

Suggestions and Tips for Online Examinations

During a pandemic, in-hall examinations carry a certain health risk to the students. In case synchronous examination is still included in the assessment scheme, you may have to conduct examinations online. This document provides suggestions and tips for conducting basic proctored online exam (See Section 1), as well as other forms of online assessment that require less digital literacy skills (See Sections 2 and 3).

We recommend that you weigh the risks and benefits carefully before choosing to do an invigilated online exam as it is not an easy task. Both you and your students must get familiar with the solutions that you choose, and technical problems may occur anytime during the exam. Moreover, no solution can entirely prevent cheating and academic misconduct. You should take more measures to ensure the online exam is fair and smooth.

1. Invigilated Online Examination

Fairness and feasibility in operation are two issues that students concern most when they are required to take a high-stake online exam. It is very important that the exam setting can prevent cheating or favoring a specific group of students. It is equally important that the exam is technologically reliable and feasible. You don't want to see that some students fail to take the exam because of unstable internet connection or not having the tools/devices required.

The introduction of online proctoring solutions makes it possible for teachers to invigilate exams remotely. However, invigilating an online exam can be challenging. It relies heavily on the proctoring software/devices, so you and your students must be familiar with the tools and the procedures. Moreover, computer systems may fail occasionally. Therefore, you must invest considerable time for preparation and enough manpower during the exam for invigilation, technical support and troubleshooting.

In the following sections, we will introduce three solutions for different kinds of invigilated online exams:

- **Blackboard + LockDown Browser (and Respondus Monitor)** (suitable for both synchronous and asynchronous online exam)
- **Zoom + any online quiz system (e.g. Blackboard, uReply)** (suitable for synchronous online exam)
- **Zoom + paper-form exam** (suitable for synchronous online exam that requires students to write equations and/or draw graphs)

For a list of digital assessment and invigilation tools currently available at CUHK, check out [this presentation](#) (p.4-5) by ITSC (updated as of 21 Feb 2022).

1.1. General Tips for Invigilated Online Exams

Before the exam

- Design your exam questions that require higher cognitive abilities (apply knowledge, analyze a problem, create a solution), so that answers cannot be quickly found online or from textbooks to reduce the incentive for cheating.
- Make sure students are well-informed about the exam arrangement. You may post an announcement on Blackboard and via email.
- Inform students about the official [rules to be observed in taking online course examinations](#) issued by Registration and Examination Section (RES). Remind them that violation of these rules may lead to disciplinary action.
- Provide detailed instructions to students about how the exam will be carried out, e.g. what devices are needed, how to submit the answers, who to contact when troubles occur, etc.
- Explain why you design the exam the way you do. Listen to students' opinions and concerns and try to address them.
- If some students indicated they do not have a suitable environment for taking the online exam, RES or Graduate School may be able to arrange those students to take the exam in classrooms. Please refer to the announcement by the respective offices for detailed arrangement.
- Conduct a practice session/ mock exam to identify potential problems, as well as to get students familiar with the exam setting. You may use the [Online Exam Trial](#) on Blackboard by ITSC.
- Consider adding a [copyright statement](#) and customized [watermark](#) in each page of the question paper to deter students from sharing the questions with any third-party such as online tutoring sites. You may use this copyright statement for reference: "THE COPYRIGHT OF THIS CONTENT, PRODUCED BY STAFF MEMBERS/ TEACHERS OF THE CHINESE UNIVERSITY OF HONG KONG (CUHK), BELONGS TO CUHK. STUDENTS SHALL NOT DISTRIBUTE/ SHARE/ COPY THE CONTENT TO A THIRD-PARTY."
- Request IT support in advance from your department/unit or ITSC (via [this online form](#)) if needed.
- Prepare a contingency plan in case of system failure or other unexpected problems.

During the exam

- Arrange enough staff (e.g. teaching assistants) to invigilate the exam. Try assigning students to each invigilator according to their SIDs or surnames.
- Be aware if students require any assistance during the exam. Offer help or execute the prepared contingency plan if the problem remains. In case of any disputes, you may require students to screen capture everything, so they have a record of the problems for further follow ups.

After the exam

- Give reasonable time for students to upload their answers after the exam if it is necessary.

- Confirm the number of attendees and check if all students have submitted their answers successfully online. Provide assistance if needed.

