

# Closed Caption Pilot Report (2016/17)

## Enhancing the Student Experience



**The E-Learning Unit at Queen Mary University of London**

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## Overview

What is closed caption?

Closed caption (also referred to as ‘subtitles’) is text that is provided ,for an audience to read, of the audio of a speaker, usually displayed on a screen or television. This is particularly useful for people who may not be able to hear the speaker on television, video or in the room they’re in.

The purpose of the closed caption pilot at Queen Mary University of London is to evaluate the prospect of providing closed captions as part of a lecture, in order to enhance the learning experience especially for those with disabilities.

## Background

In 2014 the Head of Disability and Dyslexia Service approached the E-Learning Unit as a need was identified to offer additional support for students with disabilities. Due to impending funding cuts for personal note takers, attention turned to available technologies that might be able to assist students.

During the same period, the E-Learning Unit had also conducted an [interview with a Law student with a disability](#) and discovered that students with disabilities depend on Q-Review (Echo360) recordings of their lectures in order to keep up with their studies, but sometimes find it hard to follow the recordings – either because they can’t hear it very well or don’t understand the teacher. A lot of time is wasted having to rewind recordings to try to decipher what is being said.

*Students with hearing impairments and other disabilities are looking for more functionality, alongside lecture recordings, to assist them.*

As it is now common for lectures to be recorded across Higher Education institutions, and as video is a popular choice for students to complement their studies, students with hearing impairments and other disabilities are now looking for more functionality, alongside video and lecture recordings, to assist them as well.

It was felt that the ability to (optionally) view live subtitles during a lecture and/or to review a post lecture transcript or closed captions alongside a recording could be invaluable for students with disabilities. There would also be added benefit for all students, especially for those whose first language is not English, to be able to follow along by reading the text. Also in the bigger lecture theatres, closed captions would be useful where it might be difficult to hear at the back of the room.

## Objectives

The primary objectives of the closed caption pilot were to:

1. Consider the feasibility and value of offering a closed caption service at Queen Mary University of London, especially for those with disabilities.
2. Determine the costs and support required for this service
3. Trial various closed caption options and make recommendations

## The Pilot - Activities

In 2015 the E-Learning Unit applied and was successful in obtaining funds, from the Westfield Funding Bid, to pilot a closed captioning service and to determine whether this type of service would be valuable for its students.

We ran this pilot in four courses during the 2016/17 academic year, and as part of the pilot we had to undertake the following activities:

1. *Conduct market research:* We researched many companies to provide closed captioning, both UK-based as well as US-based vendors, including: [Ai Media](#), [Synote](#) and [RedBeeMedia](#) (the latter two being smaller companies who offered an automatic subtitling service). We also researched US providers [Cielo24](#) and [3PlayMedia](#) as well as our Media Service provider, Kaltura (also known as QMplus Media), which also provides a closed caption type feature.
2. *Collaborate with ITS teams:* After sourcing a vendor, we met with the QMUL AV and IT academic applications teams to facilitate the closed captioning service.
3. *Collaborate with DDS:* We met with Disabilities and Dyslexia Services to determine the best courses to be included as part of the pilot – this was based on courses where there were students who had declared a disability.
4. *Obtain consent from teachers:* We contacted the teachers delivering the courses that we wanted to include in the pilot to seek their approval and consent.
5. *Meet with disabled students:* we met with a deaf student to get his feedback and input on the service.
6. *Set up surveys:* we surveyed students within the classes that were a part of the pilot to obtain their feedback.
7. *Trial various closed caption options:* there are different types of closed captioning, and we set out to trial them and determine which one would be most suitable for our students.



After discussion with the Disability and Dyslexia Services team, we ran the pilot in four courses where we were able to meet with \*Tom, a student with a hearing impairment, who attended these classes and who gave us valuable feedback on the service.

The courses that were a part of the pilot were:

- GEG4003 – Geography in the World (live closed caption trial)
- GEG4004 – Research methods for geographers and environmental scientists
- GEG4112 – Global worlds
- GEG4209 – Earth surface science

We trialled various closed captioning options, including:

1. Automatic subtitles, done by closed captioning software
2. Live captioning during a lecture
3. Post lecture .pdf transcripts
4. Synced closed captions on Q-Review (Echo360) lecture recordings

## Results and Evaluation

### **1. Automatic subtitles on videos**

Students could view a video recording of the lecture after the class and subtitles, which had been transcribed automatically by captioning software, would be included with the video. The automatic transcribing capability was offered by a company called Synote and was also a feature of our QMplus Media (Kaltura) service.

