The Good, the Bad and the Beautiful:
Teaching with Digital Media

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Agenda

The Good…
- **Guest Speaker Series goes Digital**
- **Birth of the Hybrid**
- **Flipped Instructional Design with Digital Media**

The Bad…
- **Context: Digital Media Demand**
- **Team Approach**
- **Technological Challenges and Human Factors**

The Beautiful…
- **What do Students Say?**
- **Digital Media Aids Assessment**
- **Q & A**

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THE GOOD…

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GreenTalk Speaker Series Success Story at SJSU

- **Held in the Engineering auditorium, the *"GreenTalks"* are required across all sections of an upper-division engineering writing course (approx. 500 students each semester)**

- ***GreenTalks* feature practicing engineers, scientists, and technical experts who deliver up-to-date briefings on engineering and the environment**

- **Historically, evening sections viewed the lectures in class via DVD**

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Is This a Success Story for All?

In Fall 2014, a student registered with Accessible Education Center (AEC) enrolled in an evening ENGR 100W section. The DVD was not Closed Captioned (CC) and therefore this student could not complete the required *GreenTalk* writing assignment.

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What if we created a *YouTube* channel for the *GreenTalk* series and added Closed Captioning …

?

The Birth of the Hybrid

- Transforming the live guest speaker series into digital media was the first step in building a hybrid 100w course

- "Hybrid" instructional design means students view *GreenTalk* (lecture) via YouTube (online) outside of class

- In fall 2016 four hybrid sections offered

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What is "Flipped"?

- In Fall 2016, the "flipped-hybrid" Engineering 100w was awarded *Quality Matters* certification

- 1st "Blended" QM certified GE Course at SJSU; 1st Engineering 100w Hybrid course

- Face-to-face class time spent learning by doing with personalized instruction (learner-to-instructor) and peer-to-peer interaction

#1

Digital Lecture Improved Accessibility

Live Guest Speaker

You Tube Channel w. CC
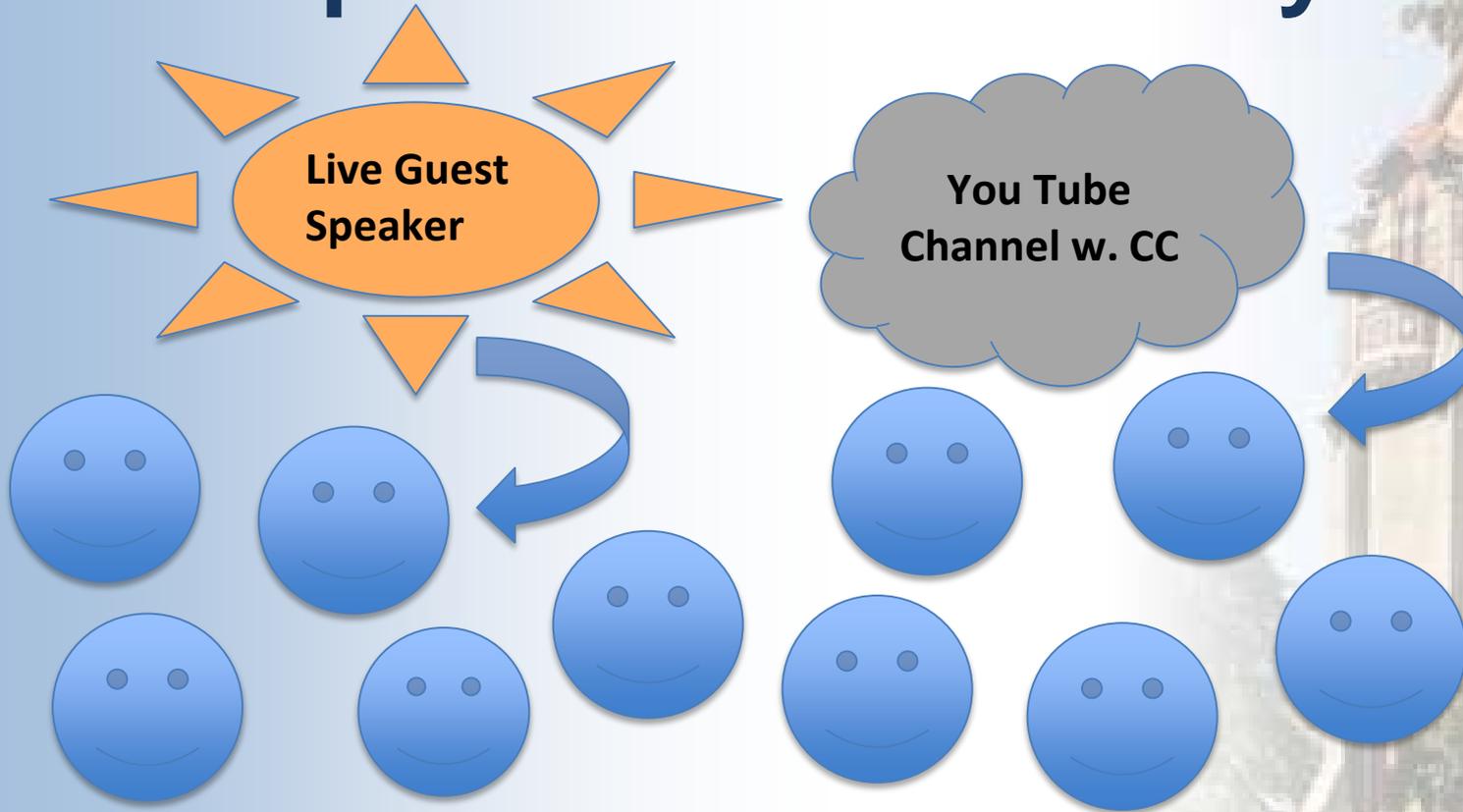
Adding digital media option supports more learning styles

