

Discussion paper on class recordings

UBC Learning Technology Advisory Group

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1. Introduction and summary

This discussion paper provides information on benefits and drawbacks of recording synchronous, in-person classes at UBC (sometimes referred to as “lecture capture”), as well as a set of recommendations for the university community to consider as we contemplate continuing or expanding this practice in the future. The focus of the paper is on the value of recording in-person class meetings in supporting teaching and learning goals, though there are other benefits and drawbacks as well that are touched on briefly.

The paper has been written by members of the [UBC Learning Technology Advisory Group](#) (LTAG), and is based on discussions at several LTAG meetings during the 2021-2022 academic year. This advisory group includes students, faculty and staff from both UBC Vancouver and UBC Okanagan. The paper is based on experiences and views of students, faculty, and staff on the committee.

This paper is meant to contribute to ongoing discussions around recording in-person class meetings at multiple levels: individual faculty, unit and Faculty leadership, senior academic leadership, learning technology governance committees, and support units such as UBC IT, the Centre for Teaching, Learning, and Technology, and the Learning Technology Hub. In addition, we understand there may soon be a process begun to select an enterprise video platform for the institution, and we expect that the information in this paper will be useful for that process.

The points in this paper could apply to different ways of recording in-person classes, such as:

- Audio only
- Audio voiceover with slides or other resources
- Video of the instructor with a whiteboard or slides in the background of the camera view
- Video of the instructor with one or more other video inputs such as slides or document cameras (e.g., through Panopto or Zoom)

In summary, the paper discusses:

- Benefits of class recordings, including supporting equity in teaching and learning, providing resources for study after class, and (depending on the recording) as sources for teaching materials that could be used in later courses.
- Challenges and risks of class recordings, including possible impacts on student attendance, impacts to classroom dynamics, appropriateness for different kinds of teaching practices, and technical considerations.

- Recommendations for use and support of class recordings at UBC, for faculty, students, and others at the institution.

2. Benefits of class recordings

To record live classes and make the recordings available to students have benefits for both students and instructors, and for curriculum development.

One of the most significant potential benefits of classroom recordings is to promote equity in learning. For students who have to be absent for a class, regardless of the reasons, being able to access a recording provides an opportunity to make up the missed content. This has been particularly useful during the pandemic, as students who are sick will be more likely to stay home rather than feeling they need to attend class to keep up with the content (and staying home when sick will likely continue to be a common practice after the pandemic as well). In addition, class recordings provide additional assistance to students for whom more time is helpful to support understanding of learning materials. Finally, recordings allow students with diverse language and/or cultural backgrounds to have more time to focus on either linguistically difficult vocabularies and expressions, academic/technical language, or culturally unfamiliar content in reviewing.

More broadly, class recordings offer additional learning and reviewing materials for students. Traditionally, students rely heavily on the synchronous, one-time class meetings for learning, and when preparing for exams or other assignments they review course materials as well as their notes. Making class recordings available gives students an additional opportunity to learn the synchronously-delivered materials as well as an additional source of material they can review for assessments. This may, in turn, reduce students' anxiety over taking notes during class time as they could go back to study the parts they had trouble with, or complete their notes if they missed anything.

For instructors, class recordings can be used as an extra source of teaching material. Instead of repeating important information, an instructor could use clips from the recording to highlight challenging materials or direct students' attention to certain parts after class. In addition, class recordings can also be used to improve one's own teaching in formal and informal teaching review processes. For example, in [formative peer review of teaching](#), instructors could share recordings and collect feedback and initiate discussion based on what they did in the class meeting. Instructors could also review recordings for their own reflection purposes to see if they want to change anything in the future. In workshop presentations or sharing teaching experience, instructors could use their own recordings as examples of effective teaching methods or motivations for changes.

With the development of digital technology, and changes to teaching and learning over the last couple of years, teaching and learning practices are evolving. Lecture capture offers an opportunity to combine in-person teaching with a few of the affordances of online access, including the benefits noted above that can support student learning in different ways than were widely available before. Instructors could choose to use their class recordings in later online or in-person courses, or even possibly in open online courses, thus contributing to further curriculum development in higher education.

