



## A Systematic Review Of The Benefits And Challenges Of Online Learning During The Covid-19 Pandemic

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### ABSTRACT

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Online learning is a learning option that is applied during the COVID-19 pandemic. Online learning has its benefits and challenges, especially during the COVID-19 pandemic, where almost all learning is done online. The purpose of this article is to map the benefits and challenges of online learning, especially those carried out during the COVID-19 pandemic. The research method used is a systematic literature review; there are 12 articles used as data sources after adjusting for inclusion and exclusion criteria. The study results show that many benefits were found for improving online learning in the future and various challenges that must be faced. One of the benefits that need attention is establishing a digital learning environment and using social media in learning. A fundamental challenge is the adaptation of learning technology. Future research is needed to build digital learning environments using social media.

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### 1. Introduction

Learning during the COVID-19 pandemic is special learning, which is usually done traditionally (face to face) has turned into online learning. Learning before the outbreak of the COVID-19 pandemic was usually done face-to-face, although learning that combines face-to-face learning with online learning has begun [1], [2]. The COVID-19 pandemic has changed all previous habits; during the COVID-19 pandemic, almost all learning is done online [3]. Online learning is a choice taken by education providers; this decision was taken to prevent the spread of the COVID-19 virus [4]. The use of useful technology to facilitate learning continues during the COVID-19 pandemic [5]. Online learning utilizes technology and electronic media to deliver, support, and improve learning and teaching and utilize online content in communicating [6]. Online learning is usually done in two ways, namely synchronous and asynchronous environments [7]. Online learning is usually done by utilizing applications, especially learning applications that can be used by using mobile phones. The use of applications can facilitate online learning [8]. Various online platforms such as Google classroom, WhatsApp, Zoom, Google Hangout, Skype, YouTube, Email, Microsoft PowerPoint, OBS software, etc., have been explored. Faculty members are asked to use the online platforms at their convenience [9]. This learning transition certainly has its challenges, these challenges must be immediately identified and solutions found. The challenges must be identified, but the benefits of online learning must also be identified to take advantage of the opportunities for developing online learning in the future.

All learning components feel the impact of this online learning transition, starting from teachers, students, parents, and educational institutions [10]. This online learning brings a formidable challenge because it is carried out suddenly and without good preparation [11]. Online learning also requires high additional costs to provide internet packages and supporting devices; of course, this is a serious problem, especially in remote areas where good internet access has not been reached. [12]. Government support is certainly highly expected in this condition, but at the same time, the government is also in need of much money to deal with the pandemic in the health sector [13]. In conditions in the field, education providers must continue to carry out education without the government's full support. It is feared that the challenges faced during the COVID-19 pandemic will adversely affect the online learning that is carried out [14]. So it



is necessary to identify these challenges fully. Online learning presents challenges and opportunities for the development of online learning. Online learning during the pre-covid-19 pandemic did not yet have a fixed standard, so it still required continuous improvement following technological developments. The development of online learning, which must be done to answer the challenges of learning during the COVID-19 pandemic, brings very good benefits to online learning. So that online learning will experience changes for the better with various developments needed.

Research related to online learning has previously been done. Kim pointed out the benefits of online learning are flexibility, more opportunities for interaction, and the Development of virtual team skills [15]. This finding is also supported by Dyrbye, who mentions that online learning is convenient and flexible [16]. Online learning provides benefits by saving time and money and can reach remote areas [17]. Online learning can improve the learning climate and increase student learning motivation [18]. Kim found online learning challenges in difficulty communicating with peers and lacking feedback [15]. The asynchronous communication environment and absence of face-to-face interaction with their peers were the most common obstacles among our participants, resulting in difficulties communicating, forming collegial interactions, negotiating group assignments, and measuring progress [16]. Barriers to online learning include poor infrastructure, English language skills, and computers [18]. Students confront three categories of problems when learning online: technological, pedagogical, and social. Poor internet connectivity and a shortage of electronic devices are two technological difficulties. The key pedagogical problems are lack of teacher and student skills, interaction and motivation, and teacher social and cognitive presence. Social challenges include a lack of human interaction between teachers and students and a lack of support from working parents [19]. Based on some of the research above, besides finding quite a lot of challenges in online learning, there are also good benefits for the advancement of education. This research will find other benefits and challenges of online learning during the COVID-19 pandemic. This is, of course, to improve the quality of online learning, which is likely to be used more and more in learning in the future.