Digital Media
Improved Coordination

- **One click distribution via Google Group tool to 12 faculty (24 sections)**

- ***GreenTalk* writing prompts**

- **Related textbook information**

- **Archive of videos and activities**

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THE BAD…

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Meeting the Demands of a Large Campus

- **Students:**
  - **Total enrollment: ~ 30,000**
  - **Registered w/ Accessible Education Center: ~ 1100 (4%)**

- **Faculty:**
  - **Full-time & part-time: ~ 1600**

- **To ensure digital media are accessible and in compliance, Accessible Technology Initiative Instructional Materials (ATI IM) committee partners are working together**
  - **Accessible Education Center**
  - **Center for Faculty Development**
  - **eCampus**
  - **Representatives from faculty, College Associate Deans, IT Services, Library, and the Bookstore**

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The Evolution of the *GreenTalk* Series

Before 2014
- DVD only
- No closed captions

Fall 2014
- YouTube
- Online playback with streaming media by 6 pm Same Day
- Quality cc in one week
- Not meeting the needs of 400+ students

Fall 2016
- YouTube + Camtasia
- Online playback with streaming media by 4 pm Same Day
- Quality cc in **48 hours**
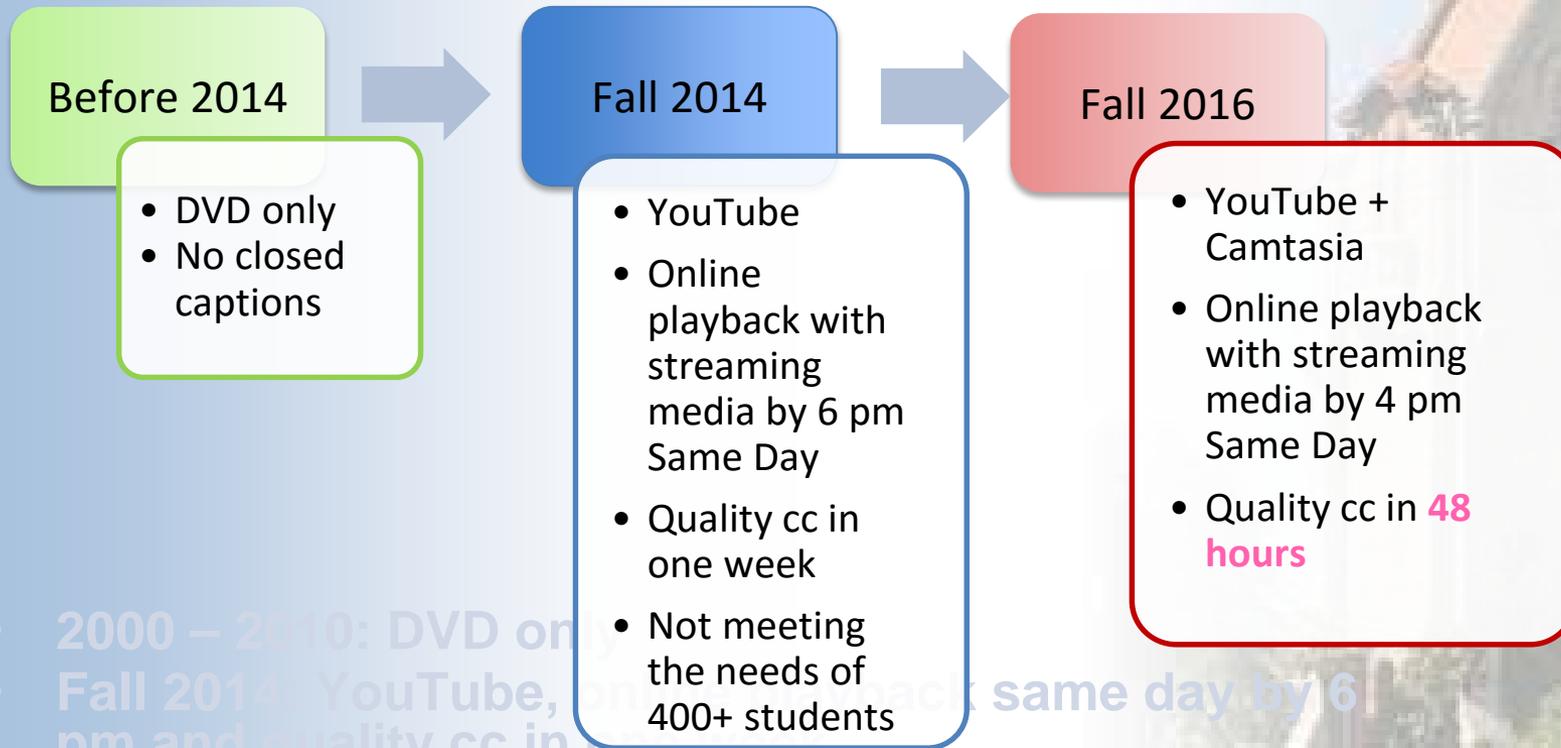
- **2000 – 2010: DVD only**
- **Fall 2014: YouTube, online playback same day by 6 pm and quality cc in one week**
- **Fall 2016: YouTube, Camtasia, online playback same day by 4 pm and quality cc in 8 hours**

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The Media and Transcription Workflow

Media production

- Record speaker live presentations, minor editing occasionally

Transcription

- Upload video onto unlisted YouTube channel
- Two to three reviews to ensure quality of closed captions

