The Impact of Learning Loss During a Pandemic Among Students

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Abstract:
Online learning conducted during the pandemic is a solution to this global disaster dilemma. Students must follow government policies to carry out online learning amid their limitations. Even though technology is currently developing rapidly, there are still difficulties that cause learning at home to be not optimal. The existence of difficulties in the learning process will result in learning loss. This study aims to see the impact of learning loss experienced by students. This study uses a literature study method by describing the findings from various literature sources from previous research. The results of this study indicate that the form of learning loss experienced by students will cause lost for years and have an impact on academic performance until they become adults cumulatively. Students feel a decrease in interest in learning compared to face-to-face learning. To address learning loss, policymakers should consider targeted programs, use teaching methods, improve teacher-student communication and involve parents to accelerate recovery and minimize the impact of learning loss.

Keywords: Learning loss, pandemic, online learning, students.

1. Introduction

The COVID-19 outbreak has brought urgent changes to various sectors. The development of the virus quickly spread throughout the world. Indonesia is also one of the countries affected by the epidemic. This outbreak has been declared a global health emergency. This virus has hampered all human daily activities. Recorded cases of covid-19 in Indonesia until September 16, 2022, reached 6,402,686 with a death toll of 157,849 (Covid-19 Cluster, 2022).

Since the outbreak of the COVID-19 virus in Indonesia, the government has taken steps to prevent its spread. Things that can be done to help prevent the spread of the coronavirus are to apply 3M, namely maintaining distance, wearing masks, and washing hands with soap and running water. With the implementation of this 3M practice, it is hoped that it will help reduce the spread of the coronavirus in the community.

The COVID-19 pandemic that hit Indonesia and other countries in the world had a major impact on various fields, including education. The government has implemented a Large-Scale Social Restriction (PSBB) policy to contain the spread of the coronavirus, urging all activities outside the home to be temporarily suspended until the pandemic subsides. Therefore, to minimize the spread of COVID-19, the process of teaching and learning activities must be carried out online from their respective homes. This is stated in the Circular Letter of the Minister of Education and Culture Number 4 of 2020 regarding the implementation of the learning process at home.

All levels of education from PAUD to tertiary institutions have adopted a policy of conducting online learning. The outbreak of the Covid-19 virus has prompted the implementation of work from home (WFH) policy. Therefore, both public and private schools and campuses nationally must take steps to implement online learning.

This is done to prevent the spread of the Covid-19 disease and minimize the spread of this covid-19 disease, it is hoped that all people will not carry out activities as usual and have to work from home (Castillo et al., 2020) without exception for educational institutions must innovate in the learning process at during the pandemic through interesting online learning so that the quality of education can still be improved.

The closure of universities and schools is only physical in the sense that school buildings and campuses are closed, but learning and other administrative activities will still be carried out remotely. Teachers and lecturers will continue to do online learning, and students can study online from their own homes. This e-learning learning system also has the advantage of reducing operational costs for institutions. This is because the data storage space is very efficient and does not take up much space. Logistics costs are also reduced with materials already available on site (Irawati & Santaria, 2020).

In just a few days, with little time and the lack of readiness of human resources and other supporting institutions, schools finally switched to simultaneously using online learning modes. Online learning is the main representative choice so that the teaching and learning process continues (Andriani et al., 2021). But over time, this type of learning poses some serious obstacles. Schools and teachers need to keep learning and start looking for other formats to help students keep learning (Coal & Coal, 2020). The form of learning that the teacher seeks must consider the needs and circumstances of the students themselves.

Significant changes in the education system that had been going on for years, even hundreds of years later, came suddenly and forced these major changes to create learning challenges for students, teachers, and relevant policymakers. For students, the first difficulty is changing a mostly direct and collaborative learning environment into individualized learning (Puspitorini, 2020). One concern is that learning at home that takes longer can lead to learning loss and a decrease in academic knowledge and skills (Donnelly & Patrinos, 2021). When change and difficulty appeared, maker policies, practitioners, and researchers Secrete notification warning potency danger for progress study students. Learning loss can affect the quality of talent that has emerged years after the COVID-19 pandemic.

