Good for the Goose, Good for the Gander: Enhancing learning opportunities for all students through video captioning

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San José State University
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Agenda

- Our Campus & Our Collaborators
- Assessing the Needs
  - Questions about video usage
  - Questions about captioning needs
- Introducing Captioning Services
- Case Studies
  - Usage of captioned videos
  - Impact of captioned videos on student learning
- Wrap-Up: Take Away Messages
SJSU Campus & Collaborators

- **Students:**
  - Total enrollment: ~ 32,000
  - Registered w/ Accessible Education Center: ~ 1100 (4%)

- **Faculty:**
  - Full-time & part-time: ~ 1600-1700

- **Accessible Technology Initiative Instructional Materials (ATI IM) committee membership:**
  - Academic Senate
  - Academic Technology
  - Accessible Education Center
  - Center for Faculty Development
  - Library
  - Information Technology Services
  - Bookstore
  - Representatives from faculty & administration
Assessing Faculty & Student Needs

ATI IM administered two faculty surveys:

#1 (December 2012) – To document video usage

#2 (October 2013) – To better understand captioning needs
### Status of Captioned Video

- 55% of respondents said that NONE of the videos viewed In-Class are captioned
- 62% of respondents said that NONE of the videos they assign for Outside of Class viewing are captioned

<table>
<thead>
<tr>
<th></th>
<th>Not Captioned</th>
<th>&lt; 25%</th>
<th>~ 50%</th>
<th>&gt; 75%</th>
<th>All</th>
<th>Don’t Know</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Class</td>
<td>72 (55%)</td>
<td>29 (22%)</td>
<td>2 (2%)</td>
<td>7 (5%)</td>
<td>7(5%)</td>
<td>7 (5%)</td>
<td>8(6%)</td>
</tr>
<tr>
<td>Outside of Class</td>
<td>82 (62%)</td>
<td>10 (8%)</td>
<td>2 (2%)</td>
<td>2 (2%)</td>
<td>4 (3%)</td>
<td>12 (9%)</td>
<td>20 (15%)</td>
</tr>
</tbody>
</table>
This question is important to learn what kind of video files we will be captioning/transcribing.

- Note the INCREASE in proportion of ELECTRONIC files received (45% to 89%)
- Note the DECREASE in proportion of DVDs received (30% to 11%)

<table>
<thead>
<tr>
<th>Source Video Format</th>
<th>Spring 2014</th>
<th>Fall 2014</th>
<th>Fall 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic file (e.g., m4v, Flash, QuickTime, Window Media, Real Player)</td>
<td>45%</td>
<td>74.7%</td>
<td>89%</td>
</tr>
<tr>
<td>DVD</td>
<td>30%</td>
<td>22.8%</td>
<td>11%</td>
</tr>
<tr>
<td>Other</td>
<td>14%</td>
<td>1.3%</td>
<td>0</td>
</tr>
<tr>
<td>VHS tape</td>
<td>11%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Blu-Ray</td>
<td>1%</td>
<td>0</td>
<td>0</td>
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Copyright Ownership of Videos

This question is important to determine whether we can add captions or only provide transcripts.

- Note the proportion of faculty asserting they have copyright ownership/permission has DOUBLED.

<table>
<thead>
<tr>
<th>Copyright Ownership</th>
<th>Spring 2014</th>
<th>Spring 2014 – present</th>
</tr>
</thead>
<tbody>
<tr>
<td>No – for any of it</td>
<td>44%</td>
<td>44%</td>
</tr>
<tr>
<td>Yes – for everything I need captioned</td>
<td>23%</td>
<td>56%</td>
</tr>
<tr>
<td>Yes for some, no for others</td>
<td>13%</td>
<td>NA</td>
</tr>
<tr>
<td>Not sure</td>
<td>12%</td>
<td>NA</td>
</tr>
<tr>
<td>Other</td>
<td>9%</td>
<td>NA</td>
</tr>
</tbody>
</table>
Introduction of Captioning Services

- **2012 ~ 2013**: Needs Assessment
- **Spring 2014**: Pilot Testing
- **Fall 2014**: Official Roll-out
Captioning Services Infrastructure

- **Hardware and Software:**
  - Windows and Macs, Dragon Naturally Speaking, MovieCaptioner, AutoSync, YouTube, DVD Studio Pro, etc.