There are alternative ways to achieve some of the benefits that class recordings bring. For example, instructors could share their slides after class, perhaps with some further explanations/annotations, to

help students keep up with material if they have to miss class. With extra TA support or office hours, instructors could also provide more individualized learning experience for students with different learning needs. Instead of class recordings being a source of extra learning material for a course or later iterations of a course, instructors could choose to create videos outside of class focused on particular topics, such as through Camtasia, Kaltura, VideoScribe, or Zoom.

There are also several challenges and potential drawbacks to doing class recordings, and this practice is not one that will fit the pedagogical practices or goals of every course.

3. Challenges and risks related to class recordings

The potential challenges and risks with recording classes include those related to attendance, pedagogy, student learning strategies, technology, and more. They start with the concern that without the incentive to attend to get the material, students may simply not show up. Others include the notion that a recording is unforgiving in preserving mistakes or off hand comments taken out of context. Still others insist that dynamics of an effective class are impossible to recreate if mediated by technology.

Attendance

When faced with the prospect of lecture content being available moments after a class is complete, many students may consider not attending class and watching the recording instead. As noted above, this could be for numerous reasons, including feeling unwell or needing to care for family members, or due to long commute times or unexpected changes to work schedules. According to [a study by Skead et al.](#), in the law school at the University of Western Australia, compared to types of classes that are not usually recorded (e.g., tutorials or labs), lectures with class recordings are much more likely to be skipped. The authors found that the availability of lecture recording is a leading common reason for students to miss class (followed closely by work commitments).

One thing to consider is that students may be less likely to attend if the class is mostly made up of lectures without much in the way of interactive or active learning elements, because it may seem that attending class in person offers little added value to watching a recording. In other words, attendance patterns can be a source of feedback on how students view the pedagogical value of certain teaching methods. Being explicit about the learning activities that will occur within a session, and the rationale behind them, is one way to help students take ownership of their participation in the class by more effectively deciding how to allocate their time. Using class time for activities that watching a video can't replace, and explaining to them the value of attending class for their learning, can help encourage attendance and also potentially help raise awareness of effective learning strategies.

Class content

Class recording can pose extraordinary challenges in courses with contentious or sensitive content. The complexity of such topics and the various sides of the topic may be covered in a few classes, or through pre-class readings or online class discussions. The lectures and discussion of such topics are often also contextualized and tailored for the audience of the particular course. There can be a significant risk if such class recordings are shared beyond the participants in the course, particularly if only selected parts are distributed or used out of context for purposes beyond learning in the course.

In addition, if inappropriate or harmful statements are made in class, we have to consider the risks of these recordings possibly leaving the class and being disseminated. Not only are these such things inappropriate for dissemination, they can also spread the harm further and traumatize more people.

In addition to considering “what” is appropriate for class recording, we should also consider “who.” Students may not be willing to be captured on class recordings, and this may affect how they participate in the class (as discussed further below). Also, it may not be appropriate to record Indigenous speakers or other guest speakers.

Note that the [UBC Principles for Classroom Recordings](#) provide information that may help address some of these concerns. They include restrictions on how and by whom class recordings can be shared; though this does not mean sharing will not happen outside of these guidelines. In addition, the document notes that guest speakers must provide direct, written consent for recording, and students must be notified that classes will be recorded and how the recordings will be shared. Students do not need to provide written consent if the recordings will only be shared to participants in that course section for that term.

Pedagogical approaches

The pedagogical approach in some classes is not appropriate for recording, such as those that include small group work, active learning activities, or discussion that could be hampered by the kind of filtering students or faculty would do if the class were recorded.

Many faculty have been working on course design to increase active learning or interactive learning practices in their courses. In addition, some courses have a significant focus on experiential learning. The negative effects for courses of these types are obvious if students choose to rely on class recording instead of coming to in-person classes. Watching recordings is not an adequate substitute for participating in such activities during a class in real time, as they are often meant to help students more deeply understand or apply knowledge or skills before moving on to other topics in the course.