1.2. Blackboard + LockDown Browser (and Respondus Monitor)

1.2.1. What is LockDown Browser (and Respondus Monitor)?

Respondus LockDown Browser (watch [demo video](#)) is a custom browser that locks down the testing environment in Blackboard to prevent students from using other browsers, applications and communication tools while taking the exam. Respondus Monitor is an add-on feature of LockDown Browser to enable automated proctoring for online exam using a student's webcam. The University has obtained a campus-wide license of the software and enabled it on Blackboard.

Features of LockDown Browser: <https://web.respondus.com/he/lockdownbrowser/>

Features of Respondus Monitor: <https://web.respondus.com/he/monitor/>

1.2.2. How to implement

Follow the instructions here:

http://www.cuhk.edu.hk/eLearning/c_systems/Respondus/lockdown-teacher.html

1.2.3. Disadvantages/ pitfalls

- *Burdens on students:* This solution requires students to do a number of things, e.g., download and install the LockDown Browser application, use the camera and learn to use a new software. So, some students do not like it because it seems to be a lot of work. Moreover, students often have concerns about using a webcam. They may not have a webcam installed in their computer, or may be unwilling to show their surroundings.
- *Time-consuming to students:* It takes time to do the webcam check and facial detection check in Respondus Monitor and technical problems may occur during the process.
- *Potential issue with Blackboard shortcut:* Some students may encounter difficulties if they try to use the exam link in the "Activity Stream" to open the exam. To avoid potential issues, remind students to access the Blackboard course via the "Courses" page, and locate the exam in the content area in the course site.

1.2.4. Tips

- *Good communication:* To make students feel more comfortable about trying the new software and turning on the webcam, you may explain further on the rationale in using these applications and familiarize them with what they will be able or unable to do in a locked-down test environment. Here is a good video to show to students: <https://www.youtube.com/watch?v=XuX8WoeAyCs>

- *Get students well-prepared:* Make sure all students obtain a functional webcam. Give them reasonable time to get the equipment ready. Encourage them to read the instructions carefully before taking the exam: http://www.cuhk.edu.hk/eLearning/c_systems/Respondus/lockdown-student.html. Remind them to download and install the Student Version of LockDown Browser for The Chinese University of Hong Kong in advance and launch the application to take the exam.
- *Randomize the questions/ answers:* Consider randomizing the order of the questions/ answers to further minimize the chance of cheating. Learn more about the feature here: https://help.blackboard.com/Learn/Instructor/Tests_Pools_Surveys/Test_and_Survey_Options#ultra_randomize_questions
- *Synchronous exam (Release content with dates):* This approach is suitable for a formal high-stake exam. To do so, release the exam in a defined period of time (say, between 9 to 11 a.m. on a specific day), so that students can only take the exam within the specified timeframe. For more instructions: https://help.blackboard.com/Learn/Instructor/Course_Content/Release_Content#ultra_release_rules
- *Asynchronous exam with a time limit:* You may open the exam for a longer period and allow students to take it at their own pace. Consider adding a time limit for the exam to get students focused on the tasks.
- *Submission receipt:* Note that students will receive a system-generated submission receipt by email once the submission is successful if the exam is a [Blackboard Assignment](#). If the exam is a [Blackboard Test](#), students will see the ‘Test saved and submitted’ message after submitting the test.

1.3. Zoom + any form of online quiz systems

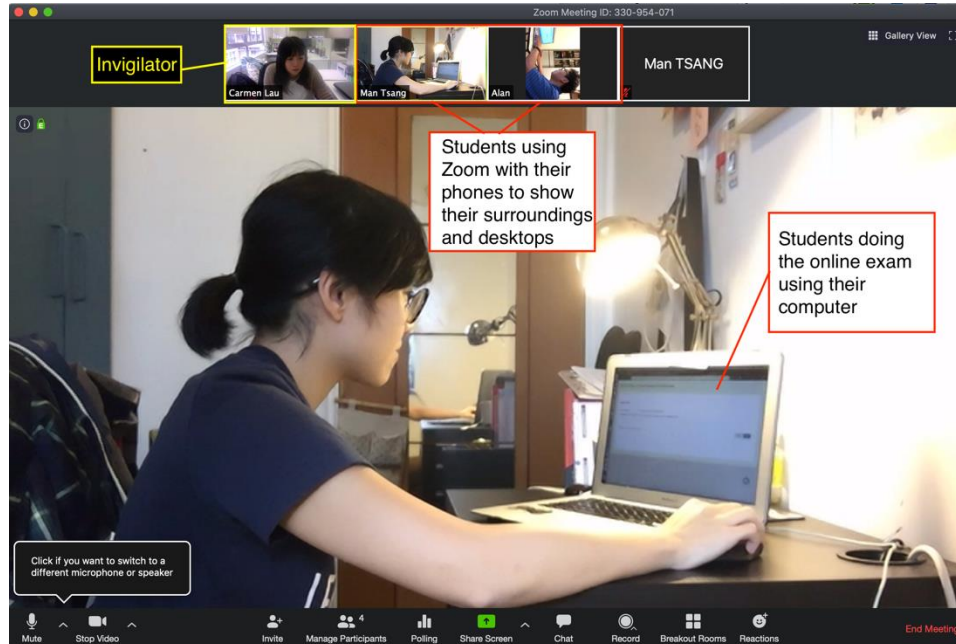
This solution makes use of Zoom as a proctoring device to observe real-time students’ behaviors and surroundings, together with any online quiz systems such as Blackboard test and uReply to run a remote exam. The same set up can also be applied to paper-form examination as described in Section 1.4.

