**How to create interactions with students during synchronous lessons**

It seems like it was only yesterday that we gathered in classes, sat together in the same rooms, and shared a table at coffee breaks; however, we were suddenly thrust into the world of remote, synchronous learning. Following a readjustment period, various experts began plotting out ways to make learning effective during these trying times.

There is no doubt that remote learning should include both synchronous and asynchronous events. Synchronous teaching will be addressed, with suggestions regarding ZOOM™ videoconferencing software; however, remote learning can also be implemented on other platforms such as Moodle virtual classroom, Google Classroom™ and others.

It is best that all synchronous activities should not be long; every session should last 30-40 minutes at the most. If it is any longer, students will lose attention and focus. Every 5-6 minutes there should be a break in content, to allow for interaction with the students and to create engagement with them.

A few suggestions for interactive activities with the students follow (Prepared by: Dr. Dvora Katchevich):

1. Ask the students to refer to an image – include an image in your presentation (e.g., a drawing, graph, model, and caricature) and ask one of the students to explain, give the context, or interpret the figure. One can also utilize the Annotate tool, to allow students to draw on the image to emphasize their oral notes and/or collaborate with other students in a visual discussion.
2. Ask students to read aloud – if the presentation has text, for a summary or explanation; the students to read it in their own voice can open a path for their personal interpretation to follow.
3. Prepare questions for the presentation in advance, and allow some time for the students to answer them. A student could present an answer by showing the written text to the camera, or by sharing it on an online board (such as Padlet or any other online platform available in your LMS (Learning management system)). You can also utilize the Whiteboard function in ZOOM, though it is a bit less user-friendly in that aspect. One other option is to incorporate a shared presentation through Google Slides™ so that all students could instantaneously share their answers and notes. It is recommended that the teacher include the complete answers in the succeeding slides, so that the students will also have a reference to which to compare their notes.
4. Ask open, debatable questions, to which the students can answer using the Polling feature incorporated in ZOOM (this requires preparing those questions in advance, and enabling that feature in the ZOOM account before the session begins).
A discussion can be initiated, by raising hands (both physically in front of the camera, or by using the Reactions feature in the ZOOM interface) or by an external tool (such as Padlet, Mentimeter, KahootTM, and others). The conclusion of the discussion could be led by other students, who did not participate in it.
If new, unexpected questions are raised, it is best not to ignore them, but instead, open a blank slide and enable all the students to see and debate them using any of the aforementioned tools.
5. Ask a Yes/No or Right/Wrong question, to which the students will answer using the Yes/No reactions in ZOOM (in the Participants’ menu), or by using a polling tool such as Mentimeter or Kahoot. The teacher will receive immediate feedback to display the responses for the class and for discussion.
6. Survey your students by using a Google Form, through which both open-ended and multiple-choice questions could be addressed; the answers could be collected and presented anonymously if needed.
In a follow-up for a synchronous session the students can combine questions that arose during the session, and create a Google Form of their own, to be discussed in the next session.
7. Encourage the students to ask questions in the Chat, throughout the synchronous session and especially during lectures –to not miss or omit anyone from the discussion. The teacher might even want to appoint a Chat representative from among the students, to be in charge of noting important questions or taking notes from the chat during the session – and use those questions to trace points of misunderstanding throughout the lesson. Maybe the teacher was misheard or misunderstood, or there was a glitch in the internet connection or a skipped slide or there is a need to initiate and drive a discussion.
Note that if you record your sessions, the chat will also be recorded and it can be downloaded as a separate text file.
8. If there is a large number of participants, and if possible (if a TA or another teacher is available), it is recommended to appoint a co-host to deal with technical issues, answer mundane questions in the chat, and monitor the flow of conversation so that the session will proceed uninterrupted as much as possible.
9. Send the links to the session in advance, through multiple outlets with at least one that is fixed (meaning, not an IM platform) like a school or subject website. Include all the relevant tools you intend to use (such as Mentimeter, Padlet, and Google Forms) and write a few words on how to access them during the session, to save time, prevent confusion, so that the students can be ready in advance.
10. Divide the class by using the Breakout Rooms feature on ZOOM (it must be enabled in advance through the account's preferences). It is very important that before the class is divided into rooms, specific instructions be given (preferably, also writing). Once the allocated time is over, all the students should return to the main rooms, and a closing discussion of the subject at hand should be conducted.
Working in breakrooms is good for small group discussions, collaborative creation, workshop sessions, and more – such interactions are difficult to conduct in larger groups.