Class recordings seem to be more appropriate for delivery methods where instructors are actively speaking and students are mostly passively listening. Even for these teaching situations, students’ immediate verbal or non-verbal reaction to lectures are valuable feedback for instructors. These reactions can help to shape the direction of the lecture and are an integral to part of the teaching and learning process. Unfortunately, these reactions are entirely lost if students are only watching class recordings. The use of class recordings may give students the false impression that a course can be reduced to a set of recorded lectures.

Some faculty have also expressed concern that if more and more courses are using class recordings, there will be pressure for others in the institution to do so as well, even if, for reasons noted above, they are not appropriate in those courses. There is a fine balance to be struck between ways in which class recordings can be used to support student learning (as noted in the previous section), and respecting that they do not do so in all teaching and learning contexts. Making class recording a default practice may result in some instructors feeling pressured to record all classes without deeply considering the rationale for doing so and whether it fits with their pedagogical methods or the learning outcomes for the course.

Class dynamic

The changes to the class dynamic caused by a camera and microphone are potentially far reaching and complicated. Some students may feel less willing to participate with recording taking place. One reason may be due to concern about asking a question that others may think they should know, that will be captured in the recording. In classes with a significant discussion component, students may be less likely to share their initial thoughts on a topic that they may later change their minds about. Some classes focus on topics that may be contentious or politically dangerous for students to discuss on a recording. Students with anxiety may be particularly reticent to participate in a recorded class. The spontaneity that many associate with a dynamic class could be threatened. Additionally, the privacy of student data is another concern with classroom recordings. Students may simply stop participating over these concerns.

Faculty have also expressed concern that they may filter what they say if their classes are recorded, for some of the same reasons as students may do so. Some have reported concern about always being on the record and recorded comments potentially being taken out of context later. This can affect the quality and spontaneity of teaching as instructors second guess in real time what they should and should not say. In some cases, where instructors can choose specific topics for courses, they may restrict which topics they choose if the classes are to be recorded, due to concerns about risks for all involved of recording discussions of those topics.

Learning strategies

Another criticism of recorded lectures has been related to concern about students' allocation of their study time to reviewing the recordings. Some students may spend too much time reviewing lectures, forgoing other effective study activities, or trying to catch up on many missed classes all at once without enough time to digest and understand before moving to later topics. The availability of class recordings may also encourage students to make choices in their learning schedule that may not be most effective for learning, or for their health. For example, students may leave the viewing of recordings to the last minute and add unnecessary stress for their learning, especially before midterms and finals.

As a resource format, recorded lectures on their own can encourage passive watching, which is not the most effective means of studying or learning. Interactive elements could be added into the videos, though that takes a significant amount of time and effort.

In addition, viewers' approach to watching lectures can be variable and haphazard. Regardless of how much time and effort a lecturer has put into creating a recorded lecture, one has no influence on the downstream infrastructure. A student may watch on their phone or other mobile device, interrupt at any time, watch at a variety of speeds in a variety of locations and potentially concurrent with other potentially distracting activities. It may be helpful to support students with guidance on how to use all the available options to optimize their study time.

Offering class recording as a default component for courses may suggest to students that watching class recordings is an equally effective learning approach as attending in-person classes, or send the unintentional message that students are expected to learn well from class recordings. Students may also mistakenly expect class recordings to be as effective for learning as intentionally or professionally produced high quality teaching videos, which may not be the case; the latter may be designed to support learning in ways that a long, uninterrupted lecture recording cannot.

Overall, if class recordings are used in courses, it is helpful for faculty to support students to learn how to interact with the recordings in the ways that best support their learning. Uncovering these ways may take some time, experimentation and student involvement. Finding inspiration in affordances offered outside of the post-secondary context may be useful. For example, a student led 'watch party' similar to those provided on movie streaming platforms like Netflix might appeal to some students.