Learning loss is one of the concepts defined as the less than optimal learning process that takes place in schools (Li et al., 2020). The learning process is not optimal, as are the results of information received from students and student learning outcomes. Since the Covid-19 pandemic began to close schools around the world, it is estimated that there will be a risk of losing learning.

Learning loss is unlikely to be a temporary shock but can continue to accumulate learning loss even after children return to school. Based on the April 2020 UNESCO, UNICEF, World Bank, and WFP report on the Framework for Reopening Schools, global school closures due to the pandemic will have a significant impact on children's education, protection, and lives. risk destroying happiness. Therefore, there is a need for further studies written in this study regarding the impact of learning loss during the pandemic among students.

2. Method
The data collection technique uses library research which is strengthened by relevant research studies. library research also means data collection techniques by reviewing books, literature, notes, and various reports related to the problem to be solved. This study uses a descriptive method that describes the impact of learning loss during a pandemic among students. According to Moleong (2013) research to describe the data collected in the form of words, pictures, and not numbers is called the descriptive method.

Sources of data used in the research literature study in the form of primary and secondary data, data collection is done with documentation such as pictures and videos. Data analysis is adjusted to the purpose of deductive, inductive, interpretative, comparative, and historical research stages.

This study uses at least 5 data collection instruments to obtain comprehensive data from the point of view of students and observers. The instruments used include:

a. sources of data related to the impact of learning loss during the pandemic,
b. the results of the data sources are analyzed,
c. reduced data,
d. provide recommendations on use, and
e. how to reduce the impact of learning loss.

The data analysis technique used in this research is content analysis method. This analysis is used to obtain valid inferences and can be re-examined based on the context (Krippendorff, 2004). In this analysis, the process of selecting, comparing, combining and sorting various meanings will be carried out until the relevant ones are found.

3. Results and Discussion

3.1 Lessons in the Time of a Pandemic

The Covid-19 pandemic has brought tremendous changes, including in the field of education. Education at all levels is forced to adapt suddenly and significantly to home learning through online media. This learning method is not going to be easy, because, from various lines, educators, students, infrastructure, and curriculum are not ready. The problem with education is that the learning process has not been integrated and both the standards and the quality of the desired learning outcomes are not in place.

Learning from home or online is an alternative solution for classroom learning during the COVID-19 pandemic. Online learning is defined as a knowledge transfer experience using video, audio, images, text communication, software (Basilia & Kvavadze, 2020), and utilizing the internet network (Zhu & Liu, 2020). Online learning is a means to make the teaching and learning process more student-centered and an innovative learning model that facilitates the advancement of information technology. This certainly makes it easier for teachers and students to adapt to the times. Modifying knowledge transfer through website forums (Basilia & Kvavadze, 2020) and digital technology trends as a feature of the Industrial Revolution 4.0 to support learning during the covid-19 pandemic. The integration of technology and various innovations is the hallmark of online learning (Banggur, 2018). Furthermore, the important thing is the willingness of teachers and students to interact online and position themselves not as users but as actors by using various online learning media platforms.

Online learning presents its challenges for educational stakeholders such as educators, students, and institutions, as well as challenges for the wider community such as parents. Educators must adapt and provide innovation to continue to deliver learning materials effectively and efficiently. Likewise, students must be able to adapt to current conditions and situations, one of which is mental readiness. As well as the important role of parents in monitoring and interpreting the needs of their children when the learning process takes place at home.

The role of technology is an important factor in the implementation of online learning. Technology can facilitate all needs in the learning process. This is the opinion of Tonder et al. (Selwyn, 2011) regarding digital technology in an educational institution is a means of supporting learning, both as a means of accessing information about learning resources and as a means of supporting learning activities and related to tasks (Lestari, 2018). With the development of the technological age, there are now many platforms to help implement online learning such as e-learning, Google Classroom, Moodle, Edmodo, Learning House, and even video conferencing-style platforms such as Zoom, Google Meet, Visco Webex, etc.

The success of mastering technology will greatly affect the learning process during the pandemic. Some previous literature shows that the technological aspect is considered one of the factors associated with the

implementation of online learning during the pandemic. Research (Aldowah, 2019; Almaiah, 2019) shows that there is a positive relationship between technology aspects and students' use of online learning.

