Concept for Lecturing Video Capture
3. Lecture Capture Software and equipment Cisco Video Capture, Panopto, MediaSite and Camtasia in CSU System

We will introduce some campuses have been successful to apply the software and equipment to the Lecture Video Capture.

3.1 Cisco Lecture Capture Equipment and Software in San Jose State University

The Cisco Lecture Vision solution offers a comprehensive approach to managing educational content. Cisco TelePresence® Content Server makes it easy for lecturers to record content from any H.323 or Session Initiation Protocol (SIP) videoconferencing unit with a built-in, easy-to-use web-based interface. The recorded lecture can then be transcoded and enhanced using Cisco Media Experience Engine, with the option to include graphical elements and even tags for easy navigation and consumption. The lecture can then be published using the Cisco Show and Share® application, a webcasting and video-sharing solution that enables simple archiving and retrieval of stored video assets, giving students the option to watch the content on desktops, mobile devices, or the Cisco TelePresence system.

Cisco TelePresence System Codec C90 has been applied to the Next Generation Classrooms as Smart Classrooms in San Jose State University.

Fig. 3 Lecture Video Capture in the Classroom, San Jose State University

There is a Vyopta vControl for vPublich to Presentation, Call, Meeting and Record in the Smart Classroom.
Fig. 4 vControl Screen for Lecture Control

I. Presentation
We can be using Computer, Document Viewer and Camera for I. Presentation.

II. Call
We can make any calls with phone numbers.

III. Meeting
The meeting can be hold by WebEx.

IV. Record
The video lecture capture can be recorded in the smart classroom.

Vyopta is Cisco Partner. Vyopta has developed the Show and Share for Video Lecture Capture program and software with Cisco TelePresence endpoint: C 90, content server and MXE 3500 in the Smart Classroom by vPublish. Vyopta vPublish provided video recording and upload video for Show and Share with graphic user interface. San Jose State University will develop and create 51 Next-Generation Learning smart classrooms with Cisco & Vyopta.

3.2 Panopto software for Lecture Capture on East Bay, Sab Luis Obispo, and Long Beach campuses

Panopto is the most flexible, easy-to-use lecture capture solution on campus. The campuses East Bay, Sab Luis Obispo, and Long Beach have used Panopto for Lecture Video Capture. The Panopto software for Windows and Mac is easy to install and easy to use. The remote recording capability makes it easy to schedule lecture recordings in advance. And the multi-camera video
capture makes it easy to capture the instructor, the content of their screen, a document camera, a digital whiteboard, and more.

3.2.1 CSU, East Bay has used Panopto software for lecture capture

East Bay has used Panopto software for lecture capture. Panopto makes it easy to record video presentations, manage your existing video files, and stream your video content to any device. The captured lectures recorded in various East Bay classrooms.

Panopto includes a video content management system for uploading, managing and sharing all of your institution’s video and audio files. It’s a centralized, secure place for recorded lectures, flipped classroom videos, campus events, and more. It comes with built-in video analytics, a web-based video editor, automatic encoding to ensure your videos play efficiently on any device, and a unique search engine that helps your students review material mentioned or shown in their course videos.

Fig. 5 Panopto in CSU East Bay

Lecture Capture Services as follows:
- Change Recording Schedule
- Laptop Installation
- Quarter Long Course Lecture Recording
• Single Event/Classroom Recording
• Studio Recording
• Report an Incident/Problem

In one or more of the courses, the professor has requested that we make recordings available for the review using the East Bay Replay lecture capture application.

3.2.2 Panopto software in CSU Sab Luis Obispo

Cal Poly Classroom Technologies [http://www.classtech.calpoly.edu/lecture-capture-panopto](http://www.classtech.calpoly.edu/lecture-capture-panopto) provides support as available for faculty and staff utilization of Panopto, a software based, lecture capture application. This application resides on the user's laptop which supports in-class, ad-hoc or planned recordings anywhere, anytime. IOS platforms are supported.

![Fig. 6 Cal Poly, Lecture Capture: Panopto](image)

The Panopto application supports the recording of a presenter's computer PowerPoint or Keynote presentations plus the presenter's voice from a microphone. Optionally, it is also possible to record the desktop screen (screen capture), and the presenter's image, whiteboard, chalkboard or other physical information from a camera. The Panopto Recorder software is available for both Macs and PCs.
Panopto recordings ("sessions") are first captured on your host computer. At the end of the recording if the host is online, the recording is immediately uploaded to the server for access via a website. If the host is offline the session will be uploaded to our server.
Through our campus Panopto website (panopto.calpoly.edu) users can:

- rename sessions,
- make simple edits,
- create links for PolyLearn (Moodle) and privileges for viewing,
- attach pdf documents,
- download the recordings as mp3’s, podcasts, etc., and review viewing statistics.

There is no charge for Panopto use by Cal Poly faculty or staff. If captions of audio portions of the recordings are required, there is a charge for captioning services. Conveniently, recorded sessions may be captioned automatically at any time with a single click.

3.2.3 Lecture Capture with Panopto in CSU Long Beach

Panopto provides video capture tools to record presentations [http://web.csulb.edu/divisions/aa/academic_technology/itss/capture/](http://web.csulb.edu/divisions/aa/academic_technology/itss/capture/), for example, with course materials or for exam reviews in and outside the classroom. Presenters can incorporate PowerPoint slides and/or record activities on a computer screen and post the presentation to a BeachBoard course. The detail information about Lecture Capture with Panopto in CSU Long Beach can be found in Fig. 9 Lecture Capture with Panopto in CSU Long Beach.