## **2. Method**

The PRISMA method is the research method; the PRISMA methodology is recommended for a systematic review [20]. This method creates a systematic strategy for locating relevant research [21]. The complete PRISMA procedure can be seen in figure 1.

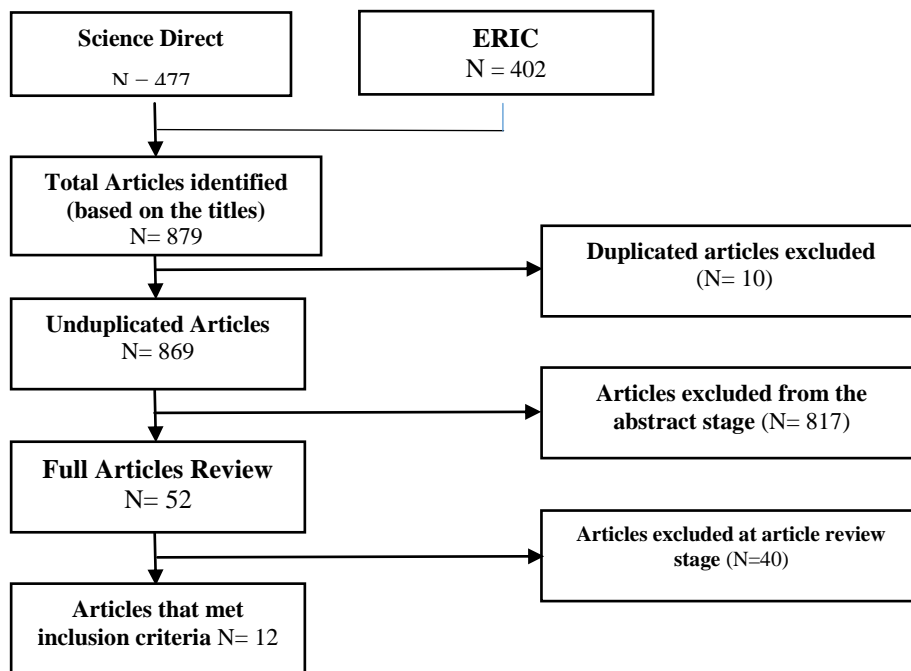


Figure 1. PRISMA Flow Diagram

For this research, articles were obtained from two databases, namely science direct and ERIC. The search keywords used were the same for "Online Learning" and "Covid" for both data sources. The search for articles was carried out in November 2021. The inclusion criteria used were articles that discussed online learning in education and research conducted during the COVID-19 pandemic. The exclusion criteria were in the form of book chapters. Finally, there are 12 articles used in answering the purpose of writing this article. This is also after using the inclusion and exclusion criteria.

### 3. Results and Discussion

#### 3.1 Result

##### a. Benefit

Eleven articles discuss the benefits of online learning during the COVID-19 pandemic. For more details, see table 1.

TABLE 1.  
Benefits of online learning during the COVID-19 pandemic

Author	Benefit
Goldenson et al., 2022 [22] Chand et al., 2021 [23]	Teacher experience in creating and building student engagement in learning In response to the pandemic, universities have been quickly digitizing instructional operations. Flexibility, interactivity, self-pacing, research, and technical innovation are all advantages of distance learning.
Suliman et al., 2021 [24]	On a socioeconomic level, most students said living and studying at home had several benefits, such as spending more time with family and saving money on transportation and other expenses they usually incur when traveling to their university campus.
Dong et al., 2020 [25] Bdair, 2021 [26]	flexibility, wider access, and low cost Online learning strategies are an alternative during the pandemic.
Jogezai et al., 2021 [27]	The use of social media platforms (Facebook and youtube) provides phenomenal support for online learning during crises, such as the COVID-19 pandemic, where face-to-face learning opportunities are suspended.
Lemay et al., 2021 [28] Lapitan et al., 2021 [29]	Utilization of technology in the form of smartphones and laptops Synchronous instruction has the advantage of providing pupils with a timetable and a sense of belonging. It also gives instructors a "whole class" teaching experience and improves instructor communication and student participation.



