The Application of Open Broadcaster Software for video-streaming based course content delivery

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Rationale:

One of the major teaching challenges of 2020 is overcoming social distancing through information technology. During the pandemic, course content delivery transitioned to remote, online, and virtual modalities which require video-streaming based course content delivery. Techniques for student participation and engagement in an in-person setting do not translate well into these video-streaming modalities given the technological constraints. Video editing applications have been proposed to enhance student learning in blended learning (1). I propose a novel application of the Open Broadcaster Software (2) to improve delivery of content and student engagement in a video-streaming based course. Open Broadcaster Software works together with existing communication applications such as Zoom or Skype to enable greater control over the video and audio content over the communication applications. Furthermore, Open Broadcaster Software is a free and open source software that incurs no cost and works with existing video-streaming equipment on all desktop operating systems, which makes it a cost effective tool.

Description:

I implemented the Open Broadcaster Software into my teaching using the following method. The objective is to mix and edit multiple video and audio input sources for streaming and recording.

1. Prerequisite is a desktop device (ie. PC, Mac, Linux), webcam, microphone, and video conferencing application (ie. Zoom, Skype, Google Meet)

2. Recommended, but not required, to have a green screen setup as a background to enable chroma key filter

3. Download and install Open Broadcaster Software from https://obsproject.com/

4. Setup the technical specifications for the video output. For example, consider the video resolution (HD, Full HD).

5. Select the video input sources to combine. For example, I combine my webcam and external monitor as video input sources.

6. Optional: With a green screen background, setup a chroma key filter on the webcam video input to isolate the foreground subject. This enables replacing the background (green screen) with any video source. This is the same technology used in television broadcasting (ie. meteorologist shows a map in the background)

7. After finalizing the video output, turn on the virtual webcam from Open Broadcaster Software. This allows feeding the video output from Open Broadcaster Software into video conferencing applications like Zoom.

8. Open the video conferencing application, select Open Broadcaster Software as the webcam or video input source.

9. Use the video conferencing application as usual. Any changes in the video feed from Open Broadcaster Software will be directed to the video conferencing application.

My proposed method for mixing and editing video for online teaching addresses current limitations in video conferencing applications. Currently, no video conferencing application supports overlaying screen content and video inputs in a single scene. For example, in Zoom, the shared screen takes the focus while the presenter is shown on a separate window. But with Open Broadcaster Software, the presenter has complete control over the video regardless of the constraints imposed by the video conferencing application.

Appraisal:
The greatest benefit of my proposed method is improved student engagement in video-streaming based course content delivery. My method removes restrictions and overcomes limitations of current practices in using video conferencing applications for remote teaching. By using Open Broadcaster Software, the instructor can have a larger visual presence in the video, thus the instructor is the center of attention rather than the shared screen. Furthermore, using Open Broadcaster Software eliminates the need to use the share screen functionality, which enables students to engage in active dialogue inside the virtual meeting room with fewer barriers.

References:
1. Serrano, D. R., Dea-Ayuela, M. A., Gonzalez-Burgos, E., Serrano-Gil, A., & Lalatsa, A. (2019). Technology-enhanced learning in higher education: How to enhance student engagement through blended learning. European Journal of Education, 54(2), 273-286.

2. https://github.com/obsproject/obs-studio/wiki

Link or explanation: https://obsproject.com/