Fig. 9 Lecture Capture with Panopto in CSU Long Beach

Creating Videos Lectures with Panopto in CSU Long Beach:

The Panopto Recorder allows a lot of flexibility in how and what you can record. A presenter may wish to record alone (with one computer) or with a videographer using a separate computer.
Note icon for Broadcasting Live broadcasting is only available for Panopto Windows Recorder for PC. Both versions are capable of recording and uploading videos.

How to record / broadcast videos using Windows PC or Mac:

Windows Recorder for PC

Launching Recorder

- Go to http://beachboard.csulb.edu and log in with your Campus ID and password.
- Click the course that is setup with Panopto.
- Click "Lecture Videos”. A new window will be automatically open and you will be redirected to the Panopto page.
- Click “Record” in the top right of the Panopto page.

![Panopto Focus](image)

**Fig. 10 Lecture Videos by Panopto**

Once you have chosen your folder or are just recording offline, you must next choose exactly what you would like to record. You can select a video capture device such as a webcam or video
camera (optional). After that, you can also choose what you want to use to record your audio. This could be a microphone or even the same device as your video if it has a built in mic.

![Panopto Focus screenshot]

Fig. 11 Screen Capture and PowerPoint Panopto

CSU Long Beach has provided good Panopto information for instructors [http://web.csulb.edu/divisions/aa/academic_technology/itss/capture/](http://web.csulb.edu/divisions/aa/academic_technology/itss/capture/). This information included download software, Getting start, copy and move a recording to additional course sections, and How to watch a Recording or Live Broadcast.

3.3 Mediasite software for Lecture Capture on Sacramento, Stanislaus, San Diego, and San Marcos CSU

Mediasite Video Platform is the most automated and scalable system for creating, publishing, searching and managing all of the video. Mediasite lecture capture does more than that: it improves the experience of learning. And it does so for everyone involved in creating that experience.
Mediasite lecture capture is completely non-disruptive: there’s nothing they have to change about how they teach. Mediasite works entirely behind the scenes, managing recording schedules, equipment, cataloging and publication.

Fig. 12 Mediasite Video Platform - Sonic Foundry

3.3.1 CSU Sacramento are using Mediasite software for lecture capture

Sac State's Mediasite system allows faculty and staff to record, edit, store, and distribute presentations for web delivery. The system integrates with SacCT and can be used to record almost anywhere: in your office, at home, or in the classroom.
Mediasite presentations can include video and audio of the presenter as well as recording anything happening on the computer screen during the presentation.

Information Resources and Technology, CSU Sacramento has provided Classroom Streams and Recordings, Mediasite Link on Blackboard, Store and Distribute Video Files, Editing Mediasite Videos and Slides and Making Videos Public.

**Work steps of Classroom Streams and Recordings:**

Whether it's a live stream or a video on-demand, Mediasite videos can be added to any content page in SacCT. This can be done on an existing page, or a newly created content page.

- Under the "Build Content" menu, two Mediasite options are available to add content, "Mediasite - Link to Presentation" and "Mediasite - Link to Catalog.

  **Mediasite - Link to Presentation(s)**

  This option allows user to add individual videos or presentations to the page. This is recommend if users split their courses into sections or weeks. Every new video recording would need to be manually added by the user.
Mediasite - Link to Catalog

This option allows users to add their whole course of videos at once. For faculty in the studio classroom, we recommend using this option.

Fig. 14 Build Content, Mediasite

- Use the search tool to locate the name of either the catalog, or the video.

Build content window for Mediasite videos

- A list of content will appear after a short search. Use the buttons next to the content to select which video or catalog to attach. Users may change the Tile or Description of the video or catalog. The blue “Submit” button will attach the content.

Work steps of sharing a My Mediasite link on Blackboard:

- Finding a video link in My Mediasiate
  a. Go to [https://csus.mediasite.com/mediasite/mymediasite](https://csus.mediasite.com/mediasite/mymediasite)
  b. Log in with your Saclink username and password.
  c. Click on the video that you would like to share.
Fig. 15 Create Presentation, Mediasite

d. Click on the Share tab.

Fig. 16 Share Tab in Presentation, Mediasite

e. Select and copy the provided link.
Fig. 17 Select and copy the provided link

- Posting a Mediasite link in SacCT
  a. Log in to SacCT.
  b. In the **My Courses** tab, click on the course you are posting the link to.

![My Courses Tab](image)

Fig. 18 My Course Tab

- Go to the **Content** page.

![Content page](image)

Fig. 19 Content page

- Click the **Build Content**. A blue window will then appear.
- Under the **Create** list, click **Web Link**.
f. Add a title for the link in the **Name** field. Then paste the Mediasite link in the **URL** field. In the **Description** text box, add a description of the link.

![Create Web Link](image)

**Fig. 21 Create Web Link**

**g.** Press **Submit** to complete the process.

Mediasite Lecture Capture has been used on Sacramento campus, CSU. The detail information about Mediasite Lecture Capture can be found in [http://www.csus.edu/irt/tlc/media/mediasite.html](http://www.csus.edu/irt/tlc/media/mediasite.html).

**3.3.2 CSU Stanislaus are using Mediasite software for lecture capture**

Mediasite capture systems are currently installed in seven classrooms on campus: DBH146, DBH164, DBH165, DBH166, DBH167, N112, and S207, with additional classrooms under consideration. These classrooms can be scheduled to automatically capture lectures.
regularly throughout the semester. OIT also has a portable Mediasite unit that can be set up in any campus room or faculty office for on-demand recording.