**Cost:** the cost for this service was £6 per hour's worth of video by Synote, or free as part of the Kaltura service.

**Evaluation:** Unfortunately the subtitles, provided by automated software, were not very accurate – Synote promises around a 60% accuracy rate as the intention is that these subtitles would be updated either by the speaker, or by the audience.

As we did not want to rely on staff of students to update the subtitles, and having inaccurate subtitles would not be beneficial for hearing impaired students, it was felt that this was not a suitable service for us.

## **2. Live captioning during a lecture**

The live captions were done during the actual lecture. Students had the option to read the subtitles while the lecturer was speaking during class.

This service was offered by a company called Ai Media, who promise a 99% accuracy rate. It required Ai Media representatives to be able to hear the lecture and to transcribe what the lecturer was saying as he was talking – this was combined with a voice recognition software. Students needed to log into a website from their personal devices to be able to read the captions being transcribed by the Ai Media captioner.

**Cost:** The cost for this service by Ai Media was £75 per hour plus VAT.

**Evaluation:** There were several issues with this service to begin with. Initially the Ai Media team would listen into the lecture via a Skype call with someone in the classroom – which is not feasible for a service in itself. The Ai Media captioner could not always hear the lecturer properly via the Skype call speakers and sometimes the connection dropped, possibly due to poor wireless network connectivity in the classroom. These issues resulted in long pauses in the captioning.

We then considered the Q-Review (Echo360) live streaming feature to assist. This was a new feature at the time, where the lecture could be viewed and listened to live, from anywhere – as long as the viewer had the appropriate link and a reliable Internet connection. This was much better for the Ai Media representative to listen to and provide live captions.

However, another drawback to this service was the difficulty in informing the students of where to login in order to view the closed captions, and often students would miss out as they were not aware that these subtitles were available.

Most importantly, in an interview with our hearing impaired student, Tom, he pointed out that the live subtitles were hard to follow on his own device, whilst he was also trying to watch the BSL signer at the front of the room, and follow any PowerPoint slides being projected on the front screen. He gave up trying to read the live subtitles, as they proved to be more of a distraction.

For these reasons, it was felt that this was not a suitable service.



### 3. Post-lecture .pdf transcripts

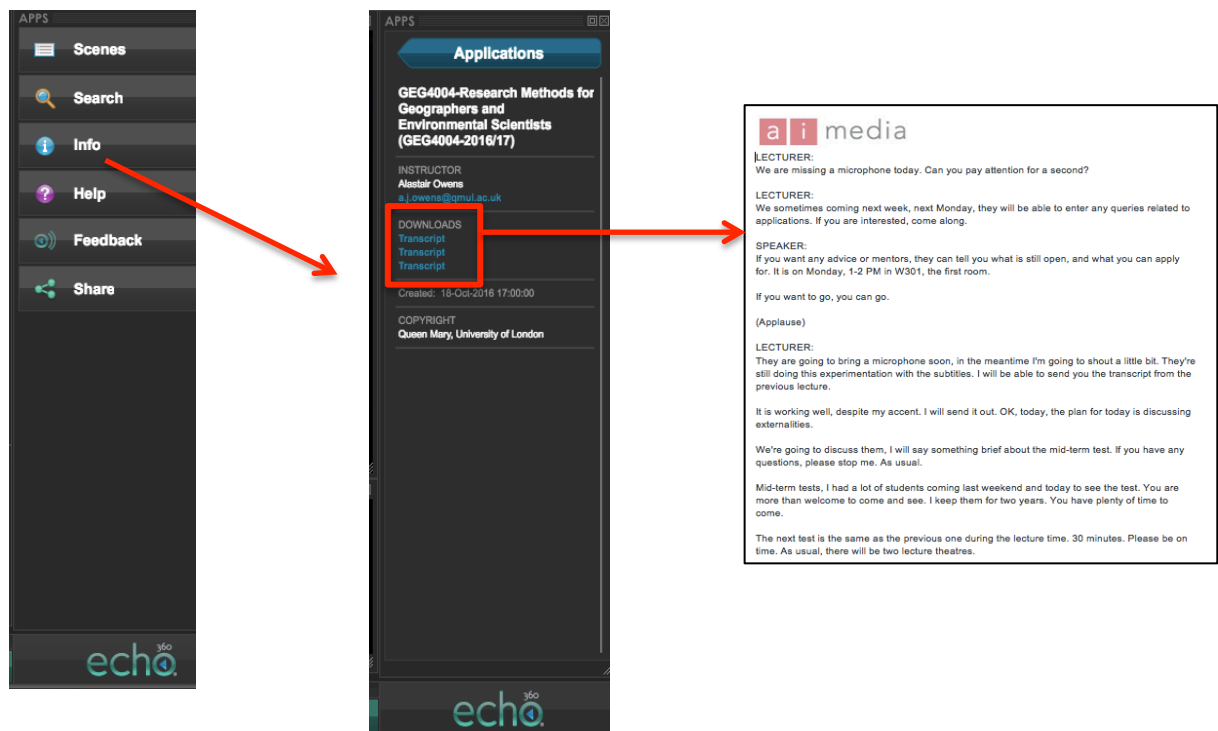
As part of the live closed caption service, Ai Media also provided post lecture transcripts that were saved as .pdf's. These could be sent to students to download after the lecture.