Recording

For recordings, factors like audio quality, lighting and the camera are important. Audio can be often taken for granted but is a crucial component of any recording. In addition to being a technical consideration, finding a way to ensure that sound quality is good for every session requires someone to optimize microphone placement and test batteries. In situations where it is desirable and fulfills guidelines for student privacy, capturing audience sound may require microphones in the audience and the practice of actually using them. Tossing around a Catchbox microphone (<https://catchbox.com/>) is a playful way to change practice and highlight the importance of developing new ones. Another way is to reiterate to every person standing in front of an audience that repeating the question is a good practice, which captures questions in the recording without identifying students who asked them.

In addition, there are several reasons why post-recording editing may be useful or needed.

The search for the right balance between easy automatic lecture capture and high quality has revealed shortcomings in classroom scheduling. When implementing the lecture capture tool Panopto at UBC Vancouver it was assumed that class start and end times were accurately reflected in the course schedule. In reality many lecturers often are waiting for the previous lecturer to relinquish the room and end up starting late. Even when starting right on time, pre-class warmup banter and personal interactions with students can be captured on the recording, and ideally these should be removed before the recordings are shared.

Other reasons for wanting to do post-recording editing include removing identifying student information or touching up a poorly delivered moment that could go viral if taken out of context. Editing requires access to the raw, uncompressed capture file and can be very time consuming; it can sometimes add several hours of work for every hour of recorded lecture. This means either faculty need to have the skills and time to do the editing, or there needs to be enough skilled staff with the capacity to do it. Finding the resources to store and manipulate gigabytes of digital video is also likely a costly challenge.

4. Recommendations for class recordings at UBC

In this section are some recommendations based on the considerations above, for instructors, students, and others.

For instructors

There are numerous valid reasons why some faculty may choose to record classes and others may not, including the considerations noted above. Whatever the choice, it is best to explain to students the reasons for it. Clearly communicate to students, at least in the syllabus and possibly in other ways, whether you are recording classes or not, and your rationale for this decision. For example, what might recording classes allow that underlies your decision to do so? Or what might it hinder that means it is not a good choice for the course?

The rest of this section provides recommendations for instructors who are recording classes. Note that some of these involve more effort than others. In providing recommendations, we are not suggesting that all of these actions must be done, or be done solely by individual instructors (though the Principles for Class Recordings in the first bullet below should be followed).

Copyright, IP, privacy, and sharing guidelines

- Be sure to read and follow the [UBC Principles for Classroom Recordings](#), which provide guidance on topics such as copyright and intellectual property, notification and consent requirements, privacy and sharing (including guidelines for students on using and sharing class recordings), and more.

Accessibility

- Class recordings should have captions before they are shared with students. Zoom, Kaltura, and Panopto all have built-in automatic captioning. When feasible, it is best to fix mistakes in the auto-generated captions.

Pedagogical considerations

- As noted above, clearly communicate to students why you are choosing to record classes, and explain how they can best use the class recordings within the context of the course and the learning objectives.
 - For example, discuss with students how they could most effectively use recordings as part of (not the whole of) their study strategies, and how to supplement watching recordings with other study strategies. You could explain that watching a video recording, even more than once, is not enough by itself to help them best understand and retain information, or practice skills needed for assessments or to attain learning outcomes.
 - Unless the course is designed otherwise, explain to students why recordings are not adequate substitutes for attending class on a regular basis. For example, what is happening during the class that they would miss and what are the pedagogical goals of those activities?
- Consider ways to continue to encourage engagement by students who need to miss one or more classes and watch recordings instead, such as asking all students to participate in some asynchronous, online activities based on the material discussed in class.
- Consider options for how recordings may be shared with students, and clearly communicate to students how you will share the recordings with them and your rationale for this choice. Factors to be considered in deciding on how to share recordings may include what to share, when, with whom, and for how long. Please note that choices made could lead to equity concerns, as noted below.
 - What to share: the recording in its entirety, a section, or a few sections, with or without student discussion (note, however, that editing out portions of videos can be time-consuming).