- Recording or capturing the audio and video of lectures and other presentations for later viewing
- Live broadcasting of campus events over the Internet
- Storage and delivery of large multimedia instructional materials, such as video clips and audio files used by individual courses

3.3.3 CSU San Diego are using Mediasite software for lecture capture

CSU San Diego has provided Lecture Capture by Mediasite. Mediasite Automated Course Capture is available in the rooms: AH 2108, AL 201, COM 207, ENS 280, GMCS 301 and GMCS 333, HT 183, NE 60, PS 130, SHW 011 and SHW 012, and WC 220.
Fig. 23 Course Capture by Mediasite in San Diego State University

For more information on how the Mediasite system captures your course and delivers the recording to your students, please watch our Mediasite Welcome Video.

Fig. 24 Mediasite for lecture capture in San Diego, CSU

CSU San Diego also is using TechSmith Relay Screen Capture and Camtasia Video Editor.

3.3.4 CSU San Marcos are using Mediasite software for lecture capture
CSU San Marcos has designed to make you look and sound your best with professional lighting, acoustic treatments, multiple cameras, document cameras, microphones, and other pro features by using Mediasite. Sometimes they can even move your entire class into classroom.

Facilities equipped with Mediasite recording systems:

- Kellogg Library 2415 - small Mediasite studio
- Markstein 104 - distance learning classroom with Mediasite capability
- Markstein 125 - lecture hall with Mediasite capability

![Mediasite Control Panel]

Fig. 25 Lecture Capture by Media Delivery, San Marcos, CSU

Record Your Computer Screen:

Using the Mediasite Desktop Recorder you can record:

- Demos and Trainings
- Lectures
- Flipped Classroom Lessons
- Assignments
Mobile Video and Uploads

- Upload video from your phone or tablet
- Upload video recorded from other programs
- Supports over 100 formats

Manage Your Videos

Fig. 26 Record Computer Screen

Fig. 27 Manage Your Videos
• Organize Your Videos
• View analytics for your presentations
• Keep viewers engaged with interactive polls, ask-a-question, post-video surveys and related resource links
• Simplify and reinforce study habits with content bookmarks and sharing

Edit Your Videos

• Crop and cut video incorporating fades or transitions
• Add video intros, outros, chapters and watermarks
• Update or replace slides

Facilities equipped with Mediasite recording systems:

• Kellogg Library 2415 - small Mediasite studio
• Markstein 104 - distance learning classroom with Mediasite capability
• Markstein 125 - lecture hall with Mediasite capability

Most instructional media content at CSUSM is delivered by our Mediasite system. Mediasite is a media delivery hub that allows efficient delivery of video and audio content to pretty much any modern device - like our own private YouTube. Note the word "private". Access control using campus credentials means that only the students in a particular section can view content during the course, protecting your content and allowing us to use copyrighted content under Fair Use.

3.4 Camtasia has been applied to Lecture Capture on CSU Northridge, San Bernardino, Bakersfield, Fresno and most campuses

Camtasia helps you create professional videos without having to be a video pro. Camtasia has been applied to Lecture Capture on CSU Northridge, San Bernardino, Bakersfield, Fresno and most campuses. We have applied Camtasia to Lecture Capture and Video Production for several years. We would like to introduce the Applications and Essential Step-by-Step Operations in Camtasia.

3.4.1 Step-by-Step: Video Recording

Recording Overview

The Camtasia Recorder can capture the entire screen or a section of the screen, specific dimensions, a selected window, or an application. The Recorder can be used friendly and it is easy to use. Basically, just click the Record button and you will start recording the screen.

Installation of Camtasia

You can got TechSmith Webpage http://www.techsmith.com/camtasia.html to download Camtasia.
Fig. 28 TechSmith Webpage to download Camtasia

Click Free Trial, and get Download Camtasia page

Fig. 29 Download Camtasia page

Click download Trial for Window or Mac
Fig. 30 View and track your download
Click next in the installation wizard

Fig. 31 Installation Wizard for Camtasia Studio
Mark I accept the Licensee Agreement, and click next

Fig. 32 Licensee Agreement
Typing your name and key number, click next

Fig. 33 Name and key number for License
Click next to agree the installation folder

Fig. 34 Installation folder
Click next, and Enable Camtasia Studio add-in for Microsoft PowerPoint

Fig. 35 Enable Camtasia Studio add-in for Microsoft PowerPoint

Click next, ready to install the Application

Fig. 36 ready to install the Application
Click next, and Update System

Fig. 37 Update System

Click next, Camtasia has been successfully installed

Fig. 38 Camtasia has been successfully installed
Click next, Thanks for installing Camtasia Studio.

Click Start Learning, and get main Camtasia home page.
Camtasia Studio Recorder

First we need to launch the Camtasia Studio Recorder. There are multiple ways to open the Recorder and start recording. Multiple methods for launching the Camtasia Studio Recorder as follows:

- Record the Screen — a button that opens a dropdown menu option within the Editor

Click Record the Screen button, Open the record screen. Figure 1 showed the record the screen menu.

Fig. 41 Record the Screen menu

- Menu options — a Menu option dropdown within the Editor

Click Tools -> record the screen, you will get recorder menu.
Fig. 42 Tools menu included record the screen

• Welcome Window — a dialog box that opens once the Editor is launched

Click Help button, the pop down Help menu will be showed. The show Welcome Window will be included.

Fig. 43 Help menu that included the Show Welcome Window
Also, you can create icon and use Hotkey Command — a key stroke within the Editor to launch record the record.

3.4.2 Step-by-Step: Recording Screen Capturing

After you launch the screen record, you can begin to record. The Camtasia Recorder like as a video camera to record full or selected area of the computer screen. The recording area will be captured with the Recorder.