Deliveries

- Deliver in 3 and 47 hours
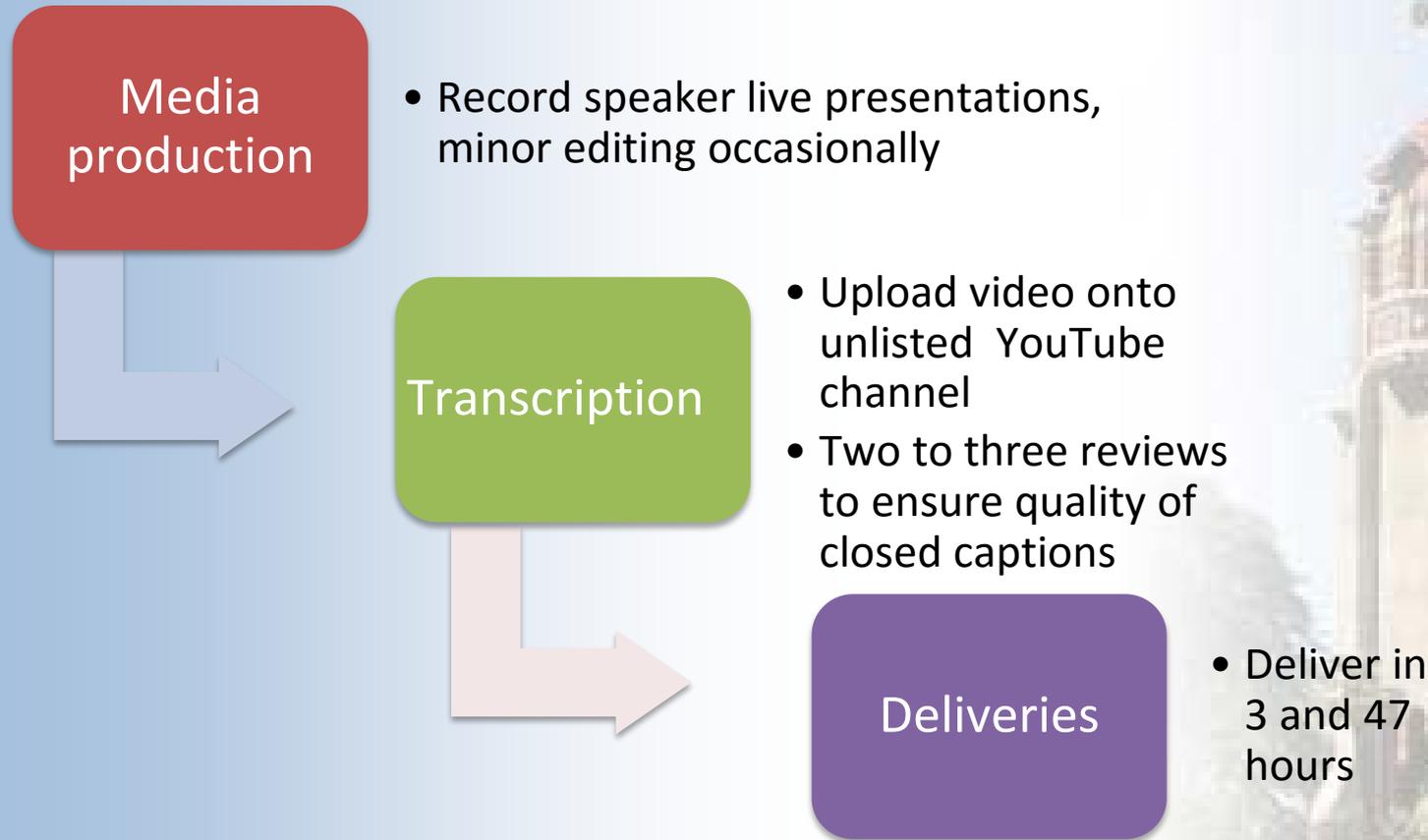
Media production → Transcription → Deliveries

The Complexity of a Team Approach

Coordination of the following groups in planning accessible course materials

- Instructional designers
- Media producers
- Transcription team
- IT specialists
- Engineering IT specialists

Quality Matters!

Faculty

Learners

Media Producers

IT Specialists

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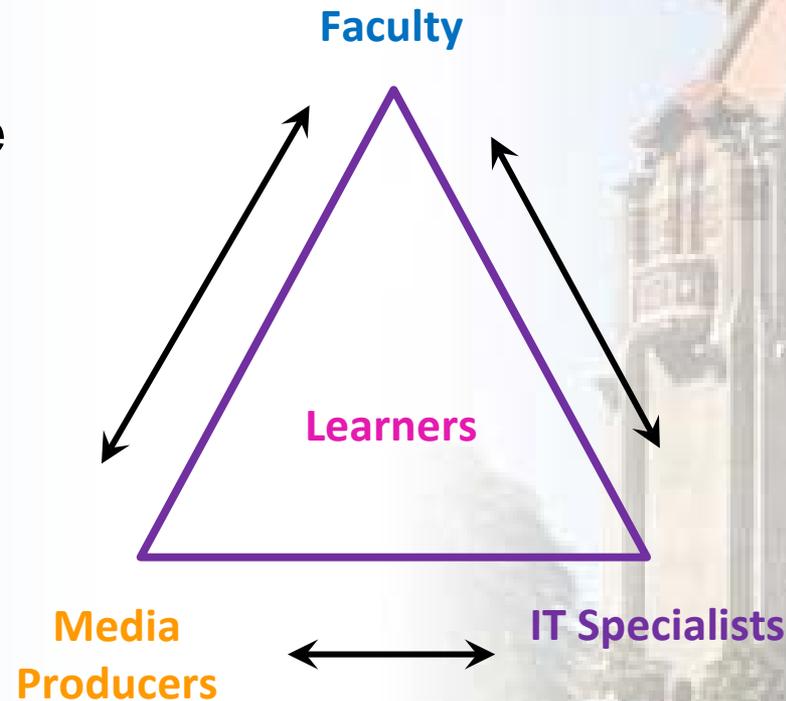
The Ugly Surprises! Technical Issues

