

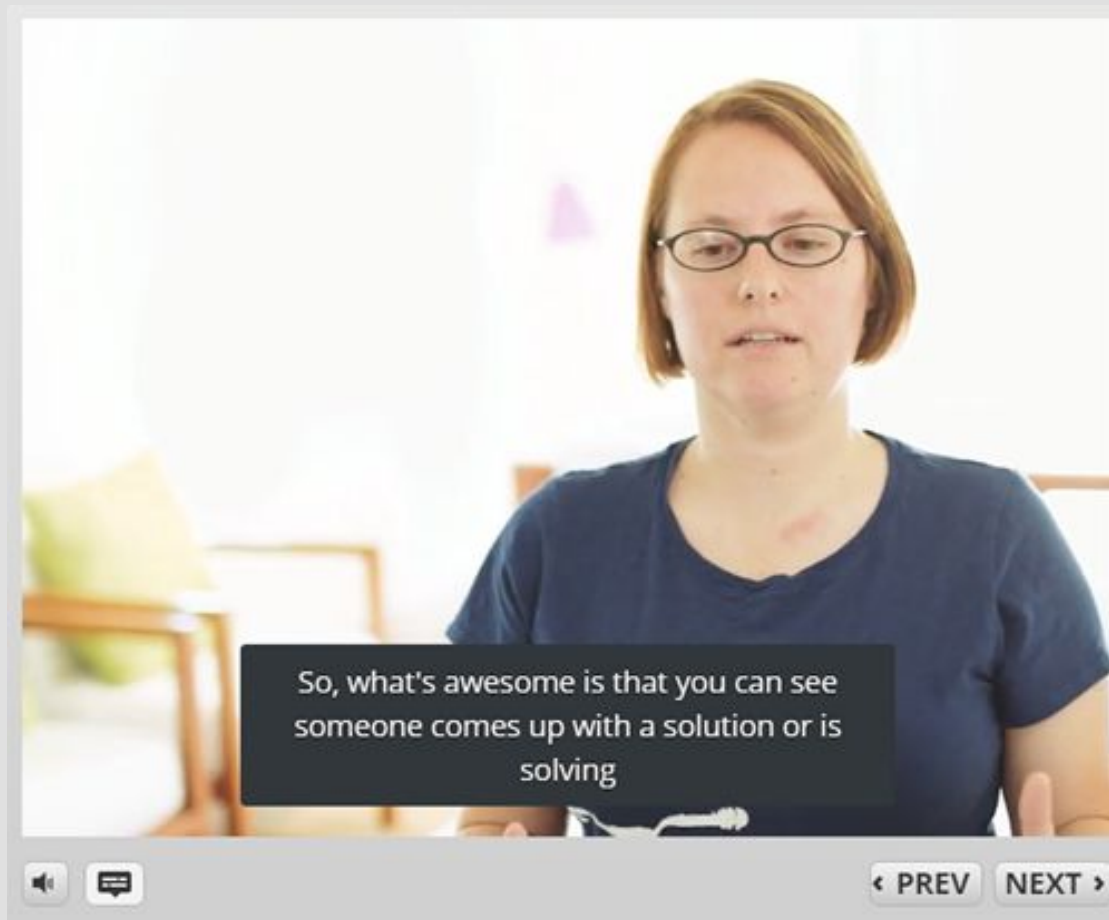
The Inclusive Dawgs

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Milestone 2

Overview

- The use of video and audio content in higher education is a common multimedia tool
- Audio and video content is known to enhance students' understanding of and learning of class materials
- Closed-captioned videos were developed to aid students who are hearing impaired and whose second language is English in English-speaking classrooms
 - **Closed-Captioned:** the synchronized text transcription of audio and video content, which can be enabled or disabled based on a user's needs and preferences
- Various platforms have an automatic closed-captioning function built-in, including Zoom, YouTube and even TikTok and Instagram
 - Such platforms have been integrated into higher-education classrooms, yet they are not the primary platforms used



An example of video content with closed-captioning.

- ELC, the primary online learning management system for the University of Georgia, exhibits a lack of accessibility to closed-captioning functions
- Closed-captioning is required for all audio and video content produced by an instructor, yet it is left up to each department to implement this function, as stated in the Faculty Guidelines produced by the Disability Resource Center
- *Criterion 1.2.5 Audio Description (Pre-recorded) (Level AA): ‘Not Supported’*
- Web Content Accessibility Guidelines: ‘users control the content they produce’
 - Instructors are left to outsource their audio/video content to be professionally captioned, or create the captions themselves, either manually or through Kaltura’s option to do so

Problem

- ELC itself offers no automatic captioning tool, and Kaltura is inadequate in its captioning tool
 - Kaltura's option to add captions only supports a limited variety of video formats
 - Kaltura's captions are only 70-80% accurate
 - Inadequate captions are as useless as no captions at all for those that rely on them
 - Professional outsourcing requires an extended time frame
 - Manually creating captions can be tedious, and time consuming, especially for longer content
 - The process to review the captions created by Kaltura is also time consuming, and with human error, certain errors in the captions might be missed
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7 Stages of Action

From the perspective of a student user:

1. **Goal:** View video/audio content uploaded by an instructor with the option to turn closed-captioning on/off, or obtain a transcript
 2. **Plan:** Determine if I, as a user, want closed-captioning or transcripts to be turned on/off, and see if the option to obtain transcripts is available
 3. **Specify:** If available, closed-captioning should be turned on and a transcript should be accessible.
 4. **Perform:** Click on the 'CC' button to turn closed-captioning on, and select the 'Transcript' option to obtain a transcript
 5. **Perceive:** Closed-captioning appears at the bottom of the video/audio content screen or the transcript appears below the content
 6. **Interpret:** I evaluate if the words are coherent to determine the accuracy of the transcription of the content.
 7. **Compare:** If the transcriptions and closed-captioning is easily understood, I am able to discern the content relayed by the instructor.
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7 Stages of Action

From the perspective of an instructor user:

1. **Goal:** Provide the option of closed-captioning and transcripts to all content-viewers (students).
 2. **Plan:** Determine how to create the closed-captions/transcripts, either through a manual process or through outsourcing.
 3. **Specify:** I want to include closed-captions and transcripts myself, without outsourcing.
 4. **Perform:** I navigate to Kaltura and upload the desired audio/video content. I will then edit the video and select 'Captions' in the navigation bar and add the file containing the closed-captions and time stamps. If the file does not exist, I will create it. I go to the desired course and navigate to 'Existing Activities'. From there, I locate 'My Media'. I embed the file and save it so that it can be viewed by desired viewers.
 5. **Perceive:** Viewers should have the ability to choose if they want to view closed-captions/transcripts.
 6. **Interpret:** It is time consuming to transcribe videos manually. The drawbacks for using humans for transcription is time and money to create an SRT, or other closed-captioning file, but viewers are able to access closed-captioning.
 7. **Compare:** The closed-captions are 100% accurate and match the timing of the individual speaking in the audio/video content.
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SIGNIFIERS:

- 'Transcripts' label is beneath the video/audio content
- Closed-captions appear at the bottom of the video/audio content screen

AFFORDANCES:

- Closed-captioning and transcripts are shown, if provided by the instructor, and the user enables this option
- Instructors have the option to manually transcribe their video/audio content, or outsource the creation of such prior to the content being uploaded

PROPERTIES:

- Closed-captions have a white font color with a black background
- Transcripts are text with timestamps

POTENTIAL USERS:

Potential users are both instructors and students, but more specifically students with hearing disabilities or those whose second language is English.

Existing Solutions

- Instructors can:

- Manually create closed-captioning on video and audio content, either through the use of a SRT file or through Kaltura, which only offers an accuracy of about 70-80%
- Outsource their videos to a third party and pay for professional closed-captionings
- Record all classroom-related content on a platform that offers automatic closed-captioning and transcription, such as zoom
- Upload all classroom-related content on a platform that offers automatic closed-captioning and transcription, such as YouTube, and provide a link to the uploaded content on ELC

Guidelines

- *Web Accessibility Guideline 1.2.2:* Captions are provided for all pre-recorded audio/video content in synchronized media, except when the media is a media alternative for text and is clearly labeled as such
 - All solutions discussed require a manual process by which closed-captioning can be obtained by an instructor to make them accessible to students
 - An instructor has to:
 - Choose to create subtitles through Kaltura; it is not automatic, or provided
 - Create closed-captioning themselves through the use of an SRT file
 - Utilize a third-party platform
 - While all these solutions would technically conform to guideline 1.2.2, at the initial upload of audio/video content, closed-captioning might not be available because:
 - The instructor is waiting for a third-party to close-caption the video
 - Kaltura has a minimum of a 30 minute window between initial upload until subtitles appear
 - A student might not have access to the third party platform being used by the instructor
 - An instructor might not have access to a platform, such as Zoom

Proposed Solution

The solution proposed is:

- Implementing an automatic closed-captioning and transcript function with 98%-100% accuracy within the ELC platform.
 - This would eliminate any manual process required of an instructor. Immediately upon uploading audio/video content, the option would be given to automatically closed-captioned and transcribed without the requirement of selecting the option to do so.
- Additionally, including a function which automatically flags sections of the content's closed-captioning/transcription which fall below the 98-100% accuracy requirement, or that could not be transcribed entirely
 - This would eliminate an instructor having to manually sift through the entirety of the content to determine any errors, which also comes with human error, and would reduce the time between initial upload and when the closed-captioning is available.

SIGNIFIERS:

- All content viewers will see a 'CC' button in the content frame to add or remove closed-captioning when necessary
- All content viewers will see a 'Transcript' button below the content frame to allow direct access to a transcript of the content
- All content creators will see a 'Create Closed-Captioning' and 'Create Transcript' button upon content upload, which will automatically add such functions to the content

AFFORDANCES:

- Automatic, adequate closed-captioning for content creators
- Automatic transcripts are formulated for content creators upon content upload
- Closed-captioning available to all content viewers
- Transcripts available to all content viewers
- Content creators have the ability to edit any of the closed-captionings or transcripts if the software flags certain sections as inadequate

PROPERTIES:

- Content will be automatically closed-captioned and transcribed for content creators prior to the content being fully uploaded
- When a content viewer clicks on the uploaded content, a closed-captioning button can be selected and closed-captions will appear at the bottom of the content view
- A button labeled 'Transcript' will be present under the content view, and when clicked a window with the transcript of the closed-captions with time stamps will appear

HOW WILL SUCCESS BE MEASURED:

Success will be measured by content creator uploaded videos being automatically closed-captioned, and content viewers having the option to turn closed-captioning on/off. If errors in the closed-captioning/transcripts exist, those sections of the content will be flagged for further content creator review. Additionally, content viewers will have the ability to view a transcript of the closed-captioning of the entirety of the content. Both closed-captioning and the transcript should accurately depict the audio in the content with 98-100% accuracy.