Online learning is emerging as an alternative to traditional learning during a pandemic. Of course, to be able to carry out this learning requires a number of supporting devices, such as infrastructure, application systems, content, digital learning media, and good human resources. Its implementation also requires motivation from the students themselves, but the pandemic has taught us a very important lesson.

3.1.1 Advantages of Online Learning

Asynchronous online learning is carried out by teachers to encourage students to be more active in learning. The desire to understand the material shared by the teacher through learning applications and instant messages encourage students to actively read, discuss with peers, and ask questions directly to the teacher (Andriani et al., 2021). The flexibility of online study time allows students to set their learning patterns (Liu, 2021). When studying online, teachers usually upload materials with assignments and set deadlines for submitting assignments. This will help students plan their own time to study and do the assignments given by the teacher. Andriani's research (2021) found that the most dominant benefits of online learning from students participating in online learning during the corona pandemic, were: (a) saving learning time (70%), (b) online learning can be done anytime (70%), (c) students can take lessons from anywhere (62%). In addition, there are many other benefits such as saving pocket money, flexible study time, etc.

Recognition of students who prefer to carry out learning activities through online learning. Research conducted by (Puspitorini, 2020; Surani & Hamidah, 2020) shows that students can support and feel that a flexible online learning system can increase their independence and motivation to learn.

Online learning allows more resources to be made available to students and teachers to enhance and expand classroom activities. Teachers are no longer limited to the material they have in the classroom or the school's media center. They can access resources from all over the world. They can provide students with experiences such as access to websites and media that help students learn to use the internet as a source of information. Students can reach information from other educational actors to exchange ideas without any limitations of space and time.

3.1.2 Weaknesses of Online Learning

Online learning has been recognized as the best solution for teaching and learning activities during the COVID-19 pandemic. Although it has been recognized, this learning raises various problems. For teachers, online learning is only effective for assignments, and it is difficult to make students understand the material. In addition, each student has different technical and financial skills. Not all students have facilities to support online learning activities. Bad internet connection, unsupported devices, and expensive internet quotas are obstacles to online learning. However, learning must continue. Each educational institution has its policy to accommodate this rule. Several educational institutions provide internet quota subsidies to educators and students to carry out online learning (Maulana & Hamidi, 2020).

Online learning has certain weaknesses because it can interfere with communication between students and teachers, namely face-to-face communication and direct touch as a human being is reduced. Users can face many technical problems that hinder or slow down the teaching and learning process (Favale et al., 2020). The flexibility of time and place is a strength of online learning, but these aspects are fragile and create problems. Student behavior that is not sensitive to time and flexibility can cause many problems. All students are not the same and have different abilities and self-confidence (Dhawan, 2020). Some people find online learning uncomfortable, adding to their frustration and confusion. Inadequate fit between technical design and psychological elements is required and also lacking in the learning process. Adaptation of the learning process can disrupt the educational process and create imbalances.

This major change has created learning challenges for students, teachers, and relevant policymakers. Every problem in this learning process results in a lost of learning (Zhao, 2021). The learning process is not optimal, as are the results of information received from students and student learning outcomes. Therefore, learning loss can affect the quality of talent born during the COVID-19 pandemic.

3.2 Learning Loss

The term "Learning Loss" is usually used in the literature to describe the decline in students' knowledge and skills (Pier et al., 2021). Historical data provides researchers with information on where student learning should be from year to year and is often measured through regular testing. Learning loss occurs when educational progress does not occur at the same rate historically as in previous years. Learning loss refers to the lost of a small or large part of knowledge and skills in academic development caused by the cessation of the learning process in the world of education.

According to The Education and Development Forum (2020), learning loss is defined as a situation where students lose general or specific knowledge or skills and decrease academic performance as a result of long-term gaps or discontinuities in the educational process. According to Indra (Pratiwi, 2021) explaining from the definition used abroad is a phenomenon that occurs in students from low-income economic groups who cannot use gadgets or access the internet to study.