Creating quality audio and video for an ongoing guest speaker series watched by more than 200 students comes with unexpected challenges…

- Lapses in recording equipment--buzzing in audio

- Variety of technologies utilized by speakers causes unpredictability in production quality and transcription process

- Testing new camera techniques (e.g. panning) create motion sickness for viewers

- College of Engineering auditorium system upgrades cause screen sudden shut down in the middle of presentation

- New YouTube auto-generated captioning technology confuses faculty causing complaints about captioning quality

The Ugly Surprises! Human Issues

- Speaker accents and clarity makes transcribing challenging

- Speakers leaving out of town at the last minute requiring virtual presentations

- Resistance from faculty about distributing the YouTube link to students

- Faculty not in agreement that video is a satisfactory alternative to live guest speakers

- Concern that video will decrease 'live' audience

- The most recent threats: *Cut all hybrid courses*

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THE BEAUTIFUL…

What do Students Think?

- A name-optional survey was distributed electronically to two sections of Engineering 100W (Day and evening sections-both had access to YouTube)

- A total of 33 (out of 48) students responded to the survey (69%)

- The results were surprising…

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Student Feedback

- Do you think having the option to view the YouTube video, in addition to the live speaker, is important?
 - Yes vs. No = 94% vs. 6%
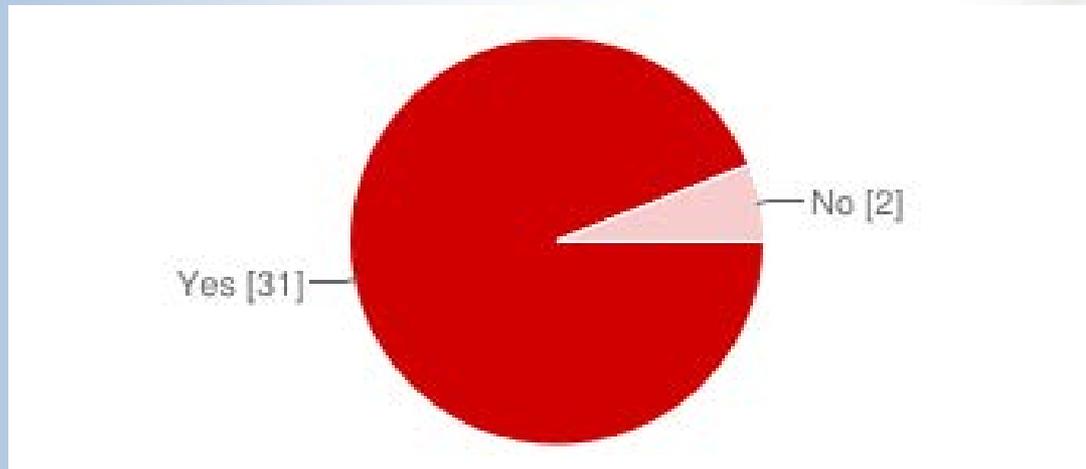
What about Closed Captioning?

- Do you think having Closed Captioning on the video is important?
  - Yes = 91%
  - No = 9%

Yes [30]   No [3]
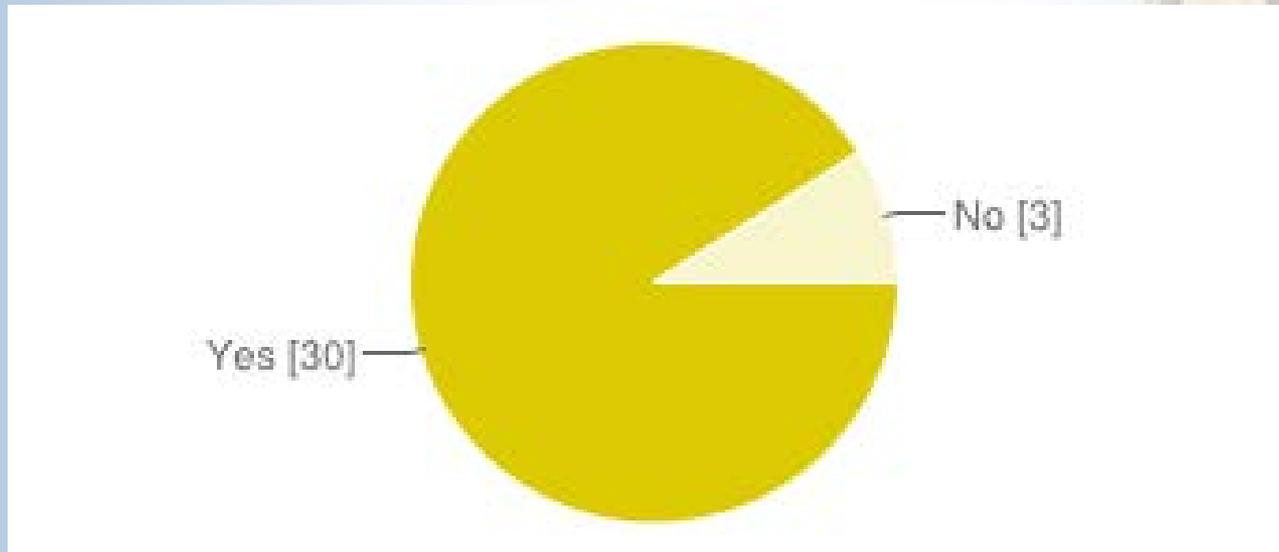
Viewing Preference:
Closed Captioned vs. No Caption