The features of this solution are:

- Most CUHK students have some experience using Zoom and online quiz systems such as Blackboard test and uReply. Hence, less training time is required.
- All smart phones are equipped with camera(s). Students don’t need to purchase a webcam if their computer is not equipped with one.
- You can observe students’ surroundings and behaviours in real time to deter them from cheating.
- It takes time for students to set up their phone camera as instructed below. However, once the setup is done, students can take the exam using the online quiz system of your choice as usual.

1.3.1. How to implement

- Set up a test using “Test and Survey” in Blackboard or “Multi-item” in uReply (watch [demo video](#)) as usual.
- Provide detailed instructions to students about the exam arrangement BEFORE the exam takes place. For example:
 - Remind students that they will be using OnePass login to take the exam in Blackboard or uReply.
 - **Advise students to use a computer (desktop/laptop) for the exam plus a mobile phone/ tablet for Zoom.**
 - Ask students to place their phone camera so that their **computer screen, desk, hands and themselves** are clearly captured in Zoom.
 - Provide the Zoom meeting details to students (the invitation link, meeting ID and password).
- Launch the Zoom meeting. Ask students to join the meeting using a phone at a designated time slot for attendance registration. Their video should be turned on. Ensure that “[focus mode](#)” is enabled in Zoom.
- When everyone is done with taking attendance, allow time for students to adjust their phone camera, so that their computer screen, desk, hands and themselves are clearly captured (see an example below).



- When everyone is ready, activate the exam link (if Blackboard is employed) or release the session number (if uReply is employed). Ask students to access the exam using their computer according to your instructions.
- If you are using uReply, remember to end the session when the exam time is up.

1.3.2. Disadvantages/ pitfalls

- *Burdens on students:* Similar to what is mentioned in Section 1.2.3, students may not like it because of the preparation work. They are required to download and install Zoom in their phone and prepare at least two devices – one for the online quiz system and another one for Zoom in order to take the exam. Not to mention most students may have concerns about streaming themselves and their surroundings online.
- *Disturbances during the exam:* Zoom requires internet connection to run, so it is impossible for students to put their phone on airplane mode during the exam. There may be messages or push notifications which distract students. Even if they have disabled all notifications of their apps beforehand, there may still be unexpected phone calls which can cause interruptions.
- *Unexpected technical problems* may disrupt the invigilation process. For example, students may leave the Zoom room accidentally because their phone runs out of battery or due to unstable internet connection. To prevent these situations, ask students to fully charge their devices in advance or keep them charged throughout the exam. More so, recommend them to stay closer to the router for better Wi-Fi signal.

1.3.3. Tips

- *Record the Zoom meeting:* You may want to record the Zoom meeting to keep a record of what students are doing during the exam in case of any disputes. Inform students about this practice and explain beforehand how you will use the recording.
- *Enable “Focus Mode” in Zoom:* The [focus mode](#) feature in Zoom gives the host and co-hosts view of all participants’ videos without other participants seeing each other, so that students’ privacy is protected. This also ensures that the answer book of one student is not viewable to other students.
- *Disable various functions:* Disable functions like “Share screen”, “In-Meeting Chat”, “Annotation” from student’s side to prevent cheating. Make sure you have muted everyone before the exam starts.
- *Use “Breakout Room”:* If you have a large class, consider dividing students into groups and assigning them to different rooms. You may assign your teaching support staff to go to the rooms to supervise students and help them when problems occur.
- *Customize “Waiting Room”:* You have the option of [customizing the waiting room](#) in Zoom to display text (up to 400 characters) or video instruction while students are in the waiting room. This helps to save time and ensure students are informed about rules of the exam.
- *Include “CUSIS class code” when scheduling Zoom meeting for exam:* This helps colleagues at ITSC to provide better support to teachers during exam period. Please refer to [this article](#) for detail.