In the following table, we present a list of suggested tools for such activities and sessions, each with its properties and pedagogical aspects. It is recommended to combine several tools in each session, to allow the students to engage in the lesson in different ways, to create interest, and maintain a continuous drive:

**Technological tools and applications for remote online teaching** (Prepared by: Ron Blonder and Ehud Aviran).

| **Tool** | **Link** | **Tool function** | **Pedagogical aspects (why they are used, when and how to integrate them into the teaching)** | **Comments** |
| --- | --- | --- | --- | --- |
| Padlet | <https://padlet.com/dashboard> | Padlet is an application for creating an online bulletin board that can be used to display information on any topic. | To interactively share ideas and learning products between learners  | It requires registration; a free account can only create up to 3 padlets at any given time. |
| Metimeter | <https://www.mentimeter.com/> | For conducting an online survey  | To make the students active learnersFor evaluating students’ understanding during the lesson | It has different kinds of options for questions, and different presentations of the answers. |
| Kahoot:  | <https://kahoot.com/> | For quizzes and students’ competitions | To make the students active learnersIt provides an opportunity to release tension while having a quiz combined with a competition |  |
| Zoom | <https://zoom.us/> | A videoconferencing app that enables teachers and students to interact in a shared virtual space. It includes screen sharing capabilities (which can be limited to a specific window or the entire desktop), as well as a secondary input source, and a whiteboard for doodling and drawing. The software has a built-in capability to record on-screen happenings (with audio). | In a flipped classroom pedagogy, this tool can be used to manage the synchronous aspects of the lessons – answer questions, solve problems, and attend to students’ needs. It can also be used in the form of "office hours", where the teacher is available to answer students’ questions in a specific timeframe during the week, to add the video for a more personal, accessible approach.Some teachers utilize it as a "frontal teaching" tool, just as in a regular classroom – but only online. I think this is wrong and inadequate for remote teaching pedagogy. | It requires registration; a free license grants a 40-minute period for any meeting that includes more than 2 people. |
| Google Meet / Hangout | <https://meet.google.com/> | Similar to Zoom, minus the recording capability and the whiteboard. | Similar to Zoom | It requires a G suite account (a corporate google account) to initiate meetings that are not time restricted. |
| WhatsApp | Designated for smartphones; there is an applet that connects it to the computer: <https://web.whatsapp.com/> | A messaging app, meant for use on smartphones. It can deliver text, voice recordings, photos, and files (without the ability to open or process them) as well as other information. Videoconferencing is up to 4 users. A main feature is the ability to monitor whether the message was sent, received, and read. | This is more of a supporting tool, though some teachers utilize it as a legitimate way to stay in touch with their students at all times.It can be implemented in a "Flipped Classroom" approach, where the teacher sends out learning materials and requests the students to send photos/recordings/files of their products.It can be implemented in an activity that requires navigating with its "send location" feature – thus combining real-world activities with learned material and human interactions.  | It requires web connectivity for the phone (even if operated from the computer); a limited variety of files (and file sizes) are supported for transfer. |
| Telegram | <https://telegram.org/> | Similar to WhatsApp, but it focuses more on interactions with group chats. | Similar to WhatsApp | It can be operated from the computer, regardless of phone web access |
| MolView | <http://molview.org/> | A molecular modeling tool, which can simulate in 3D most 2D structures drawn in it. | A good tool for visualization; it can be implemented into synchronous lessons or asynchronous tasks, and can be operated by the students freely or with specific molecules in mind. |  |
| YouTube | <https://www.youtube.com/> | A video library and search engine; this platform holds an incredible number of videos on almost any subject. Video recordings of previous lessons can be edited and uploaded here, to be viewed by the students at any time, as many times as they want. Also, there is the ability to live steam a lesson (which will be available to watch later, as well). | Granting students the ability to control the lesson, watch it from any place, and on any device; having the teacher repeat any lesson for as many times as needed, without having peer pressure to continue; the existing recordings could be enhanced by visual elements, making it more interesting for the viewer.This kind of teaching transfers some of the responsibility to the student. | A new creator will have limited capabilities, which will expand as more videos will be uploaded and more people will watch the video.It is important to follow the YouTube instructions and restrictions, because some have monetary implications. |
| QuestionPro | <https://www.questionpro.com/> | Create interactive, visual, and engaging surveys that incorporate visual, sound, video, and other media to make answering questions more engaging. The data collected can be presented in many ways, from graphs to charts and for other visuals. | Incorporate with other answer collection methods, to distinguish between different aspects of the lesson or to make students more engaged.Note that this tool cannot be integrated into another LMS; therefore, it must be used externally (by using a link). | An account must be created in advance. Since this tool is more elaborate than others, it requires some time to learn. |