Once you’ve prepared your project and checked your settings, you are ready to record your screen. Think of Camtasia Recorder as a video camera that is recording the full or selected area of your screen. Every action within the recording area will be captured with the Recorder while everything outside will not be recorded.

1) Open Camtasia Studio Recorder

Open the Recorder when you are ready to capture the screen by clicking the record the screen button from the Record the Screen, welcome dialog box or from launch options.
2) Select the area of the screen to capture (Full or Custom)
3) Click the Audio button to activate audio recording

![Audio configuration for recording](image)

**Fig. 47 Audio configuration for recording**

4) Audio Input

![Audio Input](image)

**Fig. 48 Audio Input**
5) Click Tools > Recording Toolbars to add recording tool options

Fig. 49 Tools menu in the Camtasia Recorder

Click options, the Tools Options will be showed.

Fig. 50 Tools Options in the Camtasia recorder
6) Hit the F9 (default) hotkey or the Record button to start recording

![Record Button or Hit the F9 (default) hotkey](image)

Fig. 51 Record Button or Hit the F9 (default) hotkey

7) Record the screen project, Hit F10 (default) hotkey or the Stop button to end recording, and Preview the recording in the Recorder Preview Window

![Recorder Preview Window](image)

Fig. 52 Recorder Preview Window
Click the Save and edit button to save the file as a .camrec file and open the recording within the Editor for editing.

8) Open record video file in the Camtasia for editing.

![Record video file in Camtasia for editing](image)

**Fig. 53 Record video file in the Camtasia for editing**

### 3.4.3 Step-by-Step: Recording Power Point

Camtasia Studio can record Microsoft PowerPoint® presentation that included recording audio, video, and camera Picture-in-Picture. The recorder user can add each slide during recording. The Power Point record files can be opened by Camtasia Editor and produced for immediate sharing.

The essential work steps for recording PowerPoint presentation is the following:

1) Open Power Point file as follows.
2) Open PowerPoint, and Click Add-INS.

3) Open Camtasia, and click Produce and Share button.
Fig. 56 Record the screen menu in Camtasia

4) Go back to Power Point, and click record button. The following screen will be showed.

Fig. 57 Recoding paused: confirmation. Recording Power Point presentations.

5) Hit esc button, and get stop recording menu.
6) Save Power Point recording file

7) Click edit your recording in the Camtasia Studio for PowerPoint menu
Fig. 60 Camtasia Studio for PowerPoint menu

8) The PowerPoint recording file will be showed in Camtasia Studio after Click edit your recording

Fig. 61 PowerPoint record File in Camtasia Studio

9) Play the PowerPoint record File
10) Click Produce and Share button, and chose Custom production settings
Fig. 64 How to produce the video

11) Choose WMV- Windows Media Video

Fig. 65 Choose WMV- Windows Media Video

12) Click next in the wizard, and define video profile: Best Quality and File size (Recommended)
13) Click next in the wizard, and define video size

14) Click next in the wizard, and chose video option, HTML for creating a Web page.
Fig 68 video option: Embed video into HTML

15) Click next in the wizard, and define marker options: Dates, Final Exam times and Slide 4

Fig. 69 marker options: Dates, Final Exam times and Slide 4

16) Click next in the wizard, Produce video, type Production Name, folder and post production options.
17) Click Finish in the wizard, produce video

18) The produce video file can be found in the folder
19) Click video file, and play the video in Windows Media Player
3.4.4 Step-by-Step: Video Editing

Once you finished recording video, you need to edit and develop the video files. We induce Step-by-Step operations for Video Editing. The Step-by-Step operations for Video Editing will be included Clip Bin and Library, Preview Window and Timeline, and Task Tab Enhancing.

a) Editor Overview

The Camtasia Studio Editor can work as a stand-alone program or in conjunction with the Camtasia Recorder and PowerPoint Add-in. When using the Editor, you can combine, cut, arrange, and add special effects, and other features to video, audio, and image clips. By combining them together, you can produce your own video project.

Like the Recorder, the Editor uses its own file format to save files. The .amproj format is a native editor format that can only be opened and used with the Camtasia Editor. The recorder’s .camrec files are used within the Editor.

b) Step-by-Step: Importing Video Files

The editor interface is split into three main sections. They are the media and task tabs, preview area, and the timeline.
• Media and Task Tabs — tabs that hold media and tools to create and perform selected features
• Preview Window — previews the selected area of the timeline where the playhead is positioned
• Timeline — shows all of the frames, tracks, and features of your project including videos, images, audio, special effects, and other features

The preview area and timeline work in direct correlation with each other (See Fig. 3.50).

Fig. 75 Camtasia editor interface

The clip bin lists all media that was involved in the current project. It is like a catalog of selectable media that organizes media files to make it easy to find and to select the files that you would like to use in the current project.

The media is not embedded into the project yet but there’s a link to that media where it is located on the computer. You can use the same media clip multiple times throughout the timeline and cut, slip, or add effects to them individually.

All imported media files are imported into the Clip Bin. A screen recording is automatically imported into the clip bin if the Save and Edit option is selected when saving the recording.

The clip bin organizes the files by the type of media they contain, such as Camtasia recording, image, audio, or video files. You can constantly add and delete media to the clip bin.
Quick List: Importing Media Files into the Clip Bin

1) Click Camtasia Studio icon, and open the Editor

Fig. 76 Open the Editor

2) Click File, and click Import Media menu

Fig. 77 Click Import media in File menu
3) An open file navigation window will pop up after click Import media

![Open file navigation window](image1.png)

Fig. 78 open file navigation window

4) Select the files to be imported

![Video file to be imported](image2.png)

Fig. 79 Video file to be imported and media files appear in the Clip Bin
c) Step-by-Step: Adding Media to Library

We can use the Library tab and Clip Bin tab for your project editing. They have most of the same functions. The differences are that the media added to the clip bin is only for the current project, media added to the library will be available for all projects using the Editor.