1.4. Zoom + paper-form exam

This solution has similar features and settings as seen in Section 1.3. It is particularly suitable for an online exam that requires sketching, drawing and/or writing equations and formulas.

1.4.1 How to implement

- Prepare your exam paper as usual and convert it into a PDF document.
- Ask students to prepare enough sheets of blank A4 paper to write their answers on.
- Provide Zoom meeting details (the invitation link, meeting ID and password) to students in advance. Require them to join the meeting using a phone at a designated time slot for attendance registration. Their video should be turned on.
- When everyone has done registering for their attendance, allow time for students to adjust their phone camera, so that **their desks, hands and themselves** are clearly captured.
- Once everything is ready, teacher may release the exam paper on Blackboard or via email for students to download. Be reminded to check if all students can access the file before starting the exam.
- When time is up, give reasonable time for students to take a clear photo of what they have written, and ask them to convert the photos into one PDF file, and submit it onto Blackboard or other platforms of your choice.

1.4.2 Disadvantages/ pitfalls

- See Section 1.3.2.
- *Burdens on students:* To supplement Section 1.3.2, students are required to download and install one more application in their phone to convert their answers into PDF files.

1.4.3 Tips (also refer to Section 1.3.2)

- Recommend a tool for students to do the file conversion. For example, applications like CamScanner or AdobeScan which can convert photos into pdf files.
- Remind students to write the question numbers and their answers clearly.
- Remind students to double check the converted pdf file to ensure that no page is missing, and that everything is clearly legible.

2. Non-invigilated examination

Non-invigilated exam is similar to an assignment but is often given a shorter time to finish. Students can do it at home with access to notes, internet and other resources that might be useful. Comparing with the aforementioned synchronous assessment, it is logistically the easiest to implement.

2.1 How to implement

- Release exam questions at a pre-announced time on Blackboard or via email
- Ask students to submit their answers onto Blackboard or other platforms of your choice within a specific period.

2.2 Tips

- Prepare questions of which answers cannot be copied straight from the web or book. Design questions that require students to locate, apply and analyze what they learned.
- Make it clear to students that it is an exam and the answers attempted should be their own work without help from others.
- Consider requiring students to sign an Academic Honor Code, a statement addressing issues like cheating and plagiarism in which participants pledge to adhere to, or a self-declaration form like [this](#) to deter students from cheating.
- Avoid giving a very broad deadline for the exam like assignment e.g. weeks or months. Take-home exam is supposed to test student's ability in constructing arguments referencing information available within a limited time.

3. Other Forms of Assessment

Depending on your discipline and course learning objectives, you may consider adopting alternative forms of online assessment. Some alternative assessment methods worth considering are:

3.1 Online presentation

Online presentation is a flexible way to assess students' learning as well as communication skills. It can be done in either synchronous (e.g., via Zoom with [screen sharing function](#)) or asynchronous mode (e.g., via pre-recorded video or [narrated PowerPoint](#)). Teachers can provide immediate feedback and interactions in the synchronous mode. Oral presentations can be done individually or in groups.

3.2 Project

Project is a comprehensive way to assess students' subject knowledge and skills. Students can apply what they learned within a context specified in the project. When conducted in a group, projects can help students develop teamwork and leadership skills. The format, scale, and requirement of a project are flexible depending on the course's discipline and learning objectives. The [assignment](#) function at Blackboard can help you create and collect project submissions.

3.3 Published media

Teachers may ask students to publish their work as a webpage or other appropriate media as a form of assessment. Creating a published media contributes to the development of students' multimedia skills and helps to promote knowledge exchange with the community. Many online services such as [Wordpress](#) and [Blogger](#) allow users to create websites easily for free.

3.4 Peer assessment

Some elements of peer assessment can be incorporated to the assessment methods mentioned above. It helps students improve their work by exchanging feedback from each other. Blackboard has a built-in [Self and Peer Assessment](#) function to ensure students receive feedback from several classmates within a specified timeline.

More suggestions for non-invigilated, take-home exam are available at the “[Suggestions for Non-Invigilated Examination](#)” document by CLEAR.

*The document is prepared by Centre for Learning Enhancement And Research, CUHK. Discussions on this version of the document are confined to technology available to CUHK teachers as of February 2022. For any technical questions regarding Zoom, Blackboard, Respondus software, please contact elarning@cuhk.edu.hk. For other questions that involve uReply and assessment strategies, please contact us at clear@cuhk.edu.hk.