Systematic Literature Review of Limitation of Video Conference

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|  | Ian Jeremiah Cahyadi  Computer Science Program  School of Computer Science  Bina Nusantara University  Tangerang, 15143, ID  [ian.cahyadi@binus.ac.id](mailto:ian.cahyadi@binus.ac.id) | Bryan Theophilllus  Computer Science Program  School of Computer Science  Bina Nusantara University  Tangerang, 15143, ID  [Bryan.theophillu@binus.ac.id](mailto:Bryan.theophillu@binus.ac.id) |
| Jason Oei  Computer Science Program  School of Computer Science  Bina Nusantara University  Tangerang, 15143, ID  [jason.oei@binus.ac.id](mailto:jason.oei@binus.ac.id) | Ivan Sebastian Edbert  Computer Science Department  School of Computer Science  Bina Nusantara University  Jakarta, 11480, Indonesia  [ivan.edbert@binus.ac.id](mailto:ivan.edbert@binus.ac.id) | Alvina Aulia  Computer Science Program  School of Computer Science  Bina Nusantara University  Tangerang, 15143, Indonesia [aaulia@binus.edu](mailto:aaulia@binus.edu) |

***Abstract -*** *Due to the Covid-19 pandemic that has hit the world, which resulted in limited human activities. Video conferencing is one solution for carrying out activities. Video conferencing help people to reduce the spread of this pandemic and connect one person far away with another person without having to meet. With Video conferencing people can meet each other without being limited by time and space. However, video conferencing still has various shortcomings, such as the inability to interact. Because we only see-through video, the lack of technology due to video conferencing requires us to use technology such as computers or cellphones that a stable and fast internet network must support to ensure smooth use of video conferencing. In this paper, the researcher will study the literature to determine the limitation of using video conferencing. The researcher will learn the concept of Video Conferencing so that the researcher can determine the limitation that occur using Video Conference. The result shows that there are various reasons for the limitation of video conference. Some of these reasons are experienced by lecturers, students or the lack of infrastructure provided. Students hard to enhance their level of their study because lack of technology support that support using only the video conference. Limited social interaction also causes students to learn well.*

***Keywords****: video conference, online learning, distance learning, interactive video conferencing, digital learning*

**I. INTRODUCTION**

A pandemic hit the world on December 31, 2019. And until now, the spread of cases has reached 486, 761 597 issues globally [1]. Although the COVID-19 pandemic hit the world around two years ago, it still affects everyone's activities until today with the endless variants that have been detected. As a result, many restrictions and health precautions must be applied when accessing public places to prevent the virus from spreading further. Unfortunately, those restrictions and precautions greatly affected offline learning, as most students must study from home to avoid spreading the virus further.

A handful of video conference services have started to surface to facilitate students who have to learn from home, such as Zoom, Microsoft Teams, Google Meet, etc. Although these video conference services seem beneficial at first glance, some students might find some difficulties and issues regarding online learning through video conference services. The standard requirements for video conferencing includes a few equipment such as camera, sound, lighting and background, other requirements include signal transmission, video codec and audio codec [2]. Considering some of the requirements needed to do a video conference, some students or even teachers might not have access to the aforementioned required equipment. The limitations of video conference services when used as an online learning medium is discussed in this paper. This study aims to see the limits of video web conference technology and its effects on the education sector with the following information.

Several studies have shown video conferencing as an activity, especially in the learning sector. One is [3]. This study aims to determine the process and effectiveness of learning using video conferencing media in the Basic Chinese 2 course at Widya Kartika University. In this study, the researcher observed and distributed questionnaires to several students at Widya Kartika University who received Chinese language courses. This research shows that video conferencing in learning is very effective. However, although this method is very effective, it still has drawbacks, such as difficulty in teaching staff to attract students' attention. There is also limited time if you don't have a premium zoom [3].

Another example of research is [4]. This study explores students' experiences and feelings about implementing synchronous e-learning through the system. Zoom conference. This research was conducted by observing and distributing questionnaires to students at a university in Indonesia who took English lessons. So, this literature review aims to discover the limitations or weaknesses of zoom conferences in daily activities. It could be just contacting relatives or terms of learning.

**II. METHOD**

This literature review study aims to discover the limitations of using zoom video conferences. To achieve this goal, we collected various other literature studies through the use of keywords of video conferencing and analyzed the objectives and conclusions of the literature study. Thinking is an activity to decompose a whole into components so they can recognize the signs of parts, their relationship to each other, and their respective functions in an integrated whole [5]. After analyzing the data that has been diagnosed, the data will be collected and drawn to a conclusion.

Starting from looking for what a video conference itself is. A video conference is a data workstation that also acts as a video terminal connected to a network to provide interactive audio, video, animation, spreadsheets (worksheets), databases, telecommunications real-time, and other applications [6].

Video conferencing can be found in daily activities, such as online meetings or distance learning, using video conferencing as a substitute for face-to-face meetings. Video conferencing provides many conveniences, such as being in many places simultaneously. But video conferencing has drawbacks; for example, it is more difficult when you want to interact with people or access material in a lesson [4].