Judging from the learning loss concept used in Indonesia and abroad, there are differences. In Indonesia, the concept of learning loss is only understood as a form of student disability due to the COVID-19 pandemic. Based on this concept, learning loss itself can occur due to many things, such as school holidays, skipping school, ineffective education, and dropping out of school. Abroad, the concept of learning loss is a state of lost or decline in the knowledge and skills of a student caused by a lack of continuous interruption of education.

According to research (Puspitorini, 2020), there are many learning difficulties among students and teachers during the pandemic. For teachers themselves, difficulties in carrying out the learning process are on the institutional side and the application of technology which is still new. The difficulties and problems associated with this modern technology range from downloading errors, installation problems, login problems, audio and video problems, and so on. Sometimes students find online teaching uninteresting. Online learning has so much time and flexibility that students never find the time to do it (Dhawan, 2020). Personal attention is also a big problem facing online learning. Students want two-way interaction which is sometimes difficult to implement. The learning process cannot reach its full potential until students practice what they learn. Sometimes, online content is all theoretical and doesn't allow students to practice and study effectively.

Difficulties in the learning process lead to learning loss (Donnelly & Patrinos, 2021; Kashyap et al., 2021). Learning loss is one of the concepts defined as the largest learning deficit in schools (Kashyap et al., 2021; Li et al., 2020). The learning process is not optimal, as are the results of information received from students and student learning outcomes. Therefore, the lost of learning can affect the quality of talent born during the Covid-19 pandemic.

These various problems and changes cause interference in student education and cause learning losses. Students experience decreased ability to learn and understand information. That is the main concern of the Minister of Education, Culture, Research and Technology Nadiem Makarim in learning during the pandemic for learning to be carried out immediately so that students do not experience learning loss.

3.3 Learning Loss Opportunities and Challenges

Closing school Becomes a choice main the moment war opposes pandemic. Learning is conducted simultaneously through the system online, avoid pattern teaching stare advance (offline). Though, dependency on Indonesian people for education school could result in learning loss because influences their ability to study students. Regardless of aspect dependency this, concept education distance far set _ government it seems also not yet ready for make curriculum and appropriate programs with study and reality in Indonesia.

Distance learning cannot be separated from gaps that make this learning system less effective. There are concerns that long-term distance learning will affect learning loss. The occurrence of learning loss is feared to include limited interaction between educators and students, limited interaction between students and other students, problems with study time, lost of focus and concentration, and lack of focus and attention given by students, including the inability to assimilate learning materials.

Lack of face-to-face teaching hurts interest in learning. When learning face to face, they assume that they are being watched, or are being watched directly and explicitly, so that their appetite for learning is relatively stimulated. However, in the current situation, the awareness of wanting to learn is decreasing. Face-to-face learning is believed to be more effective because the fluctuating spirit of learning is better managed through positive affirmations from the teacher.

Learning loss during school closures is already a well-documented challenge in high- and low-income countries (Slade et al., 2017). The pandemic poses additional challenges because it is unpredictable and combines school closures with additional shocks, such as adverse health impacts on households, and economic impacts through the lost of parents' jobs (Jain et al., 2020). Taken together, it should come as no surprise that young people may have lost some of their previously acquired academic skills and lag in acquiring new ones. Evidence from previous crises supports this. For example, four years after the earthquake in Pakistan, household and adult outcomes have recovered but learning losses persist (Andrabi et al., 2021). In addition to learning losses, evidence during previous health crises suggests that dropout rates have increased dramatically.

According to Jojor & Sihotang (2022), the potential for learning loss is also caused by the level of educational content that needs to adapt to existing changes. As we know, educational content standards include the amount of material that students must complete at certain levels and types of education, material competencies, subject competencies, and study plans. The achievement of educational standard content leads to the persecution of educators against students to enable them to master the material of various professional texts, as stated in the syllabus and syllabus used. Even though the difficulties during the pandemic are different from normal times.

3.4 Impact of Learning Loss
A synonym for digitizing distance learning education expands the use of digital technology in everyday learning. The survey results in the World Bank publication entitled "Estimates of COVID-19 Impacts on Learning and Earning in Indonesia: How to Turn the Tide" concluded that there was an imbalance in the availability of household goods to support online learning. Findings (Carelia, et al., 2021) show that perpetrators who do not take advantage of online learning are those who do not have internet access at their place of residence, or because they are not accessible to everyone. online student. Rural and low-income households have less access to computers, the internet, and other devices that support online learning than households in urban areas and rich economies.