- If you were asked to watch the YouTube video, would you choose to view the closed captions?
  - Yes= 85%
  - No = 15%

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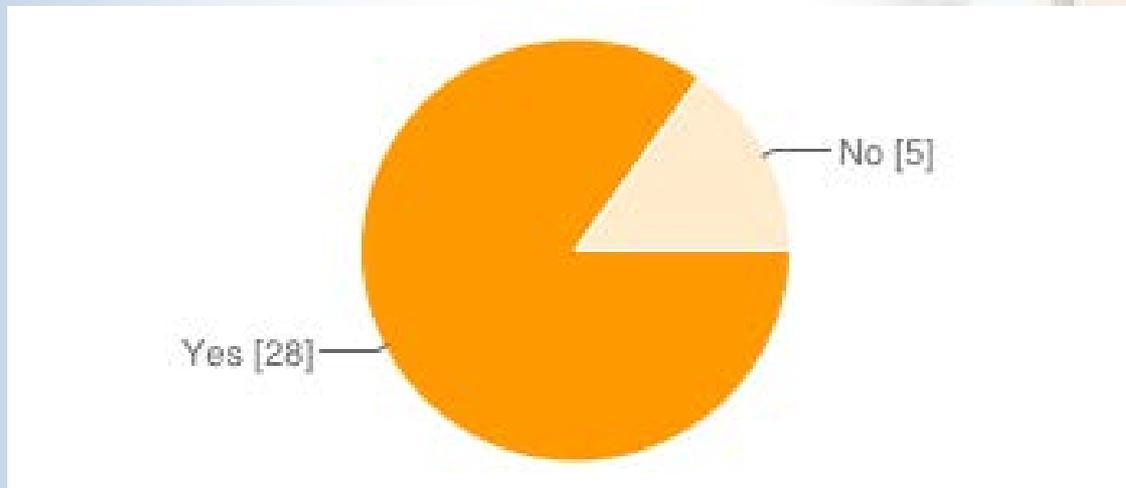
Why Students Find
# Closed Captions Helpful - Part I

Student comments:
- **Speaker clarity (13)**
  - Sometimes when the speaker doesn't speak closely to the microphone...
  - …if the person did not speak clearly or too quickly
  - I may have not caught a certain word or sentence and while writing…
  - Sometimes the microphone can have a technical issue…
  - …some speakers can have an accent
  - Sometimes the speaker is unclear …was either hard to understand or talked quietly.
  - …easier to understand the speaker if for some reason you can't hear the audio itself
  - Sometimes the speaker will deliver some technical terms…
  - The captions work great for me to help me better understand the speaker.

- **Better learning of the term and notes, ability to rewind and view the text (13)**
  - Captions allow the viewer to a better understanding of the presentation

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Why Students Find Closed Captions Helpful - Part II

Student comments: (continued)

- **Better learning of the term and notes (13)**
  - …its easier to pause the video and see what the speaker is saying
  - …videos should be available for the student to review the material specially if student are required to write detailed memorandums.
  - …having something to refer to and verify what I thought I heard.
  - Some people understand better when they read words rather than listen to others.
  - It's easier to keep track of what's being said…and verify what was being said by replaying the video. Instead I can look at the closed captions.
  - It help for quotations and it show the correct spelling of names and other terms
  - The CC ensures that I will get the right information in my notes…
- **Better comprehension in a noisy environment (11)**
  - Sometime there are noises in the background so being able to read through it is important.
  - In the event that the microphone isn't working too well or the speaker says a word in a way I don't recognize,
  - …sometimes the audio of the video is not very clear
  - Closed captioning would be useful because there is always the possibility of inaudibility when viewing
- **Hard of hearing problem (3)**
- **English is not my main language (1)**

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The Beautiful: Video Viewing Analytics

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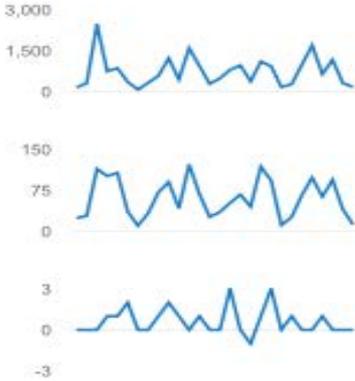
Why Students Prefer Live-Speaker Presentation

Student comments:

- **Interaction with the speaker (5)**
  - …more engaging to watch it in person since you can ask questions. …get to discuss with the speaker the ideas that they presented. …for the purpose of meeting them for a career opportunity or to ask questions. …ask questions about the talk.

- **Prefer live speaker, but video option important (4)**
  - Just a preference (1)Watching the live speaker made it mandatory to listen (1) scheduling conflicts (2)

- Won't fall asleep (1)

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The Beautiful: Digital Media and Learning

- 410 100w students received 8 review questions after watching a GreenTalk video.

- Hybrid students performance was approximately 10% better than those of the traditional format.