We added the .pdf transcripts to the relevant QMplus online course areas, as well as made them accessible from the Q-Review (Echo360) lecture video recording.

**Cost:** There was no additional cost for this service, as it was included as part of the live captioning service from Ai Media.

**Evaluation:** the .pdf transcripts were useful, as long as students were able to locate them. Having them accessible via the Q-Review recording seemed like the best option, however they could only be added in a specific location within Q-Review, and this was not an obvious place for students to find them. From the Q-Review recording, students would need to click on an 'Info' application link, and then they would see a link to the transcripts. Once located, they could read the transcript – however this was not in sync with the recording.

It was sometimes difficult for students to read the transcript while following the relevant PowerPoint slides available in the video recording. There were some concerns raised by teachers that this type of service might encourage students to plagiarise, as they could easily lift content from the .pdf document without proper citation.

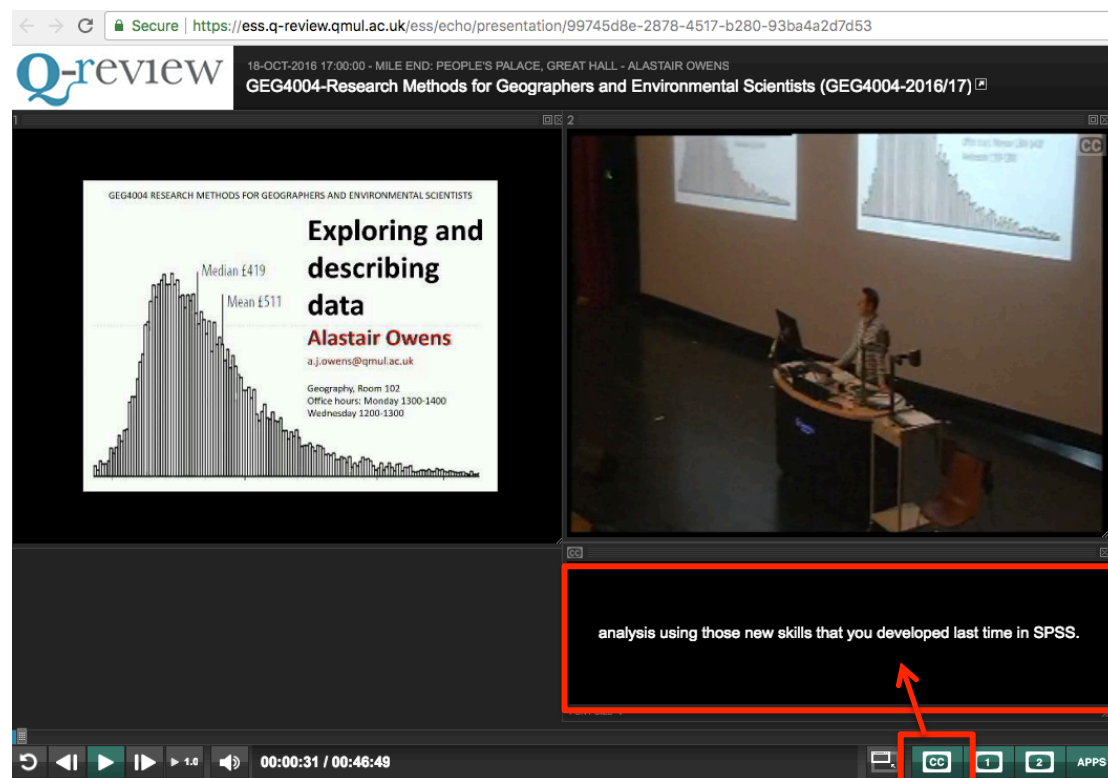


#### 4. Closed Captions on Q-Review (Echo360) Lecture Recordings

The final option we looked at was the most expensive one. This was the provision of closed captions on Q-Review (Echo360) lecture recordings, post lecture. These closed captions were added to the recorded lecture and most importantly, were in sync with the video.

This service was offered by Ai Media and involved some technical set up beforehand for it to work properly. Ai Media needed access to the RSS feed for the specific Q-Review course where the recordings were stored. Once the recordings took place, Ai Media would be able to retrieve them and add captions in a suitable format. They then re-imported an updated version of the lecture recording back into the Q-Review environment, with the closed caption option available.

[A sample of this can be seen on the image below – and also in this Q-Review video] - <https://echo360.org.uk/media/9e816264-0b9c-4edc-b38f-32322fbdefe5/public>



Q-review 18-OCT-2016 17:00:00 - MILE END: PEOPLE'S PALACE, GREAT HALL - ALASTAIR OWENS  
GEG4004-Research Methods for Geographers and Environmental Scientists (GEG4004-2016/17)

GEG4004 RESEARCH METHODS FOR GEOGRAPHERS AND ENVIRONMENTAL SCIENTISTS

Exploring and describing data

Alastair Owens  
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Geography, Room 102  
Office hours: Monday 1300-1400  
Wednesday 1300-1300

Median £419  
Mean £511

analysis using those new skills that you developed last time in SPSS.

00:00:31 / 00:46:49

