YOU'RE ON MUTE: VIDEOCONFERENCING APPLICATIONS FOR ONLINE LEARNING

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RESOURCE REVIEW

We had no choice. It is rare for any kind of widespread change to be met with near-instant management buy-in and end-user adoption. Still, such was the case with educational institutions and online learning when the COVID-19 pandemic shut the doors of our physical classrooms in 2020 (Li & Lalani, 2020). It was a smooth transition for some universities that have already been using blended learning strategies, but it was a jarring shift for everyone else.

I will not pretend that the shift to online learning in its various forms heralded the beginning of a digital transformation, nor will it ignore the continuing and increasing divide brought about by the lack of access to the requisite infrastructure (financial, technical, regulatory) for digital connectivity. Taking into consideration the financial, technical, and even emotional costs involved in selecting and adapting to using a system, the "best" videoconferencing application is the one that is readily available to an organization and its stakeholders. These applications all have the same function at their core: the ability to facilitate remote synchronous conversations through voice and video between two or more individuals.

This remote group conversation function was the driving factor for the adoption of video conferencing applications as a stand-in for traditional classroom discussion (Correia et al., 2020). This article focuses on the technical features seen in widely adapted videoconferencing platforms, but it is the responsibility of educators to utilize said features to meet certain standards of quality for online learning. As with any other information and communications technology, these applications are merely tools that supplement our more extensive information infrastructure. Some limitations may, in fact, be beneficial in the long term, such as meeting time limits for free accounts helping to combat "Zoom

fatigue" by forcing breaks between meetings (Fosslien & Duffy, 2020).

Can you hear me?

An application is only as good as the individual using them. The utility and useability of videoconferencing applications are highly contextual and are best qualified through participant observation of the intended user group. Khalid and Hossan (2016) examined common concerns in the use of videoconferencing systems for education, some of which are: (1) a high learning curve with little to no start-up support; (2) changing functions and features that may behave differently from what the user has previously learned; and (3) generally making the user feel tense, awkward, uneasy, embarrassed, or inconvenienced. Of course, some of these concerns are not unique to videoconferencing applications alone and are the subject of study in human-computer interaction research for systems development.

Of the applications that saw the most growth during the COVID-19 pandemic (Enberg, 2020), those with desktop applications (Zoom, Microsoft Teams, Skype) have seen the most frequent changes and updates to their interfaces and feature sets. Applications that are usually accessed via a web browser or through a mobile device such as Google Meet, WhatsApp, and Facebook Messenger. It is challenging to maintain tutorials and start-up guides for applications with continually changing menus, and screenshots that may have applied to an older version may no longer be useful for the current one. Certain new features may also not be available or accessible to individual users who do not or whose hardware cannot update to the latest version. If your institutions have legacy hardware deployed, I recommend favoring a web-based videoconferencing application. Zoom, in particular, releases updates nearly every week and would require a continuing user support strategy to use effectively (Zoom Video Communications, Inc., 2020).

However, web-based applications may also bring different user issues. I remember when macOS Catalina came out, and I had no video in Google Meet for a week until I discovered the browser now required specific permissions to be able to access the camera. The latest versions of Mozilla Firefox, Google Chrome, and Safari may require a user to explicitly give permission to access the camera, microphone, and to share their screen depending on their security settings. This may be as simple as clicking "Agree" on a pop-up notification to something more involved as going to the browser or system preferences.

I can't find the button!

It is important to remember that user interface design for mobile applications is different from those intended for desktop, for web use, or in dedicated meeting room hardware. Consequently, features that may be available in one platform may not necessarily be available in another. This is something to remember when using features such as starting a poll in Zoom or screen sharing with the mobile version of Google Meet (while it is officially a feature, I have not had much luck with getting it to work smoothly).

A check of the Google App Store shows that Zoom is currently the most popular and downloaded business videoconferencing application, followed by Google Meet and Microsoft Teams (Google, 2020). Cisco Webex is next with significantly fewer users. An interesting observation is that the Google App Store has two separate categories for applications that can be considered video conferencing software. Zoom, Microsoft Teams, Google Meet, and Cisco Webex are considered "business" applications, while Facebook Messenger, WhatsApp, Discord, and Telegram are for "communication." This categorization is also largely reflected in the feature set of these applications, with the latter group having smaller meeting capacities and less business meeting features such as screen sharing and collaborative

annotation or whiteboarding. A reduced feature set may be an advantage depending on the application's desired use as it reduces the time needed to learn how to use the application and the information clutter a user encounters during a meeting.

This Meeting is Being Recorded

As classes moved to inside students' homes, privacy has become a pressing concern. Students may share their learning space with other members of the household or may interrupt mid-lesson with a question or a chore (National Privacy Commission, 2020). At present, there is no videoconferencing application that protects from unauthorized screenshots or video recordings. Truth be told, there is nothing to stop a determined individual from recording with a mobile phone, even which such a feature in place. Users can minimize exposure to their homes by using custom backgrounds, which is now a feature in all the common videoconferencing applications. All of these applications also offer control of camera and microphone availability.

These privacy concerns, in fact, could be used to argue against the use of videoconferencing applications in online learning. There are many remote learning models and massive open online courses (MOOCs) that do not use videoconferencing in their pedagogy. Learning management systems (LMS) may be used in place of videoconferencing to facilitate activities that have traditionally been done in a classroom, such as exam invigilation or even the discussion of routine ideas and key principles. This opens up the opportunity for videoconferencing and synchronous meetings to be used not as a way of delivering lectures, but as a complementary tool to supplement the social and participative experiences of learning that the pandemic has wrenched away from our students.

Another note of concern on the matter of privacy is the use of videoconferencing applications frequented by students in a social role outside of the classroom, such as Discord, Facebook Messenger, and WhatsApp. Care must be taken to distinguish between preference for applications in a student capacity versus a personal capacity. While some students may desire to use the same applications for simplicity and convenience, other students may want to separate applications they use in school from those they use to relax outside of school.

Leave Meeting

Selecting a videoconferencing application for online learning is not about the number of features or price of the system. The most common applications, namely Zoom, Google Meet, Microsoft Teams, Cisco Webex, and Skype share a common feature set, with Google Meet having the least amount of features in the group and Zoom the greatest number of features. To paraphrase the age-old adage, it is not about the tool but how you use it. We as educators are responsible for cultivating productive and safe learning spaces for our students outside of face-to-face instruction, and tools for synchronous conversations are just one aspect of a larger learning environment that we need to develop for an effective learning experience.

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