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ONLINE LEARNING MODES: SYNCHRONOUS AND ASYNCHRONOUS

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ABSTRACT

The implementation of online learning in the Malaysian higher education landscape has become vital since the outbreak of the COVID-19 pandemic beginning from March 2020 in Malaysia. In line with the Standard Operating Procedure (SOP) set by the government in all sectors including education and maintaining social distancing to prevent the spread of COVID-19, higher education institutions in Malaysia has converted the traditional face-to-face education system to online learning modes which consist of synchronous and asynchronous mode. This article looks into the definition of synchronous and asynchronous e-learning modes, the technologies used and key issues for each mode, the best practices as well as strengths and also weaknesses of synchronous and asynchronous online learning gathered from previous studies. The aim of this article is for the educators to comprehend more clearly about these two modes of online learning and selecting preferable teaching methods, online tools as well as digital educational resources in improving the quality of the educational process. By blending synchronous and asynchronous modes, educators can create an effective online distance learning experience that are favorable by instructors, but most importantly, ideal to the learners.

Keywords: online learning, synchronous, asynchronous

Introduction

In maintaining social distancing, the Covid-19 pandemic has caused the global closure of several activities, including education, and has transformed the traditional face-to-face education system to an online version via two online learning modes: synchronous and asynchronous settings. Not all educational institutions are prepared to face this transformation, which presented educators and students facing a variety of unexpected new teaching and learning obstacles.

In traditional classroom learning mode, the instructor is the focus and the learning process is implemented face to face, but in online learning modes, the educator still acts as an instructor, but both the educator and the students depend on different online sources and there is more collaboration involves between both parties as mentioned by Amiti (2020). There are three online learning modes namely synchronous, asynchronous and hybrid online learning. According to the study by Hadullo et. al. (2018), synchronous learning provides real-time interaction by combining features such as video conferencing and group chat with the simultaneous presence of instructors and students. Asynchronous settings, in contrast, are not time or space restricted, meaning that learning can take place in multiple places at different times, with students using resources like discussion boards, blogs and e-mail at their own

leisure as stated by Hadullo et. al. (2018). Alternatively, a hybrid online environment combines synchronous sessions and asynchronous activities as a method of learning delivery.

Synchronous Online Learning

A synchronous learning environment is a learning mode where the instructors and the students meet online using specific online platforms to deliver lessons. A synchronous learning can consist of various forms of interaction between instructors and students. Instructors can deliver lessons using videoconferencing with a camera, where instructors and students are present simultaneously on the selected online platform. Through this mode, the instructors have the ability to assess the reaction of students, understand their needs, respond to their questions and choose a pace that is convenient for the group as well as monitor the student's involvement in the process as stated by Berestok (2021). Table 1 explains about the synchronous e-Learning technologies and their key issues.

Table 1: Synchronous e-Learning Technology and Key Issues (Adapted: Dada, 2019, p.56)

Technology	**Key Issues**
Video Conferencing	• Allows real-time interaction among students just as in the traditional classroom environment. • Costly and successful implementation depends on the availability of bandwidth.
Web Conferencing	• Allows sharing of documents, PowerPoint presentations and demonstration of application programs. • Costly and successful implementation depends on the availability of bandwidth.
White Boarding	• Demonstration and co-development of ideas. • Costly, its implementation depends on the availability of bandwidth. It is sometimes better used with audio conferencing.
Audio Conferencing	• Allows students to engage in collaborative discussion. • It is likely to be costly when it involves international participants.
Chat	• Allows the sharing of textual and graphical information that is not too complex. • Communication rate is slowed down since it is majorly text-based.
Instant Messaging	• Allows messages to be delivered promptly. • The use of devices such as headset is required. It also allows one to one or one to many interactions.

A study by Amiti (2020) added, a synchronous class should be student-centered environment, with the educator providing instructions first, then giving the students complete attention and students respond based on the activities. Table 2 discusses the benefits and drawbacks of the synchronous online learning mode attained from prior researches.