**B. Research Question**

The expected aim of using research questions is to keep the focus of this literature review.

Table 2.1 Table Expected Aim

|  |  |  |
| --- | --- | --- |
| ID | Research Question | Motivation |
| RQ1 | What are the limitations faced in online learning? | To identify limitations that occur in online learning. |
| RQ2 | Why do people not favor online learning? | To understand the view of the individual on the discomfort of online learning. |

**C. Result Finding**

This literature study searched for published papers or journals to answer the existing questions. For example, with the keywords "Video Conference," "Online Learning," "Distance Learning," "Interactive Video Conferencing," and "Digital Learning."

Table 2.2 Result Finding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Database Journal | Journal | Conference | Total |
| 1 | IEEE Xplore | 6 | 1402 | 1408 |
| 2. | ScienceDirect | 7363 | 127 | 7490 |
| 3 | SpringerLink | 22993 | 14377 | 37370 |
| 4 | Scopus | 0 | 0 | 0 |
| 5 | ACM Digital Library | - | - | 107386 |

**D. Inclusion and Exclusion Criteria**

Table 2.3 Inclusion and Exclusion Criteria

| Criteria | | |
| --- | --- | --- |
| Inclusion | I1 | Articles related to the drawbacks of online learning |
| I2 | Articles related to the system of online learning |
| I3 | Articles are written in English and Indonesian. |
| I4 | Articles published from 2018-to 2022 |
| I5 | Study literature reviews with similar topics |
| Exclusion | E1 | Articles not related to online learning |
| E2 | Articles published before 2018 |
| E3 | Articles with no source and references |

The above criteria filter papers that can be used as research material for this literature study. So that the documents used for this study all have a relationship with this review literature study.

**III. RESULT AND DISCUSSION**

Based on the literature review, there are a few main limitations when using Video Conference Services as a media of Online Learning for teachers and students, as shown in the table below. Lousy internet connections and the lack of social interactions are students' most common limitation facets of Online Learning. The lack of social interaction may cause some miscommunication between students and teachers. Miscommunication may lead to the wrong scheduling of classes and unfinished assignments. In addition, miscommunication could create a conflict between teachers and students.

Aside from that, limited social interaction may cause students to interact less with each other. Some studies show that online learning may cause students to have fewer friends than they usually would in a physical school learning environment. It may cause them to lose the ability to enjoy school life and catch up with particular objects, whereas some students cannot keep up with all the materials and homework. Combine that with the fact that some students may have limited capabilities in learning through the use of technology, and this may cause problems for some students who may find it hard to get a proper education through online learning.

Table 3.1 Research Result

|  |  |  |
| --- | --- | --- |
| NO | Limitation | Reference |
| 1 | Less able to interact | [4] [7] [8] [9] [10] [26] |
| 2 | Less able to use technology | [11] [22] [24] [25] |
| 3 | Less able to train students' abilities in learning | [12] [13] [14] [15] [20] [16] [23] |
| 4 | Lack of supporting technology | [17] [18] [19] [20] [21] [22] |
| 5 | Lack of focus by students | [21] |
| 6 | Security Issues (Identity Theft, DDOS, spam, etc.) | [23] [24] |

The table above represents the limitation found from several studies that discuss the advantages and disadvantages of Video Conference Service as a media of Online Learning. Limitations such as less able to interact, less able to use technology, less able to train students’ abilities in learning, lack of supporting technology, lack of focus by students and security issues can be found throughout the papers that discuss the advantages and disadvantages of Video Conference as a media of Online Learning.

**IV. CONCLUSION**

The COVID-19 pandemic makes restrictions on human activities meet each other. So, to avoid the spread of the pandemic. However, humans are starting to use video conferencing to carry out daily activities like learning or meeting for work purposes. Therefore, literature reviews are conducted from some papers that have been written. After reading and reviewing, the results provide some advantages, such as an 85% completion with positive results when learning using the audio-visual media [25], using Google Classroom as a solution to online learning during the pandemic [26], using video media to increase the learning outcome of physics lessons [27]. Research also shows the advantages of using Zoom to improve students' English speaking skills [28]. Another study also found that using video conferences as a tool of e-learning was perceived well in Italy [29]. Still, we found the disadvantage of using video conferences.

Starting from the drawbacks, we found that it is not easy to interact with each other through video conferencing because they can't meet in person. Then there is also the lack of ability to use technology, and this problem is experienced because video conferencing is a new technology [30]. The difference in socio-economic backgrounds of each student is also a factor to consider. Some students can't afford the technology required to do online learning, making it a disadvantage to use video conferences [31]. Most of the problems with limitations of video conferences is the lack of supporting technology to be able to further enhance the students’ abilities to learn at as high a level as learning face to face in an offline environment with lecturers. The anxieties caused by the inability to use modern technology may hinder each students’ ability to focus on the subject at hand. While not as important, security issues at video conferences may prevent students and lecturers from properly interacting with each other.

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