Elzainy et al., 2020 [30]	Student and staff satisfaction, achievement, and advancement of technology education abilities were all noticed in this successful digital learning environment.
Zhang et al., 2021 [31]	Online education has a positive but moderate impact on test scores, especially for mathematics in the natural sciences.
Clark et al., 2021 [32]	Receiving online education during the COVID-19 lockdown improves student academic outcomes

**b. Challenge**

Eleven articles discuss the challenges of learning during the COVID-19 pandemic. For more details, can be seen in table 2.

**TABLE 2.**  
Challenges of online learning during the COVID-19 pandemic

Author	Challenge
Goldenson et al., 2022 [22]	The strict lecture format is unlikely to foster a deep understanding of important topics, and students will not gain insight into work experiences and challenges.
Chand et al., 2021 [23]	Internet accessibility, internet service fees, and computer literacy to participate in digital learning. Socioeconomic factors. Human and pet nuisance. assessment and supervision
Suliman et al., 2021 [24]	Significant concerns regarding achieving desired competencies and learning outcomes from clinical courses.
Dong et al., 2020 [25]	Potential danger to young children's social development and physical health, especially eyesight.
Bdair, 2021 [26]	Examination parameters such as tests, quizzes, and assignments are not under your control. Practical competencies and hands-on abilities cannot be taught through online learning. Another barrier for online learning is academic integrity issues such as plagiarism and cheating. The additional financial strain of purchasing new technology items and internet connection for some families is a struggle.
Jogezai et al., 2021 [27]	Inadequate ICT infrastructure and incompetent teachers
Lemay et al., 2021 [28]	Students reported higher levels of tension and anxiety and trouble concentrating, implying that hurdles to online learning include technological and instructional issues and social and emotional issues such as isolation and social distancing.
Lapitan et al., 2021 [29]	The internet connection stability and instructor familiarity with various internet-based teaching technologies, such as video conferencing software, were obstacles. Instructors must also develop strategies to expand their connections with students during online classes and sustain student interest and involvement.
Elzainy et al., 2020 [30]	Adapting to changes towards e-learning
Saha et al., 2021 [33]	Bangladesh has been associated with numerous issues and challenges of online learning, digital infrastructure, and digital inefficiency related to the phrase digital divide in the application of digitization.
Clark et al., 2021 [32]	Due to the limited storage space on smartphones, downloading course materials and completing homework can be difficult.

**3.2 Discussion**

**a. Benefit**

In previous research, the benefits of online learning include flexibility, saving time and money, increasing motivation, developing skills, creating a special learning climate, and opportunities for interaction. This study also found these benefits, but other benefits had not been previously stated. The learning benefits found were: development of learning strategies by teachers, digitalization of learning, technological innovation and research, broad access to learning, building a digital learning environment, increased academic results, increased interaction time with family, and the use of social media platforms in learning.

The COVID-19 pandemic has led to the development and searches for new ways to introduce and regulate digital learning environments in educational institutions [34]. Learning in a digital learning environment is characterized by learning materials independent of time and location and broad access to learning materials [35]. Digital learning environments create open learning situations and interactive learning and are good for independent learning [36]. The online platform allows wider access and flexible use of multimodal resources facilitating student representation construction activities [37]. The COVID-19 pandemic has proven the need for tools and methodologies to support student self-learning and formative assessment practices in the context of distance education [38]. Students desire to participate in student-centered e-learning activities and good learning management systems for content study and discussion. They use content curation, private group administration, and mobile interoperable e-learning solutions. These findings suggest that recent experiences influence students' desire to use e-learning systems. Infrastructure enhancements and faculty preparedness must be explored simultaneously to support student-centered digital



learning experiences [39]. To build a good digital learning environment and according to needs, digital learning training is needed before learning is carried out. This will create good benefits for the development of online learning, namely the more proficient teachers and students are in using it.