The Library starts loaded with royalty-free media from TechSmith that are available to use in your projects. These files are also useful as test media for practice projects.

The Library can store an array of media including video, image, audio, effects, and timeline groups. Double click on a file listed in the Library to preview the media in the Preview Window.

1) Click Library button, and get the contents in the Library
2) Creating new folder to the Import media to Library selection

3) Type my media on the new folder
4) Click Import media to folder, and get explore window

You can add music, video, images and audio to the library for the future projects.
d) Step-by-Step: Working with the Preview Windows for Canvas, Cropping media, Dimensions and Playback Options

1) Working with the Canvas

The most of the work we will be doing will take place on the Canvas area. This area is not just a playback window, but a work area where we can select clips and adjust them to fit your project needs.

The Preview Window contains Canvas, playback controls, and view options area.

Fig. 85 Preview window, view options, canvas, and playback controls area

After the media is placed into the timeline, the Canvas will be the work area to arrange, rotate, resize, and move the media.

There are two main ways to select media on canvas. You can select media on the canvas itself or in the timeline. Multiple clips can be selected on multiple tracks to move or arrange at the same time. These multiple selections can be grouped together to be saved to the library, copied, arranged, or moved as a one.

Selecting Single Media

Click on a media clip with the mouse button in the timeline or on the canvas. The media box will highlight in the canvas and the clip will turn blue in the timeline.
Fig. 86 Selecting Single Media on the canvas

Selecting Multiple Media Objects

Click on the first clip, then press and hold the Shift key down while clicking on additional clips. This will highlight the multiple clips in the timeline and on the canvas. You can also select multiple clips by clicking on an empty portion of the timeline and click and hold the mouse button down over the clips then release the mouse button when all the clips are highlighted.
Fig. 87 Selecting Multiple Media Objects on the canvas

In both the single and multiple clip selection, if the playhead moves away from the clip in the timeline, a dotted outline of the selected clip will still show on the canvas. This is useful when you are working on positioning or transforming clips that are located on different sections of the timeline.

We also can do Grouping Media Selections.

After selecting multiple clips, right click over one of the selections and click on the Group listing in the context menu.
Fig. 88 Group is highlighted in the context menu

The files will collapse into a new grouped clip in the timeline. This grouped clip can be expanded to show all the clips enclosed within by clicking the plus sign in the upper left corner of the grouped. The clips inside the group can be edited and adjusted the same as clips outside the group.

Groups can be selected and combined with new clips to form a new group. Transitions and animations can also be selected to be grouped with the clip files. Group clips can be renamed to identify them on the timeline and then the groups are collapsed.

To ungroup the grouped clips, select the group and right-click. To open the context menu, click on Ungroup from the list.

2) Cropping Media

Media from the clip bin or library are not always cropped to fit your project. To crop the media in the timeline, select the Crop button in the View Options panel in the upper right hand side of the preview window.
Fig. 89 Information about Crop in the view options

When the Crop button is activated, the selected media outline box will turn blue. Video and image clips can be cropped to match or trim the media.

3) Editing Dimensions

In the upper-left hand side of the Preview Window is the Editing Dimension button that launches the Editing Dimension dialog box.
Fig. 90 what size do you want your video to be?

The dropdown menu can change the dimensions of the overall video project. There are preset sizes along with the recording video size. You can add custom sizes and types into the Width and Height fields. It is recommended to keep the aspect ratio box checked. The dimensions can be changed anytime throughout the editing process, however it is recommended to keep the project at the recording dimensions or at the size of the end use of the video project.

4) View and Playback Options

The last three icons in the View Options panel except cropping changes the view of the previews but does not change the dimension of the video project.

- The hand icon is the pan toggle. When activated, it will grab and move the canvas view window but not the media clips within the timeline. This is useful to navigate around the view area when zoomed into the canvas.
- The Full Screen button will launch the preview window to Full Screen mode. Hit the ESC button to exit the mode.
- The Video Detachment button will release the View Preview from the interface to float in a movable and adjustable window over the interface. Select the button again to attach the window back into the interface.
Fig. 91 Cropping, hand, hand, full screen and Detachment

Playback

Select the Play button in the Preview Window to start the playback of your project. The spacebar toggles the playback between start and stop. From the Menu Options > Play are more controls for the project playback including Play from the Beginning selection.
e) Step-by-Step: Working with the Timeline for Tracks and Playhead

Most of the work during the editing process will be done on the timeline. Media will be imported into the timeline tracks. Once on the timeline, these clips can be edited, moved, enhanced with special effects, and selected for production. During video playback, the playhead will follow along keeping the current frame and moving the timeline accordingly. The timeline has 15 areas (timeline toolbar, tracks, added tracks, toggle marker and quiz track view, marker or quiz track, time duration tracker, playhead, markers, clips, snap guides, animation indicator, transition indicator, and lock tracks toggle).

