

## AN EXPLORING METHODS IN ONLINE LEARNING: SYNCHRONOUS AND ASYNCHRONOUS

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### ABSTRACT

Online learning is becoming increasingly important for several reasons. Especially during the pandemic, since pandemic COVID-19, the teaching and learning process has changed from the traditional face-to-face classroom into online distance learning. Online education is a definite trend that will continue to grow in the years ahead. Online teaching and learning methods can be divided into two groups: synchronous and asynchronous learning. In this case, we will explain the differences and provide some advantages and disadvantages of synchronous and asynchronous learning. Synchronous learning is a learning-oriented interaction that is facilitated by direct, real-time instructions and usually scheduling. Synchronous online learning is commonly facilitated by media such as video conferencing, telecom, live chat, and live streaming. Asynchronous learning means that the learning activity isn't done directly between teachers and learners. The materials have been prepared by the teachers to be accessible to the students. Asynchronous online learning methods involve independent curriculum, streaming video, virtual libraries, and college posts. Synchronous and asynchronous learning use electronic devices, particularly computers and the Internet.

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## 1. INTRODUCTION

As we know, the world is busy with the COVID-19 pandemic. This pandemic has become a global public health disaster since the beginning of 2020 (Saadat et al., 2020; Limcaoco et al., 2020). It not only has an impact on public health problems but also in various fields. As a result of this situation, education is one of the critical areas that must undergo significant changes in the system. The government has issued a decree that there is no learning in the classroom as long as this pandemic is not over. Social distancing is carried out. Social distancing is one way that can be applied to reduce the spread of the virus. One of the social distancing efforts is distance learning (De Vos, 2020; Adiyoso, 2021; Huynh, 2020). It is highly recommended to be applied at every level of education.

Basically, the term "distance learning" refers to online learning or e-learning. With the implementation of e-learning, students can still learn and access materials at any time and anywhere. There are many tools to choose from for both online teaching and online learning, such as e-mail, WhatsApp, Instagram, Google classroom, Google meet, Zoom meeting, Microsoft team, YouTube, and others (Ying et al., 2021; Moorhouse & Wong,

2021). Lecturers can submit material in various formats, such as videos. In this case, both lecturers and students are encouraged to be more active in utilizing technology (Oviawe, 2020; Wang, 2020; Choi et al., 2021).

Several of the advantages of e-learning are that it is flexible, more accessible, motivates students to interact with others, and is cost-effective because students do not need to travel. In addition, internet access plays an important role in this learning model. The better the signal network, the better communication between lecturers and students can be established.

This kind of e-learning can be classified as synchronous or asynchronous. The most common form of synchronous communication is face-to-face discourse. However, when distance is being considered, synchronous communication is still possible with the intervention of technology or other means (Den Otter & Emmitt, 2007). On the other hand, asynchronous communication does not occur in real-time. Those who engage in this type of communication can read and respond at any time (Lim, 2017).

Although both are online systems, synchronous and asynchronous have differences. The roots of synchronous e-learning come from three main influences, such as classrooms, the media, and conferences. This type is live and real-time. Asynchronous e-learning, on the other hand, introduces it as an interactive learning community that is not constrained by time, place, or classroom boundaries (Shahabadi & Uplane, 2015). Because of these differences, we finally conducted in-depth research between synchronous and asynchronous learning to determine which of the two methods is the most suitable and can be applied in Indonesia by analyzing related documents and other supporting literature.

## 2. METHOD

Our systematic approach to conducting this literature review includes database searches as well as manual searches of peer-reviewed scientific journals (Gaur & Kumar, 2018). The first is the understanding of the definition between synchronous and asynchronous.

Secondly, we also conduct the implementation of the synchronous method and the asynchronous method. All relevant documents are accessed through articles and online news.

Next, the approach implemented is suitable for Indonesian culture. And last, about the outcome of those methods. In order to get an explanation regarding those, we also analyzed the related documents.

## 3. DISCUSSION

### 3.1. Synchronous and Asynchronous Learning

Online learning systems require both educators and learners to better master skills in communication technology through the Internet (Chou, 2003). With the online learning system that many learners and educators feel is a new system, much has to be learned and understood about how applying the new system can be done well.