- Where feasible, consider recording only portions of class meetings focused on presentations by the course instructor, TA, guest lecturers, etc., and not recording portions where students are contributing significantly to discussions, doing group work, and the like. This could help address the concern that being recorded might reduce participation from some (or many) students.
- This is challenging with the way Panopto is currently set up for most faculty at UBC Vancouver, where recordings are scheduled to start and stop at the beginning & end of class times only. To share only portions of recordings on Panopto currently requires editing the videos.
 - When to share: immediately after class, shortly before an exam, etc.
 - For how long: limit the sharing to a short period of time, or for the rest of the term, etc.
 - With whom: the whole class, the students who have missed classes, etc. Note, though, that it is time-consuming to keep track of whom to share the recording with and for how long.
 - Also, this raises equity concerns: e.g., if sharing only with students who miss classes, this means those students have the ability to review recordings several times that other students do not.
 - Providing students the opportunity to have a voice in what should be recorded / shared may help them better reflect on effective learning strategies.

Technical considerations

- As noted above, audio quality is of critical importance to class recordings. If using built in or portable [recording systems at UBC Vancouver](#) or [at UBC Okanagan](#), be sure to use the provided microphone setups. If you are using your own equipment, it is best to use a decent quality, external microphone attached to your device (wirelessly if you mean to move around), such as a lavalier microphone. This will provide better sound quality than, for example, a microphone built into a laptop.
- Student questions and comments won't likely be audible in the recording if you are using a lavalier microphone. It's good practice to repeat them so that students who miss class can understand what you may be responding to when you provide answers or further comments.
- If you want your face to be visible in the recording (rather than, e.g., only slides and voice), you will need to stay in range of the built-in room cameras, which means you may not be able to move around the room as you might otherwise (depending on the camera setup). It could be an awkward experience for students watching the recording later to have the camera pointing at an empty wall for long periods of time.
- Recordings capture only the primary screen, so any information presented on the secondary screen (e.g., from a document camera or second device) is not captured except within the background of the video directed at the instructor. If capturing the second screen is crucial to your teaching, the existing class recording technology at UBC may not support your needs.

- For UBC Vancouver: If the room you are scheduled to teach in does not have the equipment to support your recording needs, be sure to reach out to Audio Visual Services as soon as possible: av.helpdesk@ubc.ca.

For students

- Consider that, as noted above, there are valid reasons why instructors may choose not to record classes. They may instead share slides or other materials to support students who have to miss class. Alternatively, one option is to try to find one or more people who would agree to share notes with each other if one of you misses a class.
- Where they are available, class recordings should be used to supplement in-person learning, not as a substitute (unless the instructor has explicitly designed the course to provide students a choice of in-person or online attendance). They can be useful for when students need to miss one or more classes, or for the purposes of reviewing material in preparation for assessments. They are not, however, an adequate substitute for in-class learning, nor should be considered the primary mode of engaging in courses. For example, frequently students will miss out on the ability to engage in in-class activities that are designed to support learning, or the opportunity to ask questions in the moment that might otherwise not be answered in the recorded video.
- Note that, just as re-reading a textbook by itself isn't entirely effective as a study strategy, neither is simply re-watching recorded classes. And neither is very effective if done all at once, shortly before an exam or other assignment. It is better to be keeping up with classes throughout the term in order for you to have the time to better understand and work with the material before moving on to later topics. Instructors can be good resources for advice on effective study strategies for their courses.

For others

Institutional expectations

- Class recordings can be helpful learning and teaching resources, though, as with the use of any other learning tools, they should not be the default expectation of teaching practice at UBC. Faculty who choose not to do so due to legitimate pedagogical, technological, or other considerations should not be pressured to do so.
- In addition, class recordings should not be used as a way to increase class sizes beyond the physical seating capacity in rooms; each student should be able to attend class in person while using the class recordings as an additional learning resource when needed.

Communications

- All messaging about class recordings should clearly communicate that class recordings may work well in some contexts but not in others, and that choices to do so or not will legitimately differ across the institution.

Guidance and support

- Currently, there are several different websites that provide very useful information for class recordings; consider whether this information might be curated/consolidated to make it easier for

faculty and students to find. It could be useful to have one place where either all of the information is housed, or that has links to the various places where the information is located.