Table 2: Benefits and Drawbacks of Synchronous Online Learning Mode

Author	Benefits	Drawbacks
Amiti (2020)	• Offers real-time learning and knowledge sharing platform with direct access to the instructor for question and answer session to avoid miscommunication. • Live lessons can be recorded and saved automatically on the Learning Management System (LMS) or any collaborative learning platform chosen by the instructor. Students can view and replay instructor's lectures as many times as they need to comprehend the content at their own pace and time. • Synchronous learning brings students together regardless of their physical location. As a result, introvert learners that are struggling in regular classrooms; feel more comfortable and less worried as they attended online lessons from their home environment.	• Synchronous learning requires a prearranged meeting date and time. • For learners' lacking in auditory skills, the instructor may need to talk more slowly during the video conferencing lecture session. Yet for the more advanced students, they may not feel happy with the following situation. Therefore, the slower learners may require some extra assistance outside of the online class sessions.
Perveen (2016)	• Through collaborative learning, synchronous mode fosters a sense of community. Instructors and students can connect and collaborate in real time in a synchronous virtual classroom. It mimics a traditional classroom setting, with web camera and class discussion elements, except that all participants view it remotely over the Internet. Due to the presence of the instructor and classmates, synchronous sessions might result in high levels of motivation to stay engaged in e-activities. Facial expressions and voice tones can help them have a more human feel across a broader spectrum, resulting in low-cost global communication.	• The requirement for a high-bandwidth Internet connection. Due to technical difficulties, students may feel disappointed and less motivated.
Beresto (2021)	• Educators frequently offer online lessons using webinars and video conferencing. Among the advantages of using these features are the flexibility to have remote lessons, recorded lectures, have an unlimited number of students, and the use of supplementary instructional resources. Presentation, demonstration, video viewing, group discussion with students having microphones, and online boards or whiteboards can be used through video conferencing feature. It is also a one-stop platform for all learners' comments, photos, text chat (both shared and private messages) and can be remotely accessed. It also allows us to display the speaker's screen.	• The availability of students and educator at the scheduled time as well as the dependence on unanticipated technical events.

In a study by Moser and Smith (2015), they suggested best practices in implementing synchronous online courses. Table 3 displays all of the 12 steps that should be taken from the beginning until the finish of a lesson revised from Moser and Smith (2015) article from page 46 to 48. They added that for students to have a better online learning experience, educators must establish a guideline and a curriculum for their classes, as well as integrate software to incorporate all of the abilities.

Table 3: Best Practices for Implementing Synchronous Online Courses

Step	Action
1	Provide a welcome message that is displayed approximately 15 minutes before class.
2	Notify class of your presence and encourage equipment checks.
3	Provide easily accessed methods to connect/enter the virtual classroom
4	Record class meetings.
5	Discourage unnecessary use of video sharing.
6	Maintain virtual office hours.
7	Pre-load software that will be used during class presentation.
8	If possible have more than one monitor/display
9	Equip your teaching/production facility with various video options.
10	Use electronic Textbooks and other reference materials.
11	Encourage (require?) students to participate in virtual study sessions/group meetings.
12	Integrate additional software systems to augment the virtual classroom experience.

Berestok (2021) discussed that the similarities and differences between synchronous learning and traditional classroom learning. Obviously, both teaching formats bring students and instructors together at the same time and in the same place. In addition, the teaching staff will use various teaching aids to deliver teaching materials. On the contrary, both the classroom and synchronous formats require various collaboration tools: the synchronous format emphasizes mobile learning tools such as mobile applications and online chats. Other than that, with synchronous teaching, the teacher usually does not have the opportunity to evaluate whether the pupils are paying attention, therefore the learning's success is heavily dependent on the students' awareness.

Asynchronous Online Learning

Asynchronous learning is self-paced and allows educators as well as learners to deliver ideas or

exchange information without relying on other participants' simultaneous involvement. Perveen (2016) described that students in asynchronous environments have access to information such as audio and video lectures, lectures note and handouts, articles, assignment questions and power point presentations through a Learning Management System (LMS) or other similar channels at any time and from any place. These online learning platforms either using the education institution developed LMS or online collaborative platform such as Microsoft Teams and Google Classrooms houses course content and provides a framework for communication between students and educators.

Materials, lectures, quizzes, and assignments are provided by instructors and can be accessed at any time. Students may be assigned a timeline to connect at least once or twice in a week and they work in their own pace in asynchronous learning. Ogbonna (2019) said that, if they need to re-listen to a lecture repeatedly or reflect over a subject for a while, they can do so without causing the rest of the class to fall behind. Table 4 describes on the asynchronous e-Learning technologies and their key issues.

According to Amiti (2020), when the instructor does not need an immediate reply, students engage in more critical thought, and the more they think about a topic, the more they develop thoughtful answer rather than responding spontaneously. Instead, when there is a space between the teacher and the student, shyness is lessened, and nervousness is moderated, thus there is less pressure. Students, on the other hand, appreciate the freedom and work-at-your-own-pace nature of asynchronous classrooms.

Individual participant interactions in asynchronous courses are incapable of imparting a feeling of shared social presence or involvement in online education, as stated by Friska (2021). Participants in asynchronous online learning are looking for content provided by their instructor or trying to engage themselves in relevant learning tasks. This may be due to many learners who have taken asynchronous online courses are totally unfamiliar with the experience of learning how to comprehend and become active learners. The majority of students will need to change their roles as online learners and their perceptions of educators.