Data from early grade reading assessments in Ethiopia, Kenya, Liberia, Tanzania, and Uganda show learning loss from six months to more than a year. We agree that one of the academic challenges faced by students from low socioeconomic status (SES) families is the lost of summer learning (Bowers, 2018). A total of 22 students from low SES households participated in a summer program to improve oral skills. The importance of face-to-face learning is that there must be a competency approach that is lost when face-to-face learning is felt directly by the teacher or student.

The impact of change is the most worrying because of worries on unfavorable impact _ fair on minority, low SES , and population students at risk, many of whom tend to have problems with this (Fortuna et al ., 2020; Kim & Bostwick, 2020; Pier et al ., 2021), depends on service school or fight by academic before the pandemic. Students from the background behind family income more economy low reported more fights with access to room online class and report more little opportunities to interact direct or direct with the teacher compared with students in the area or background behind income higher.

The challenge of learning loss is not only felt by students but other education actors such as educators. According to the Minister of Education and Culture, educators have an important role in this 4.0 industrial revolution era, especially in creating superior Indonesian human resources. 67% of teachers reported having difficulty in using digital technology, 20.4% of educators reported limited remote learning support tools, and 20.2% of educators had difficulty observing their students in online learning.

According to Nadiem, currently, it is difficult to avoid learning loss. Therefore, the Ministry of Education and Culture is intensifying the application of online learning as long as students have to study at home. The campus and local governments are allowed to hold face-to-face teaching and learning processes with several restrictions. During this nearly a year and a half of covid, this has caused several key problems, namely:

3.4.1 Decreased interest in learning
As a result of this pandemic, students face various psychological challenges. Psychosocial status is a consideration in the implementation of educational services during the pandemic (Susanto, 2021). This psychosocial refers to social relationships in individual conditions, including social and psychological factors. This situation occurs because if online learning takes too long, children become bored, lazy, and unmotivated to learn (Zaitun, 2021).

A study conducted by the Tony Blair Institute for Global Change (TBI) in Susanto (2021) recently described the experiences of young people about COVID-19 and its impact on their lives, with increased feelings of fear/anxiety, sadness, and anger after the pandemic. On the other hand, young people in seven countries, including the largest number of respondents in Indonesia (29%), admit to having lost a lot of their happiness, enthusiasm, and hope. In the coming years, this will have an impact on where the younger generation is currently producing knowledge in the era of the covid-19 pandemic.

Data from the study of Della and Aljalilah (2021) found a negative effect of online learning on students during a pandemic. This side effect was obtained from 13 respondents. The negative impact is reflected in the decreased interest in student learning during the pandemic. There are several reasons why students' interest in learning declined and became volatile during the COVID-19 pandemic.

The most common reason students lose interest in learning during this pandemic is increased boredom in the online learning process. Saturation is caused by the learning process that runs many times (Herdiana et al., 2021). Learning saturation is indicated by the difficulty of a student in understanding the teacher's lecture material. This is by the data received that some students find it very difficult to understand the material they receive when learning online.

Based on the data obtained, there are several causes of boredom that cause students to lose interest in learning. From internal factors due to learning habits in a face-to-face or face-to-face system with direct interaction. So that online learning policies will make students adapt back to the new system. Online learning also requires students to support electronic devices and internet networks (Ferri et al., 2020). Students become bored if they use this phone continuously for a long time. Coupled with the often unstable internet, this makes learning difficult.

Furthermore, from external factors, students have difficulty understanding the material presented and looking for references that support the material presented during the learning process. Before the introduction of the online system, teaching materials were usually delivered directly by the teacher. However, during online learning, most of the material uses sentences that are difficult for students to understand, so students have difficulty understanding them. Therefore, students must be guided directly by their teachers (Sadkin and Hamidah, 2020).