- **Online Info Hub:**
  - FAQs, request form via Google form, media drop box, media library repository, etc.

- **Resources:**
  - 2 staffs as additional duties; 6 part-time student assistants (50 hours/week)
  - **Automatic Sync Technologies** (AST) vendor

- **Documentation:**
  - Job/workflow & software used, master database log sheet, etc.
Transcription Workflow

1. Log in digital video file
2. Manually transcribe video; check accuracy with 1st and 2nd corrections
3. Sync/time set words with video images, if appropriate
4. Deliver to faculty for review and approval
Assessing the Usage and Impact of Video Captioning

• Collect information from faculty for whom we provided captioning/transcribing support

  – Case #1 – Computer Science 223 Python Language (Fall 2015)

  – Case #2 – Student feedback from 10 different courses (Fall 2015)

  – Case #3 – Performance differences in viewing videos with vs. without captions (Fall 2015)
Case #1: CS 223 Python Language

- 20 upper division students (8 female, 12 male) enrolled; 3-credit computer science course
- Students are required to view course videos (30 to 60+ min) prior to face-to-face class
- Instructor distributes in-class programming exercises and lectures/discusses key concepts
- Students are randomly assigned to groups for peer discussion or debugging
- Students are graded based on weekly quizzes, programming exercises, exams, & individual and group projects
Case #1: Usage and Impact of Captioning

The following survey questions were distributed during class:

• Are you aware that captioned videos are available?
• Did you look at any captioned video?
• If answer to [the above] is no, why not?
• If answer to [the above] is yes, will you keep look at the captioned videos?
Case #1: Usage of Captioned Videos

• Are you aware that captioned videos are available?
  – 7 out of 20 (35%) students are aware the availability of captioned video

• Did you look at any captioned video?
  – 2 out of 20 (10%) students viewed captioned video

<table>
<thead>
<tr>
<th>Questions</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you aware that captioned videos are available?</td>
<td>7 (35%)</td>
<td>3 (15%)</td>
</tr>
<tr>
<td>Did you look at any captioned video?</td>
<td>2 (10%)</td>
<td>8 (40%)</td>
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Case #1: Reasons for Not Watching Captioned Video

• I wasn’t aware that they were available. The lectures were easy to hear though

• The other videos work just fine

• Because they aren’t readily available on canvas… I’m too lazy to seek them out

• Not applicable

• Was not aware of the captioned videos. But I don’t have trouble understanding your lecture. Plus your videos are a combination of slides + interactive. I can pretty much read and see what you’re saying anyway.

• I can clearly understand the words spoken in the video
Case #1: Reasons to Continue Viewing Captioned Videos

• I found it helpful to watch the captioned videos to capture complex programming concepts and ideas as I am experiencing programming for the first time. It is really helpful to take important notes on the lecture videos.

• The other videos work just fine

• I am content with the audio quality of the videos and do not find the captioned videos necessary at this point in time.

• I am not sure. I may see those videos in future if I come across something which I am not able to understand.
Case #2: Video Captioning Usage

- We contacted 30 faculty members who have used our captioning service and asked them to forward an anonymous survey to their students.

- Courses included anthropology, biology, geology, physics, psychology, statistics and engineering technical writing.

- Students had two weeks to respond. Participation was voluntary.

- 54 out of a total of 401 students from 10 courses have responded. The return rate is 13.5%.
Case #2 - Why Did You Take This Course?

- Required for my Major = 22 (60%)
- Required for my Minor = 2 (5%)
- GE requirement = 15 (41%)
- It sounded interesting = 10 (27%)
Case #2: Are you eligible for instructional accommodations?

- Yes = 6 (11.1%)
- No = 34 (63%)
- Not Sure/prefer not to say = 13 (24.1%)
Case #2: Your Experience/Comfort Level with English

- English is the only language that I speak = 29 (53.8%)
- I speak one or more languages other than English = 23 (42.6%)
- I feel very comfortable learning/studying in English = 17 (31.5%)
- I would feel more comfortable learning/studying in English if my language skills were stronger = 1 (1.9%)
- I prefer not to say = 0

Percentage

I prefer not to say
I feel very comfortable...
English is the only language I speak
Case #2: Use of Captioning

- Total respondents = 54
- Yes, always/nearly always = 33 (61.1%)
- Yes, about half the time = 5 (9.3%)
- Yes, but rarely = 8 (14.8%)
- No, never, but I knew they were available = 2 (3.7%)
- No, never - I didn't know they were there! = 12 (22.2%)
Case #2: Why/When Do you use the Captions?