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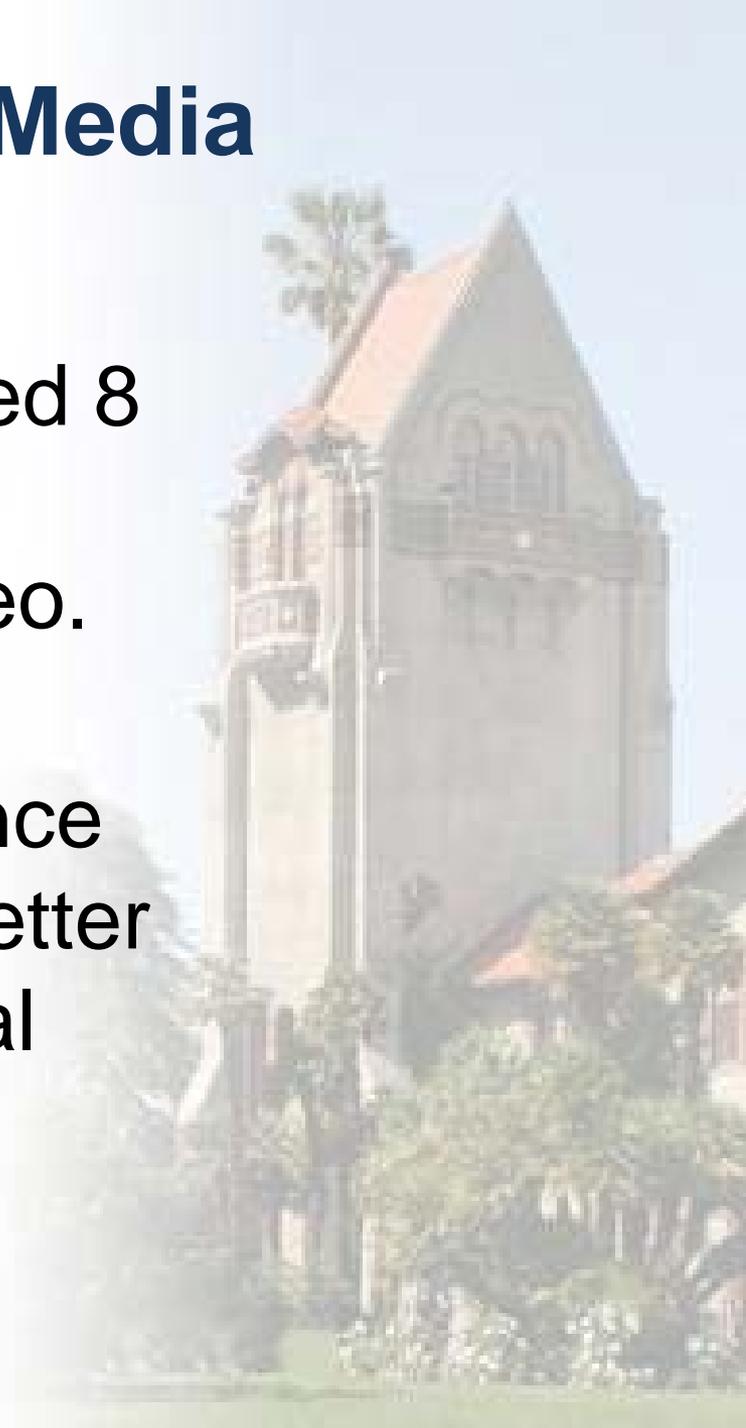
Percentage of Correct Answers: Traditional vs. Hybrid

ENGR 100W GreenTalk #1 Quiz Results
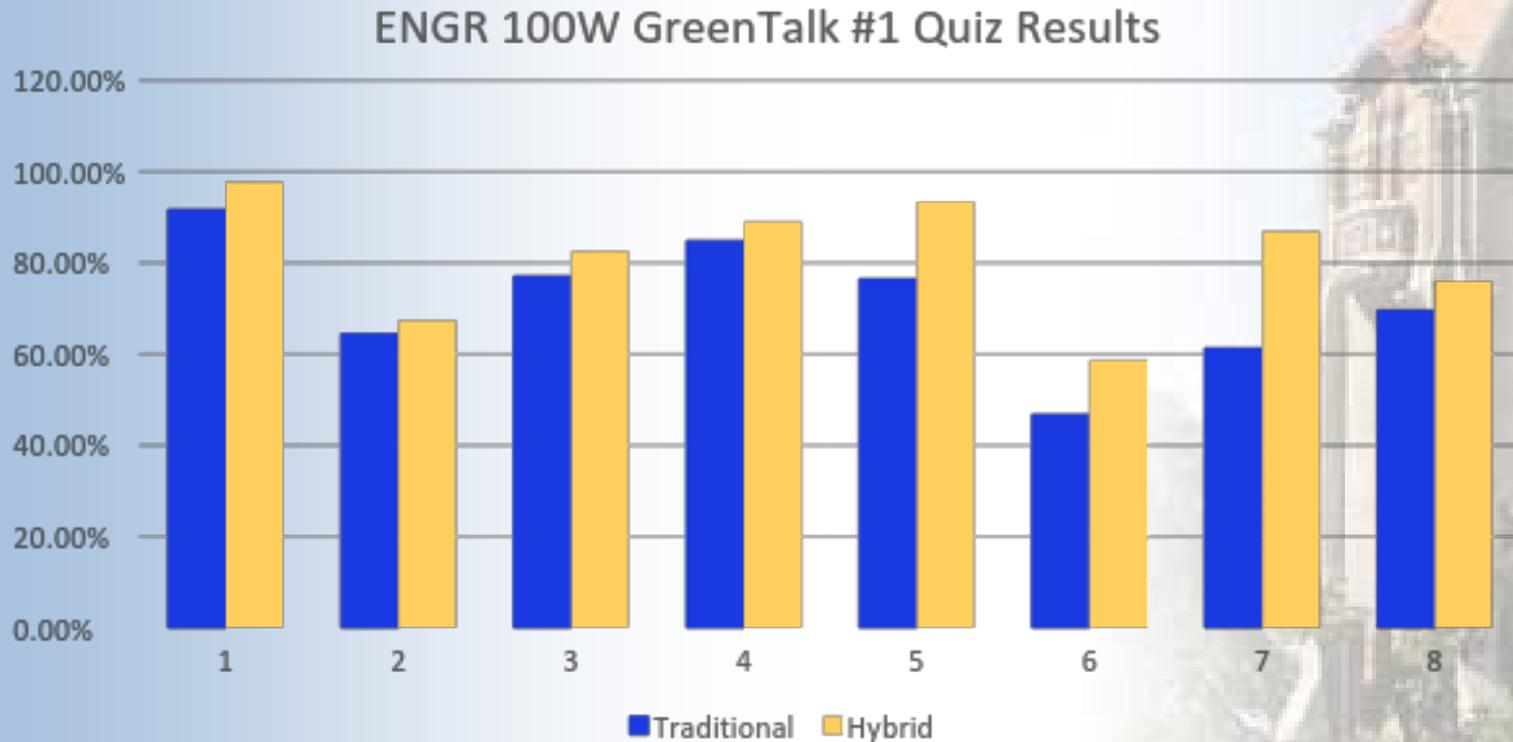
A greater number of Hybrid students answered quiz questions correctly.