**Cost:** Ai Media offered different tiers for this service, depending on how quickly the turnaround time required was. For the pilot, we chose a 4-day turnaround time, which cost £1.75 per minute plus VAT (or £105 per hour plus VAT).

Written by Alysa Bramble, Snr. Learning Technologist, E-Learning Applications Manager

**Evaluation:** Of all the options that we trialed, this was the most suitable and best feature for all students to be able to access, although it was also the most expensive. The closed captions could be switched on or off, in a similar way to the PowerPoint slides or video of the speaker, and students could follow the captions alongside the actual lecture recording.

### Recommendations and Future Plans

This was a useful pilot, and it was great to trial several options. With the funds available we were able to provide closed captions on around 16-Q-Review lecture recordings.

We surveyed the students on courses where we offered the pilot, and the responses show that students feel this was a useful service that they would like to see on all of their modules. It is especially useful for students whose first language is not English.

Tom, our hearing impaired student was extremely grateful to have been provided with this service as part of the pilot, and would love to see this in his future classes. Similarly, 100% of survey respondents stated that they found the service useful and 90.3% mentioned they would be interested in seeing this service available on other modules for which they are enrolled.

It is also claimed that captioned video increase view time by an average of 12%' (see <https://www.facebook.com/business/news/Features-for-Video-Ads-UK>). Viewers are also more likely to watch videos if they can follow them in silence (in the office, on their commute on their mobile device etc.). Captions are now a popular addition to videos.

Ai Media's technical team helped to sort initial teething problems and their support team was very patient and responsive. As the leading providers for closed captioning in the UK (at the time of writing) Ai Media would be our supplier of choice. They use a combination of automated voice recognition software as well as a 'human captioner' to correct/amend errors in the text. Ai Media promises a 99% accuracy rate, as opposed to the lower accuracy rates guaranteed by other automated systems.

We would recommend the service be provided by Ai Media, in sync with the Q-Review lecture recordings, in those classes where a student has declared a disability and where this type of service would be suitable. We would need to work with Disability and Dyslexia Services to determine how many classes on average would need this service per year, to calculate the potential cost to secure appropriate funding.

*\*Names have been changed for privacy.*