Captions help me learn (23)
  • with studying/learning, clarify, affirm understanding, note taking, spelling, pause and replay, etc.

Noisy environment (13)
  • ...when I cannot hear, in a noisy classroom, in a large classroom, etc.

Speaker clarity (11)
  • Has accent, is hard to understand, not clear, speaks too fast, etc.

Help with hearing impairment (2)

Others (4)
  • Forget my headphones when listening in a lab or library
  • Lecture slides help
  • Captions availability

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Case #2: When/Why you do not use captions

- Audio is loud/clear enough (7)
- No need, irrelevant, freedom to use the sound and rewatch the video, speakers have no accent (7)
- Always use it (5)
- Distract from the video (3)
- Enjoy the facial expression (1)
- I listen instead of read (1)
- No closed captions (1)
Case #2: Preference for Live Presentation vs. Archived Videos

- Strong preference for the live version = 1 (5.9%)
- Moderate preference for the live version = 0
- No preference = 5 (29.4%)
- Moderate preference for the video/archived version = 1 (5.9%)
- Strong preference for the video/archived version = 10 (58.8%)
- Other = 0
Case #2: Reasons for Preferences

Live Presentation (3)
• Easier to hear and focus
• Ask questions
• Motivate speakers to talk

Archived Videos (9)
• Freedom to review, pause, and rewind to learn (5)
• Fit into my schedule better
• Flexibility for commuter students
• Great for note taking to get exact quotes
• Speakers are difficult to understand
Case #3: Does Closed Captioning Impact Student Learning?

- All Engineering majors are required to take ENGR 100W course and attend the Green Talk guest speaker series.

- *GreenTalk* lectures feature practicing engineers, scientists, and technical experts who deliver up-to-date briefings on how they deal with environmental issues.

- The live lecture series is held in the Engineering Auditorium; students enrolled in evening sections have to view recorded versions of the talks.

- Survey distributed to 3 sections of ENGR 100W to assess whether closed captioned videos make any difference in students’ learning. We received 68 out of a total 68 responses. Participation points given to those who provided their names.
Case # 3: Attendance at Live vs. Video Presentation

- Attended the live presentation = 21 (30.9%)
- Watched the YouTube video presentation without closed captions = 9 (13.2%)
- Watched the YouTube video presentation WITH closed captions = 36 (52.9%)
- Other = 2 (2.9%)
Case # 3: Assessing student learning

- Survey included 7 multiple choice and 2 open ended questions about the content delivered by the speaker

- Students who viewed the videos with captioning answered significantly more questions correctly than those who viewed videos without captions or who attended the live presentation ($F = 29.33, p < .000$).

<table>
<thead>
<tr>
<th></th>
<th>Attended LIVE presentation</th>
<th>Viewed Video WITHOUT captions</th>
<th>Viewed Video WITH captions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average number of multiple choice questions answered correctly</td>
<td>2.77</td>
<td>4.22</td>
<td>4.89</td>
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</tbody>
</table>
• “Good for the goose, good for the gander” with your universally accessible teaching content
Wrap-up: Take-Away #2

Plan for appropriate online distribution – make sure all of the geese and all of the gander can benefit from your teaching …

Make sure students realize that closed captioning is available and how to use it. (Case #1)

Closed captioned videos are most effective:

• When students encounter new complex concepts or terminologies (Case #1)

• When students need to clarify, affirm understanding or spelling (for non-native English speaker), pause and replay, note taking, etc. (Case #2)

• When students view different speakers presenting different topics in a big lecture hall (Case #3)

• When students are tested of the video content in a shorter time frame (Case #3)

• When there is relevancy or connection between video content and student assignments or classroom activities (Case #3)
Universal Design in Teaching:

- Provide multiple ways or strategies in presenting your teaching content or classroom activities

- When designing or presenting multimedia course materials, include instructional designers, media producers, IT specialists and librarians as early as possible
Thank you!!

Questions?
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