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The Mean Difference for Spring 2016: Traditional vs. Hybrid

Mean/Average

% correct for Hybrid

% correct for Traditional

65 70 75 80 85 90 95 100
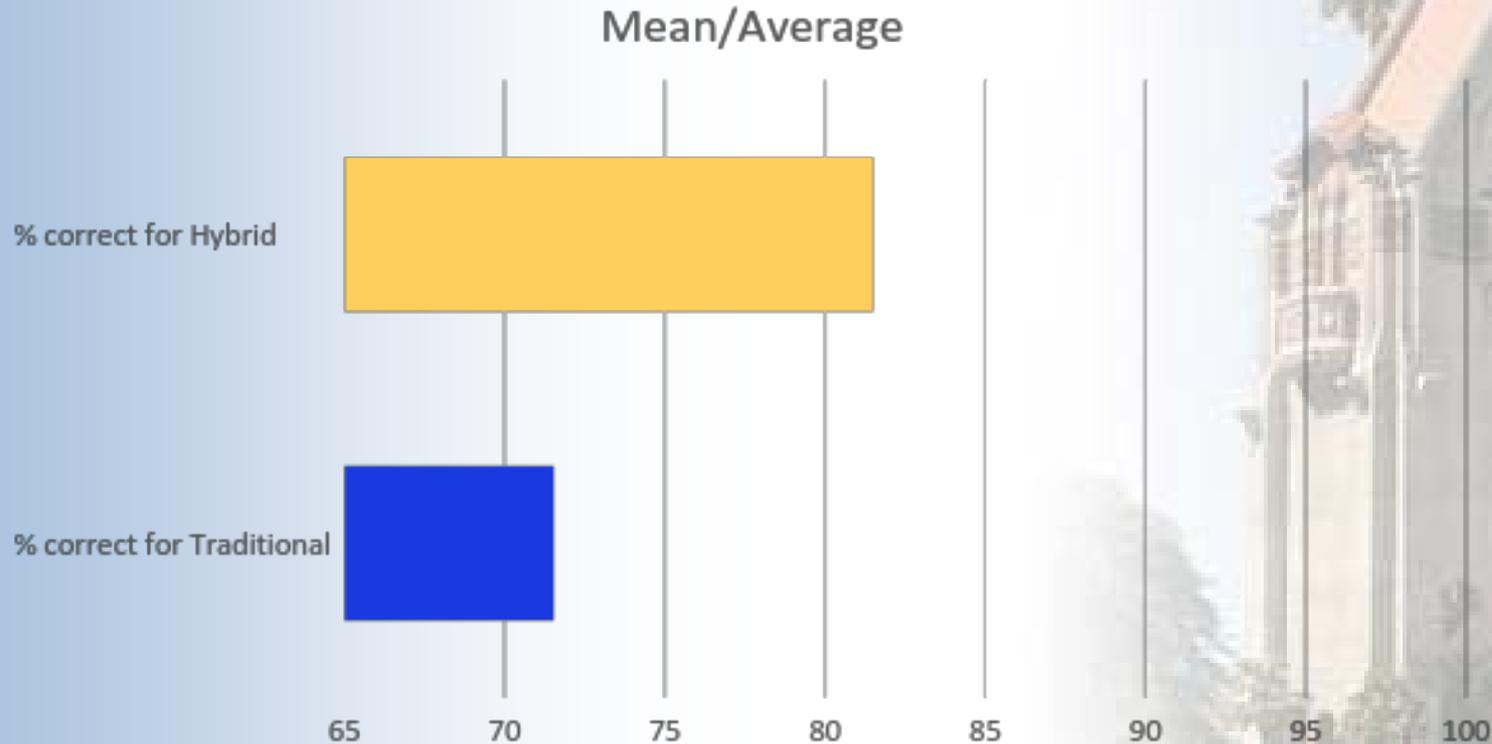
Digital media has learning advantages, including rewind and pause options

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% Correct Answers for Fall 2015 vs Spring 2016

Does Digital Media Improve Quiz Performance?