In online learning systems, there are two types of implementation: synchronous and asynchronous learning. Synchronous Learning is the type of learning that teachers and students do live (in real-time) through the Internet network of teacher-friendly people (Ahmed & Opoku, 2021). Teachers and students alike can direct two-way discussions and directly provide feedback using a platform such as Zoom, Google Classroom, or Google Meet.

Asynchronous learning means the learning activity isn't done directly between teachers and learners; learning management, which is not necessarily online, is done with the LMS (learning management system), where the materials have been prepared by the teachers to be accessible to the students (Ko & Rossen, 2017). For example, teachers give learning materials using the application, and then students read the material and understand the material independently.

The difference between the learning processes between synchronous and asynchronous learning (Hrastinski, 2008; Shahabadi & Uplane, 2015).

### **Synchronous**

Synchronous learning is long-range education (online education) that happens in real-time using Zoom or Google Meet. With synchronous learning, students can receive feedback directly from fellow students or teachers. For example, teachers may greet the condition of learners, provide insights into the material to be discussed, ask questions, and present the benefit or purpose of learning materials, and together with the students, conclude the learning activity at the same time (Shahabadi & Uplane, 2015).

### **Asynchronous**

Asynchronous learning occurs through community forums or online platforms without real-time interactions. But asynchronous learning does not allow the kinds of interactions that learners need to receive feedback directly from their fellow students or teachers. Asynchronous online learning is commonly supported by discussion boards, email, lesson plans, virtual libraries, and college posts (Hrastinski, 2008).

Online learning should be a mix of synchronous and asynchronous learning. If online learning is accomplished only by one kind, there must be some things that cannot be done to the fullest. Synchronous Learning can be done, for example, when teachers provide new basic competence, their performance techniques, some things to learn or the learning assignments that learners have to do, deduce the learning results, and so on so that learners better understand what to do in the learning activity and more fully understand the materials involved. Asynchronous learning can be applied to learners' reading and understanding material independently as well as caring for assigned tasks.

Online learning activities that combine the two kinds are also substitutes for face-to-face learning. Through the synchronous and asynchronous processes, the learners feel the learning is almost like a face-to-face learning activity but is done online, so the learner still feels guided and monitored by the teacher (Hrastinski, 2008; Shahabadi & Uplane, 2015).

## **3.2. The Implementation of Synchronous And Asynchronous**

The study from home or online learning program is a policy issued by the minister of education and culture during the pandemic of COVID-19 (Yuliejantiningih, 2020). Many kinds of online learning can be created with the advanced development and suite of modern workplace learners. There are several kinds of online learning solutions that can be used to instruct the learners. Select the kind that best suits the needs of the learner, keeping in mind the available technologies that would help them access online learning methods. Most of the online learning methods are synchronous and asynchronous. It depends on the learner's needs and the learning objectives you choose.

### **Synchronous Learning**

Synchronous events take place in real time. Synchronous communication between two people requires them to both be present at a given time. Examples of synchronous learning are live chat, live streaming, application sharing, and virtual classrooms ([Chen et al., 2005](#)).

### **Asynchronous Learning**

Asynchronous learning is time-independent. Asynchronous learning takes place at any time, not in real time ([Riwayatiningsih & Sulistyani, 2020](#)). An example of asynchronous learning is a self-paced course. In asynchronous learning, students commonly complete the assignment at their own pace by using online learning platforms such as: email, Google classroom, etc. Most instructional designers now choose learning methods based on the asynchronous mode of learning.

There are several online learning methods based on which you can choose:

#### ***Web-Based Training (WBT)***

WTB normally refers to some form of training that is delivered via an online circle ([Khan, 2001](#)). WBT content can be presented in several formats. such as PDFs, videos, slideshows, etc. " Web-based training is often referred to as virtual training or distance learning and utilizes cloud-based computing tools for access, administration, delivery, and analytics. This method is great for adult learners who are more motivated to learn, to learn new skills, update their resumes, and attain professional excellence.

#### ***Computer-Based Training (CBT)***

CBT is alike WBT, CBT involves the use of a personal or networked computer for the delivery and access of training programs", CBT was primarily used in relation to learning via formats like CD-ROMs and floppy disks.

#### ***Blended Learning***

This method combines both synchronous and asynchronous learning. A blended learning approach in the classroom is utilized to conduct exercises and interactions. The exercises cannot be conducted as peer interaction because space is limited ([Norberg et al., 2011](#)).