Fig. 93 areas in the timeline

a. Timeline toolbar — holds the magnifying slider, redo and undo, cut, split, copy, and paste
b. Tracks — area lines to add media, animation, and special effects
c. Add Tracks — a button to add tracks
d. Toggle Marker and Quiz Track View — opens and closes the marker and quiz track
e. Marker or Quiz track — a collapsible track holding the markers and quizzes
f. Time Duration tracker — indicates where in the duration of the timeline, the media and playhead are located
g. Playhead — a slider that can select and move throughout the duration of the timeline that is linked to the preview area
h. Markers — pin points spots within the timeline and production
i. Clips — the media pulled or imported from the Recorder, Clip Bin, and Library
j. Snap guides — yellow guidelines that pull or snap clips to markers, media, or other clips
k. Animation indicator — an icon of a blue arrow that indicates an animation applied to the clip
l. Transition indicator — an icon in-between or at the end of a clip to indicate a transition
m. Lock Tracks toggle — locks and unlocks tracks
n. Track height adjustment — adjusts the height of the tracks
o. Navigation slider — a slider bar that will navigate through the duration of the timeline

1) Work with Tracks

The tracks area in the timeline is the work area. In the tracks area, the media can be arranged both vertically and horizontally. The media placed vertically on the timeline will take place at the same point of time during the video project. Media placed horizontally will be viewed in time duration progression.
Add and Remove Tracks

There are a number of ways to add a track to the timeline. Drag and drop media from the Clip Bin or Library into the timeline will automatically create a new track. The plus button above the track names and right click on the context menu will also add new track to the timeline. There is no limit to how many tracks you can add to the project.
Fig. 95 Adding tracks

Fig. 96 Remove track
Double-click on the track name to rename a track for organization. The right-click context menu has options to rename, lock, or remove a track from the timeline.

Tracks can be locked to make the media on the track unable to be edited or moved. Locking a track will prevent accidental editing on clips you did not want to edit. It is recommended to lock tracks that you are not working on to prevent any unwanted changes. On larger projects with a large number of tracks, you might not see all the tracks in the timeline view. For example, the cut tool will cut all media at that point or selection on all tracks even out of view, unless that track is locked.

To toggle locking and unlocking tracks, click the lock icon next to the track names. Diagonal gray lines will appear over the track and all media will not be able to be selected.

![Fig. 97 lock and unlock](image)

2) Work with Playhead

The playhead consists of a three main parts:

- Green in point — an indent movable slider that can mark the start of a selection
- Grey middle — the downward point and line represents the current frame and duration location of the playhead and preview window
- Red end point — an indent movable slider that can mark the end of a selection
Fig. 98 The playhead has three main parts (green in point, grey in middle, and red end point).

The playhead is a movable slider that runs through the duration of the timeline. Use the playhead to navigate through the project and make duration selections to the media. The position of the playhead will show the current frame in the preview window. Any added effect will be added to the location of the playhead. The playhead has In and End markers and a current frame point and line.

When previewing the project in a video playback, the playhead will move through the timeline always keeping on the current frame. Slide the playhead back and forth to change where in the duration of the project the current frame is.

Making a Selection with the Playhead

To make a selection with the playhead, click and drag the Green In point and Red End point to the start and end of the selection. The selected area is highlighted in the blue area running from the in and End points.

Fig. 99 making a selection with the playhead
Fig. 100 Playhead selection shows how to click and drag the green in point and red end point to start and end the selection. The blue highlighted area runs from in to end points.

During a video playback with a playhead selection, the playhead middle part will move as before, only stopping at the end point. If play or the spacebar are selected again, the playhead will start at the In point marker and stop at the End point. This is helpful when examining a portion of the project for editing. Double click the gray area of the playhead to collapse the green point in and red point out markers.

3) Work with Media Layering

Objects that appear on the canvas represent the layering order of the timeline. If on the timeline, a clip is on an above track over another clip on a lower track, then the clip of the media on the upper track will appear to be overlaid on the lower track media.
The media on the higher tracks will always overlay the media on the lower tracks. If one clip is on a higher track and fully covers over another clip on a lower track, the clip on the lower track will not be seen in the preview window or your video project. To change the layering of the media, change the hierarchy of the media on the tracks.
f) Step-by-Step: Working with Callouts for Text, Hotpot, and keyboard

Callouts are graphical elements that are added to the project to highlight important information or objects. Text and animations can be added to graphic elements. Adding a hotspot callout will add interaction between the viewer and the project.

To add or remove a callout, place the playhead where you want to add the graphic in the timeline. Then click the Add callout button to add the graphic to the timeline.

1) Open video editor

Fig. 102 Open video editor

Click Callouts
Fig. 103 Callout

The dropdown list shows a variety of selectable graphic elements that can be used as a callout. Click on the downward arrow to open the dropdown selection menu (See Figure 8.5). More elements can be downloaded and added from the TechSmith Website.

Click right down Corner to get full callout graphic.
Fig. 104 Full Callout Graphic

2) Text Callouts

To add text to the callout, click the cursor into the text field and begin typing. Use the dropdown menus and style buttons to adjust the text font, style, color, alignment, and size. These changes will show real time on the canvas to preview how the callout will look.
Fig. 105 Editing text in Callout

Text has been added to your video.

Fig. 106 Text has been added to your video
3.4.5 Step-by-Step: Record Camera

The record camera feature will record the activity displayed through the Web camera, like it would be when using the Recorder. This feature can be used to add missing video recordings or fix errors.

To start recording make sure your Web camera is plugged in and working. Then click the Record Camera tab.

Fig. 107 Camera Record

A live action preview of the camera will appear in the tab along with the audio input. Click the Start recording button to begin.

If you just need to add a recording, you can start the capture at any time. If you want to try and match any part of the project, place the playhead at the location of where you would like to start
3.4.6 Step-by-Step: Captions

If you have an outline or script, it is recommended that you add the text to your project as captions. The captions display text overlaid on the video project can be used to provide additional information, language translations, and the dialog of the narration. Viewers with hearing loss or in a public location can follow along through the video by reading the captions.