■ % correct for Traditional ■ % correct for Hybrid
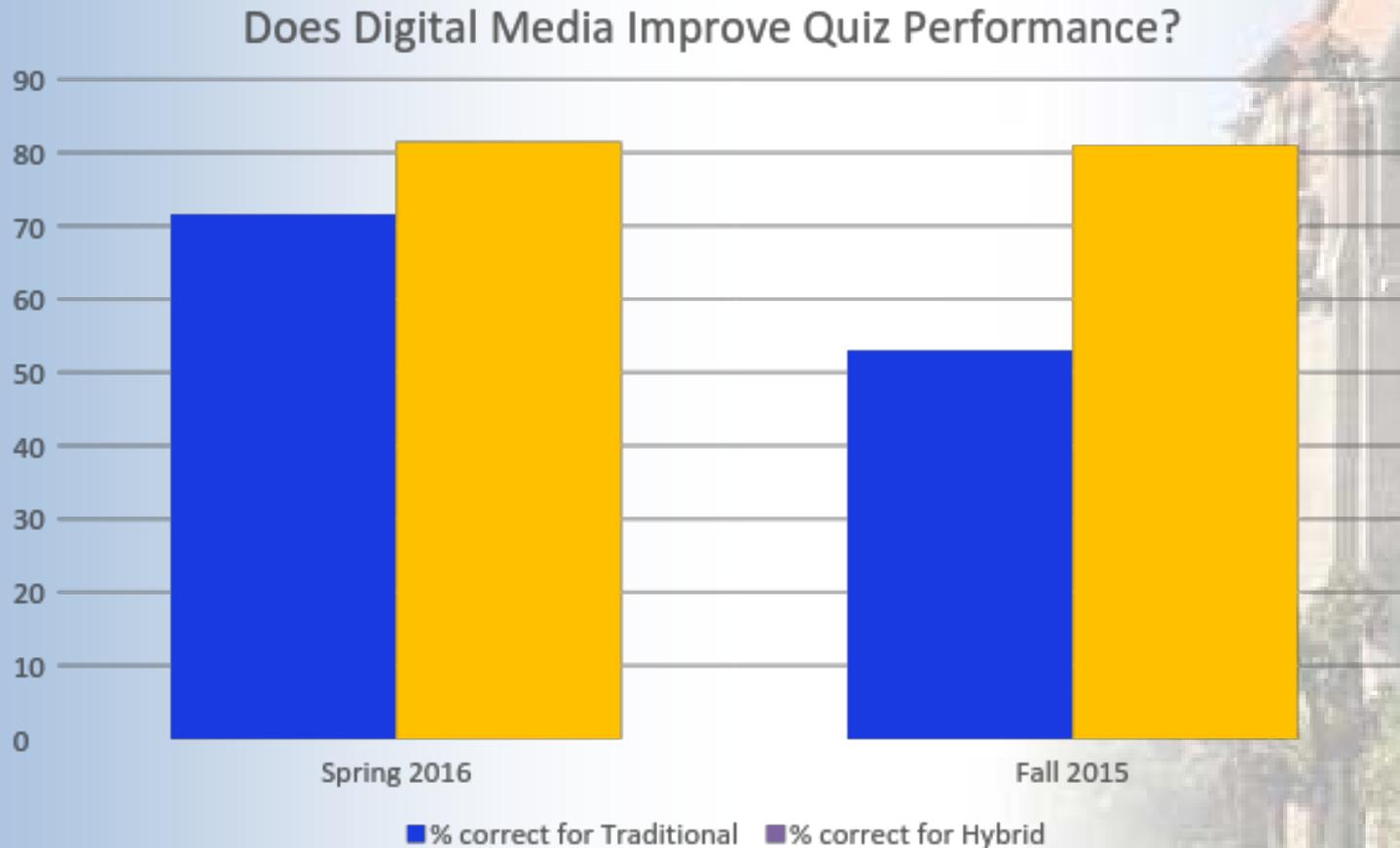
Digital Media and Program Assessment

- We distributed *GreenTalk* questions and discussed/analyzed results for our AREA R GE assessment

- Faculty used these review questions as a discussion tool in classrooms

- When used as an assessment tool, the Exit Exam, which draws on information from *GreenTalks*, provides 100% program assessment for GE AREA Z

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Shared Lecture
Shared Assessment

- **AREA Z GELO 1**: Students shall be able to produce discipline-specific written work that demonstrates upper-division proficiency in: language use, grammar. clarity of expression (Spring 2016)

(2) **Results for AREA R GELO 3**

410 of the 464 students enrolled in Engineering 100w completed a quiz in class after viewing a guest speaker's presentation on climate change (Dr. Cordero, 2-17-16). The presentation was one of ten weekly speakers scheduled in the 100w GreenTalk series. The quiz consisted of 10 questions: two fact-based short answer, two opinion-based short answer and six multiple choice questions. Forty-nine percent of the students viewed the GreenTalk via You Tube with Closed Captioning and the remaining students viewed the live guest speaker in the Engineering auditorium. Thirty percent of students viewed the GreenTalk on the same day they took the quiz, whereas 70 percent experienced a lag time between viewing and attending class where the quiz took place. Faculty were encouraged to use the quiz/results as a discussion tool. Coordinator review of answers demonstrated that 85% of students where able to "apply a scientific approach…"

Sample question: Can we scientifically test whether CO2 added to the atmosphere, causing the increase measured since 1960 is caused by fossil fuel burning?

Take-away for Teaching with Digital Media

- **Leverage existing videos for lecture material**

- **Coordinate with other faculty in your department to share** digital media **and** learner-centered **activities related to video** lecture

- **Maximize the use of content information from the video into active learning in the classroom**. Make passive video viewing active through course design

- **The** last step **in redesigning a course with technology is to create instructional videos**

- Work with campus support services to coordinate video development and captioning

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THE End

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Questions?

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Thank You!

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