The COVID-19 pandemic has made learning carried out online and students taking lessons from home. This condition causes students to have more time to gather and socialize with their families. The amount of time students gather with their families brings good benefits for the emotional side of the child, as well as provides plenty of time for families to provide support for students [24]. Online learning forces teachers to choose the right learning media to use; currently, social media is one of the digital content students access every day. This is a great opportunity to be utilized in learning. Physical distance restrictions make teachers choose social media as online learning media [27]. Social media technologies include various Web-based technologies such as blogs, wikis, online social networks, and virtual worlds [40]. The use of social media in online learning makes students' learning more preferred and can be done flexibly. The use of social media during the COVID-19 pandemic and the ability of teachers to use social media in online learning is good capital when learning is carried out [41]. Learning using WhatsApp can be improved by applying good collaborative learning [42]. Social media has evolved from a communication and sociability tool to a learning tool. The following are three strategies for utilizing social media: question and answer, ask questions, and collect assignments. Social media was chosen because of its popularity and flexibility for professors and students. In the evolution of online learning, aspects of accessibility (cost and connectivity) become difficult. Social media has been shown to be useful and efficient in communicating messages and achieving learning goals [43]. A large number of uses of social media by teachers and students brings good benefits when online learning is carried out by utilizing social media as a learning medium.

#### **b. Challenge**

The results of previous research have found so many challenges of online learning. In the results of the research data synthesis, several new challenges were found, which certainly greatly interfered with the success of online learning. Learning challenges include: interference from humans and pets during online learning, concerns about competency achievement and learning outcomes, dishonesty, plagiarism, cheating, increased stress and anxiety levels, technology adaptation, and demands for technological device updates. Online learning brings several challenges that all parties must face. Disturbance from humans and animals is one of the challenges faced. This disruption can cause online learning to be hampered, so online learning cannot run properly. The achievement of competence and learning outcomes is one of the goals of students participating in learning at school, so worrying about this is natural. A study conducted by Baber found that the interaction factors in the classroom, student motivation, course structure, instructor knowledge, and facilitation positively affect student perceived learning outcomes and student satisfaction [44]. The existence of dishonesty in the online learning process in the form of cheating and plagiarism can reduce the quality of learning and have a negative impact. When correcting student exam answers, it is better to use plagiarism detection software [26].

High levels of stress followed by anxiety are a challenge found due to changes in the learning process. At the same time, students are also not ready for the changes that occur rapidly in the learning process. Integrating online counseling and stress management programs will help reduce student stress during distance learning [45]. Technology adaptation must be made, considering that online learning is entirely done by utilizing technology. Research conducted by Pérez-López reveals that students from families with low levels of education have fewer opportunities to use digital technology [46]. Because pupils with poor levels of education are commonly found in schools in impoverished countries, this will be a significant difficulty. One of the factors is a lack of student and teacher preparation to use technology in the classroom. Teachers and students must be trained in learning technologies if online learning continues after the pandemic. Learning during the epidemic has prompted numerous questions about how online learning will be adapted in the future. The study's key finding is that students are generally dissatisfied with the efficiency of online learning during the epidemic; this dissatisfaction stems from a lack of proper student contact due to fewer opportunities for informal student engagement [47]. To ensure effective learning, educators must rethink current technology-mediated education delivery systems.



#### 4. Conclusion

Many benefits were found during online learning during the COVID-19 pandemic, some of the benefits and challenges similar to those found in studies before the COVID-19 pandemic were no longer stated. The benefits found in the form of teachers who try to develop learning strategies that are following online learning, the existence of digitalization of learning that adapts to needs, the learning carried out has broad access, technological innovation throughout the school, increased interaction time between students and their families and increased student academic results. The benefits that need attention in the future are establishing a digital learning environment during online learning and the use of social media in online learning. The challenges found were in the form of disturbances in the learning process by humans and animals, dishonesty of students when taking exams and doing assignments, worries and anxiety about not achieving competence and learning outcomes, increasing student and teacher stress, and challenges in using learning technology-addressed as soon as possible for the continuity of online learning. Further research is needed on building a digital learning environment for online learning, especially those using social media.

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