There are two types of captions:

1) Adding Captions

Captions can be added by importing, typing, speaking, or cutting and pasting text into the Captions tab. Use the best way that fits into your workflow.

To add captions manually by cutting and pasting the text, move the playhead to the point of the timeline you would like to start the captions. Then copy your text, script, or outline.
Then open the Captions tab and paste the text into the open captions field within the tab.

Fig. 109 Open video editor

Fig. 110 Paste the text into the open captions field
Fig. 111 The text caption in the video

2) ADA Compliant Captions

ADA compliant captions include:
- one to three lines of text that appear on-screen at a time
- 32 characters or less a line
- Helvetica medium or similar style of font
- upper- and lowercase letters
- text should not cover up graphics or other essential elements
- captions stay there for a few seconds
- text is timed to the audio

Speech-to-Text

With the Speech-to-Text feature you can automatically create captions from voice narration or audio clips in the timeline. This feature provides voice during video playback and trains and adapts to recognize your voice and style of speaking the more you use it.

To start the feature, select the Speech-to-text button in the Captions tab.

Select the Speech-to-text tab in the captions section to automatically create captions from voice narration or audio clips in the timeline.
Fig. 112 Speech to text

Fig. 113 Choose Entire Timeline
The Tips for Generating Accurate Speech-to-text Caption dialing box will pop up.

Fig. 114 Tips for Generating accurate Speech-to-text Captions

It is strongly recommended that the voice that runs through the training also is the voice of the narration. The program learns from hearing the voice and using the same voice will help generate more accurate captions. It is also recommended to run through the fill tip and training before generating the captions.

After the training, click the Continue button to generate the text. There is a high possibility that you will have to make frequent adjustments to the captions after generation. However, it might be faster than starting from scratch. The effectiveness will depend on your workflow.

During the Speech-to-text process, capitalization and punctuation data is not collected.

There is an option to Sync captions that will automatically split captions from video playback.
Fig. 115 Transcribing audio to text

Fig. 116 Import captions
Fig. 117 Speech to Text
Step-by-Step: Production and Sharing

After we finished video recording, editing and video design for e-learning and e-campus. We need to produce and share video by Camtasia. The Production Wizard is the main tool to render the project into the final sharable video. There are many production presets available to use. Also, you can use Custom Production Setting option in the Production Wizard. If you have multiple video projects that are ready to be rendered, you can batch the production process to render the videos.

The Producing and Sharing Video section contains Operate Production Wizard, Use Production presets, Apply Custom settings and Utilize batch and advance settings. The essential operation of Producing and Sharing Video will be showed as follows.

3.4.7 Step-by-Step: Operate Production Wizard

Once you finished the video recording and editing process, next step you need to produce the project. The Produce and Share Wizard is the main tool to render the project into the final video for your using for e-learning and e-campus.

The work step of Opening the Produce and Sharing Wizard is the following:

Click the Produce and Share button from the Application Menu to open the Produce and Sharing Wizard.

![Produce and Share button from the Application Menu](image-url)
3.4.8 Step-by-Step: Use Production presets

Camtasia has defined the video production presets. This video preset provided the effective work steps and save the time for the video productions. The dropdown menu, in the Production Wizard’s opening window, provided six common preset settings. These base presets will cover most of the production needs. You can use one of the presets to start with video production and sharing.

There are nine preset settings for video production as follows:

a. Share to Screencast.com — ideal settings for Screencast.com including upload walkthrough
b. Share to Google Drive — ideal settings for Google Drive including upload walkthrough
c. Share to YouTube — ideal settings for YouTube including upload walkthrough
d. MP4 only (up to 480p) — 480 pixels of vertical resolution, progressive scan, video file only
e. MP4 only (up to 720p) — 720 pixels of vertical resolution, progressive scan, video file only
f. MP4 only (up to 1080p) — 1080 pixels of vertical resolution, progressive scan, video file only
g. MP4 with Smart player (up to 480p) — 480 pixels of vertical resolution, progressive scan, video file with accompanying support files
h. MP4 with Smart player (up to 720p) — 720 pixels of vertical resolution, progressive scan, video file with accompanying support files
i. MP4 with video player (up to 1080p) — 1080 pixels of vertical resolution, progressive scan, video file with accompanying support files

You can click the dropdown menu, and see nine preset settings.

![Dropdown menu with preset settings](image)

Fig. 120 Nine preset settings for Produce and share

3.4.9 Step-by-Step: Apply Custom settings

The Custom Production Settings in the Production Wizard dropdown will allow us to more control of the style, size, quality, and video extras that using one of the premade presets dictate. These include a wide range of options including file format, audio and video settings, and watermarks. The Production Wizard will provide you each work step for file format.

The Custom production setting highlighted in the Production Wizard and other types of formats available.

a. MP4 — Flash/HTML5 Player — .mp4 — Motion Picture expert group 4
b. WMV — Windows Media Video — .wmv — Window Media Video
c. MOV — QuickTime movie — .mov — Quick Time Movie

d. AVI — Audio Video Interleave video file — .avi — audio video interleave video file

e. M4V — iPod, iPhone, iTunes compatible video — .m4v — MPEG-4 Video file from iTunes

f. MP3 — audio only — .mp3 — MPEG 1 or MPEG 2 audio Layer 3

g. GIF — animation file — .gif — Graphics Interchange Format

You should decide on a file format. The .mp4 production format is recommended and will be most commonly used, the step-by-steps will be more in-depth for the custom .mp4 production and show only the major differences with using the other production formats.