The delivery of material by the teacher is boring and the assignments are constantly making students bored and tired. To avoid boredom, students need a peaceful and supportive environment in their online learning process. However, according to the data obtained, some students still feel that the environment does not support their online learning process such as a noisy home situation, or is disturbed by other activities that break the focus of students in understanding the material (Rahiem, 2020). The learning environment affects one's ability to concentrate. A good and supportive environment helps people to focus on learning.

Not only that, before entering class, students usually socialize with their friends at school. However, during this pandemic, few or no students socialize with their friends, let alone discuss the subject matter. This is felt by students in group assignments which are usually carried out together at campus facilities but are currently only discussed through virtual communication.

3.5 Efforts to Minimize Learning Loss
Learning loss experienced by students can cause years of lost and have an impact on cumulative academic performance (Hanafiah et al., 2022). Historically, the phenomenon of learning loss has always accompanied summer in America, the condition sounds "terrible" where two months of learning are lost for most students each summer, and two to three months of learning are lost for low-income students, according to National Summer Learning. Association in ninth grade, "missing summer learning during primary school accounts for two-thirds of the reading attainment gap between low-income children and their middle-income peers".

The following are the results of research on experienced learning loss: 1) The main type of experienced learning lost is that students feel they learn less than when they attend class. 2) 8 out of 10 students exhibit some other type of learning loss. 3) then stated that students only learn other forms of learning loss; 4) The fourth form of learning was found by Save the Children. Losing 4 out of 9 children had difficulty understanding the teacher's homework.

According to Wati (2019), one of them is mastering and understanding children's school material so they don't experience learning disorders during distance learning. Especially in early childhood, parents need to understand their child's learning material. At an early age, they do not understand effective learning methods and still need parental guidance. Meanwhile, according to Pratiwi (2021), the factors that influence children who are at risk of experiencing learning disorders are ineffective learning, temporary school closures, and less than optimal learning. Of course, this can pose a risk to the child if it lasts longer than the parents fear. One of the strategies implemented by the teacher is coordination with parents whose role here is to motivate them to complete tasks and control children in the use of devices. So that children do not often play games using gadgets instead of studying.

To minimize learning loss, the strategies adopted must be used and applied strictly to offset all learning losses when schools reopen. Teachers identify well with students because similarities in ethnicity, language, education, and poverty can create a comfortable learning environment (Arifudin, 2020). Students' perspectives on how schools can promote the academic success of students living in poverty are: 1) creating a culture of hope, 2) developing a network of relationships, and 3) cooperating with parents and parents to create more meaningful learning. The efforts of teachers as the frontline in minimizing learning, are as follows:
   a. Designing diverse learning according to the abilities, talents, and interests of students (need-oriented learning).
   b. Take the right approach to motivate students to actively participate in distance learning. In short, the better the students' motivation, the better their academic performance. Intrinsic and extrinsic motivation has been used to explain the success or failure of task completion.
   c. If you find that some students have limited online communication skills, take a different approach. namely coordination and communication between teachers and parents. The digital revolution is undeniable and if we can take advantage of it, it will have a positive impact on education in Indonesia. Synchronous or asynchronous learning platforms can help reduce teacher time lost due to interactive

talk shows, webinars, and online courses, as well as help users spend appropriate time playing innovative games (Hastini, 2020).

Efforts to minimize learning loss require not only focus on elements of information technology, but also the restructuring of modern curricula. Schools also need to motivate students to face the freedom of seeking knowledge rather than simply tracking assignments and grades. In addition, it is important to improve teachers' understanding of information technology so that learning done through online systems can vary in non-monotonous media.

4. Conclusion

The learning process is not optimal, as are the results of information received from students and student learning outcomes. Therefore, learning loss can affect the quality of talent born during the COVID-19 pandemic. Learning loss is defined as a situation in which a student loses general or specific knowledge and skills or becomes academically impaired as a result of prolonged interruption of the educational process. The learning losses experienced by students result in cumulative losses over the years, impacting not only a child's academic performance throughout the school year but also as they grow into adulthood. If students feel that they are learning less than if they were taught face-to-face in the classroom, policymakers should consider targeted early recovery programs and mentoring methods to cope with learning loss should be adopted and there should be close communication between teachers, students, and parents.

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