- In addition to technical guidance, it would be useful to have:
 - Advice for faculty on options for how they might use class recordings to support student learning, as well as contexts when class recordings may not be appropriate. This could include potential pedagogical challenges as well as mitigation strategies where relevant.
 - Advice for students on how to use class recordings effectively to support learning. For example, this could be incorporated as part of the Jumpstart curriculum, either in the form of a self-study Canvas module or a topic in Faculty-led sessions.

Decision making processes

- When making decisions about class recording equipment and platforms, it is important to consider the balance among student experience, faculty effort, and technical and cost considerations. E.g., if a new enterprise video platform is chosen, will it allow easy transfer of Zoom recordings into the platform without significant additional effort on the part of faculty?

Technical considerations

- Faculty have expressed a desire for more autonomy over the class recordings system than is available with the current setup of Panopto in UBC Vancouver. Finding ways to increase faculty involvement in the design of the offerings should be a high priority.
 - Having more control of start and stop times of the recordings:
 - While having recordings start and stop on a preset schedule can avoid issues such as instructors forgetting to turn recordings on and off themselves, it also leads to issues such as recordings beginning before instructors are ready or going on later if classes end a bit early. This means possibly capturing conversations with students before or after class at the front of the room.
 - Some instructors may be willing to have parts of their classes recorded but other parts not, depending on what is happening over the course of the class meeting. Currently faculty do not have the ability to stop recordings at a relevant point during the class, or re-start later.
 - Having access to be able to easily edit or delete recordings: For example, if a faculty member wanted to break the recording into smaller chunks and ask students to do an activity after each one, they need access to the raw video files.
 - Having more autonomy or more flexibility in requesting recordings: Currently, at UBCV, a request for recording has to be made 48 hrs in advance. This is not always possible and creates obstacles for the practice of class recording.
 - More control over availability settings of the recordings: Currently, the Panopto viewing links are available to anyone with the URL. Having a way to restrict availability to students

in the relevant courses would be better for several reasons, including privacy and intellectual property considerations.

- Increased input sources in recording: Currently, the class recording only includes the primary screen. It is important to be able to record the secondary screen in addition to the primary screen or the ability to switch between the input from different devices.

Other

- Getting instructors to identify learning activities that are not currently supported by classroom AV systems is a good step forward to building a more robust and flexible lecture capture infrastructure that supports a variety of modes of teaching and learning.
- Setting institutional guidelines on the length of retention of files is in its nascent stage. Getting a cohort of instructors well versed enough to give input into these decisions is crucial to make decisions driven by academic needs rather than financial or licensing needs.
- In an ideal world the recording of a lecture would have perfect audio and the camera view would follow the intention of the instructor. It would focus on the lecturer during moments of reflection or emotional connection, and focus on figures, slides or photographs when factual details were discussed. Any distracting elements of the experience would be edited out. To get closer to this ideal the recording requires good hardware, planning, setup and optimization.
- This paper has been developed through conversations with the Learning Technology Advisory Group at UBC, based on the experiences of students, faculty and staff in that group. We did not review the research literature on class recordings. A review of such literature could be useful as a supplement to this discussion paper. As one starting place, [Banerjee \(2021\)](#) provides a systematic review of recent English-language literature on lecture capture, concluding that “lecture capture seems to work well if and only if students use the technology as a supplementary resource—rather than an alternative—to live lectures.”

5. Appendix

UBC Guidelines, documentation, and other resources about recording live, in-person classes.

- [UBC Principles for Classroom Recordings](#), prepared by members of the Provost’s Offices at both campuses and others.
- [Instructions for using built-in or portable media capture equipment at UBC Vancouver](#), using Panopto, posted on the UBCV Learning Spaces website. Includes documentation, walk-through videos, information on scheduling recordings and which rooms have built-in equipment, as well as a list of FAQ.
- [Instructional videos for using classroom recording equipment at UBC Okanagan](#), including presentation and recording in hybrid classrooms, large classrooms, and small classrooms.
- [Instructions for recording in-person classes with Zoom](#), on the Learning Technology Hub Zoom Instructor Guide (scroll down to find the accordion item on this topic).