#### ***Mobile Learning***

Mobile learning is one of the methods used in the process of education and training, using mobile media such as PDAs, Smartphones and mobile phones ([Ozuorcun & Tabak, 2012](#)). This mobile learning can be used as a learning tool that contains learning materials such as summary materials, questions, and other features that make it more interesting. Learning media applications using smartphones are proven to be feasible, practical, and efficient for use in learning.

#### ***Game-based learning***

Games-based learning is learning that is facilitated by the use of a game. Game-based learning (GBL) is a kind of game-play that defines learning outcomes ([Boghian et al., 2019](#)). Normally, game-based learning is designed to balance subject matter with game-play and the ability of the player to retain and apply said subject matter to the real world.

Choosing the best online learning methods is heavily reliant on a thorough needs analysis. all of the benefits of choosing the right online learning method for your needs. It can not only make the development process more organized and productive, but it will also provide a better online learning experience for the learner.

### **3.3. The Approach Implemented Suitable On Indonesian Culture**

Indeed, Indonesia has implemented the Synchronous and Asynchronous Learning (ASL) methods in online learning ([Simamora, 2020](#)). In general, synchronous learning is a learning activity carried out by teachers and students at the same time, thus enabling direct learning centered on the teacher. Synchronous learning is also a learning process that causes direct interaction between students and instructors through an online learning community within a predetermined time.

While asynchronous learning occurs when teaching materials that have been distributed by the teacher can be accessed by students whenever and wherever they are, asynchronous learning is also a learning process that takes place indirectly between students and teachers. Learning resources, where students can carry out learning activities whenever and wherever they want without having to wait.

Synchronous learning is direct online learning using a teleconferencing application by providing translators in the form of interpreters (direct sign language translators) and notakers (language translators with fast writing) ([Seresi, 2021](#)).

Next is asynchronous learning (ASL), which is an online learning process that provides teaching materials and indirect assignments. Teaching materials and assignments can be in the form of videos with sign language and their translations or other forms ([Stojan et al., 2021](#)).

And we have proven that the asynchronous system is more effective in Indonesia than the synchronous method. Learning through learning media applications using the asynchronous method has the advantage of stand-alone content. Learning materials are available 24 hours and only require the necessary materials. While learning through learning media applications using the synchronous method has several obstacles, namely the existing content requires a clear instructor, the instructor is available when students also have available time, and a lack of student learning motivation, the advantage is that the instructor can change the content in real time.

### **3.4. Outcome of Synchronous and Asynchronous**

The students rated the asynchronous format higher than the synchronous formats ([Kunin et al., 2014](#); [Roblyer et al., 2007](#)). And there are some possible explanations for these differences. First, the populations of the studies were very different. Examples: high school students, undergraduate students, and graduate students. The second most common criticism leveled at the synchronous format. That is, technology problems during class cause audio delays and disabilities for asking questions during class. The third failure is a failure to change course based on format. Course content and tasks were identical for both formats. And the last study only included data collected on student perceptions of the different course formats, not actual academic achievement data.

#### 4. CONCLUSION

At this time, the media is the main focus of e-learning, which can then change direction and provide a new style in the world of education. In particular, online education. One of the efforts that can be made in the current shift in the direction of education is by utilizing the available media, such as by utilizing several emerging media, for example, blogs, Wikis, and websites. By using this utilization, they will be able to control the educational setting.

Applying learning methods (synchronous and asynchronous) will be an alternative way of utilizing the available media that will be done when teaching or teaching and learning. Learning the benefits and limitations of emerging types of learning (asynchronous and synchronous) can facilitate understanding of the use of emerging media in a beneficial way in the teaching and learning process or the learning process that will be implemented.

The combination of methods (synchronous and asynchronous) makes it easier for students to carry out the virtual teaching and learning process, especially for students of English education. Some Indonesian students give the perception that learning using asynchronous methods is easier to understand and can help students understand and develop a deeper understanding of the material presented.

Both methods (asynchronous and synchronous) can work well. Because they cover all learning techniques that refer to the use of available technology, Mature learning design is a step that must be prepared in advance in order to apply this method (synchronous and asynchronous).

According to the researcher, learning using synchronous methods will be faster than asynchronous, but online learning methods with asynchronous will offer more flexibility. So that students can more easily manage their schedules, so that learning will be easier and will be more comfortable by using these asynchronous methods. In more detail, asynchronous is almost similar to work.

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