Fig. 121 Chose Custom production settings

Click next, you will get seven video file formats.
Fig. 122 Seven video file formats

3.4.10 Step-by-Step: Add or Edit Presets

You can save your custom setting for other videos without having to redo all of the settings again. The new save preset also can be used by others.
3.4.11 Step-by-Step: Produce and Share Video

The essential operation work steps for Producing and Sharing Video will be provide as follows:

I finished video “Shanghai, my hometown, Nov. 2010” recording, editing and design by Camtasia.
Fig. 124 Video “Shanghai, my hometown, Nov. 2010”

1) Click Produce and share

Fig. 125 Finished video editing and design
2) Production Wizard displayed, MP4 with video player (up to 480p).

Fig. 126 Welcome to Camtasia Studio production Wizard

3) Click next, chose MP4 with video player (up to 480p).

Fig. 127 Chose MP4 with video player (up to 480p) in the wizard.
4) Type Production name, and click next.

Fig. 128 Type product name

5) Rendering video

Fig. 129 Rendering video

6) Production is complete.
Fig. 130 Production in complete

Fig. 131 Listing more information about video production.
7) The files were produced.

Fig. 132 Production html Files

8) Showing video by Internet explorer.

Fig. 133 showing production video by Internet explorer.

9) Play the video by Internet explorer.
3.4.12 Step-by-Step: Design and Add Quiz

The Design Quiz is very important topic and section for distance learning and e-campus. Many peoples had spent much time to write the computer sources codes for design quiz for distance learning and e-campus before, because the Distance learning and e-Campus need quiz for students.

The software Camtasia is a good tool for quiz design. The design quiz can be easy and effective by using Camtasia. The quizzing supports both Flash and HTML5 which allows quizzes to be taken on iPads, Android tablets, and most Android smart phones. Quiz results are sent automatically to your email and let you know how much of your video was watched by the viewer. Plus, it does the grading for you.

I have used software Camtasia to design quiz. The essential work steps for design quiz by Camtasia as follows:

1) Click Quizzing after running Camtasia
Fig. 135 Start Quizzing

2) Click Add quiz

Fig. 136 Add quiz

3) Type sample question: “The Sky is” in Questions box.
Fig. 137 Typing question in question box

4) Editing Default Answer Text in Select the correct answer box

Fig. 138 Editing Default Answer Text in Select the correct answer box
5) Type sample “Green, Red, Blue and Yellow” in Select the correct answer box

![Fig.139 Typing different answers in Select the correct answer box](image)

6) Click Preview, How to quiz appears in video.

![Fig.140 Preview for quiz](image)
7) Click Produce and share, you can get different shares

8) Click Produce and share

9) Chose Next, chose MP4 with video player (up to 720p)
Fig. 143 MP4 with video player (up to 720p)

10) Click Next, Type Recipient email, Quiz results will be sent to this email addresses.

Fig. 144 Recipient email, Quiz results will be sent to this email addresses.

11) Click Quiz Appears, you can edit the Quiz appears, then click OK.
12) Click Next, Type Production Name, editing post production options and view folder and related files information.
Fig. 147 more folder information

13) Rendering video

Fig. 148 Rendering video
14) Quiz working and showing on Web Homepage

Fig. 149 Quiz working and showing on Web Homepage

15) View answer and continue on Web Homepage

Fig. 150 View answer and continue on Web Homepage

16) View quiz result on Web Homepage
3.4.13 Step-by-Step: Share and embed Camtasia video to YouTube and Web page

1) Open Camtasia Video Editor with your video
2) Click Produce and Share

![Image](image1.png)

Fig. 153 Produce and share

3) Click Share to YouTube in Produce and Share

![Image](image2.png)

Fig. 154 Production wizard for Share to YouTube
Click next in the wizard, sign in with your Google Account

Fig. 155 Sign in with your Google Account

4) Sign in to Youtube.com

Fig. 156 Sign in to Youtube.com
5) Click Accept the applications agreement

Fig. 157 Produce and upload video to YouTube

6) Click Finish, upload the video

Fig. 158 Upload video to YouTube
7) Processing the video in YouTube

![Fig. 159 Processing the video in YouTube](image1)

8) The Video is working in YouTube

![Fig. 160 The Video is working in YouTube](image2)

121
9) Getting Web Address in YouTube

Fig. 161 Web Address in YouTube http://youtu.be/zX9jID-LkyfQ?list=UUSVTEhsO9jyCEDE8eMBoEWQ

Playing your video in YouTube

Fig. 162 Playing our video in YouTube
10) Getting source code to embed YouTube video in your Web page

Fig. 163 getting source code to embed YouTube video in your Web page

<iframe width="560" height="315"
src="//www.youtube.com/embed/zX9iD-LkyfQ?list=UUSVTEhsO9jyCDE8eMBoEWQ" frameborder="0"
allowfullscreen></iframe>

Lecture video capture becomes a very interesting and important project in CSU system. We can begin to set up the smart classroom for Lecture Video classroom by cheaper camera, microphone, monitor, and computer server following the requirement of Endpoint, content server and media experience engine, and show and share. Of course we can use Cisco equipment directly for lecture video capture in the smart classroom. We believe the classical education system will be changed and reformed quickly by lecture video capture in the smart classroom and through Internet development.

We believe that the Video Capture Technology will be wide to use in the classrooms and distance learning for High Education in the future, and create and provide new and advanced reforms of High Education. Video Capture Applications for High Education is a great challenge to the current education systems. Video Lecture Capture will be important topic and project in Academic Technology, and applied to our education.