Children's Future Adversity: Learning Loss Risk during Online Learning in Covid-19 Pandemic

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School closure policies during the covid-19 pandemic have changed from face-to-face to online learning. This change inevitably impacts the unpreparedness of schools, parents, and students in managing learning, which may cause learning loss in children. On its official page, the Indonesian Ministry of Education stated that due to the covid-19 pandemic, the implementation of online learning had caused a significant learning loss. This study analyses the risk of learning loss due to online learning in Indonesia in terms of children's future adversity. This study used a qualitative descriptive method with survey techniques using Google Form and data analysis used the Miles and Huberman model through three stages: reduction, display, and data verification. This study involved 1229 elementary school students spread over 82 cities from 34 provinces in Indonesia. The results showed that there has been learning loss in children in the form of low academic and life skills achievement indicated by difficulty in understanding subject matters (cognitive domain), lack of confidence in expressing opinions (affective domain), and difficulty in accomplishing projects or learning tasks (psychomotor domain). The implication of learning loss is the decline in the quality of abilities, academic achievement, competitiveness, and welfare of children in the future. The results of this research could be recommended as a reference for educational practitioners and insights for future research.

Keywords: online learning, learning loss, covid-19 pandemic, children, earning

INTRODUCTION

The school closure that has been taking place since March 2020 has significantly impacted education worldwide. It is estimated that this policy may potentially risk the affected generation of students' lifetime of losing the income of USD 10 trillion in present value (Schrader-King, 2020). School closures also negatively impact development, education, health, revenue, and economics in all sectors of life (Meredith, 2021). Numerous education employers complained about difficulties in achieving learning competencies in children during online learning. The study conducted by World Bank-Global Education Practice on a reading test entitled *"Simulating the Potential Impacts of covid-19 School Closures on Schooling and Learning Outcomes: A Set Global of Estimates",* involving 157 countries in June 2020 (in the intermediate scenario), found that the average student will lose 16 PISA points as a result of school closures (Azevedo et al., 2021). In addition, The Ministry of Education and Culture of the Republic of Indonesia survey results showed that more than 20 percent of Indonesian students did not meet the competency standards during online learning (Putra, 2021). Still, the potential loss of this learning experience will continue even though the school reopens (Mediana, 2021).

Budiman (2021) argued that school closures had caused many complex challenges, especially children's mental problems. In general, covid-19, as the underlying reason for the school closure, had caused psychological trauma to the community (Abdullah, 2020). However, the importance of putting children on the first priority should be stressed despite various burdens and challenges parents and teachers face during online learning (BBC, 2021).

The studies on the impact of online learning policy have generally taken two perspectives. Some studies try to analyse the impact of online learning as the accelerator of students' digital literacy and knowledge transformation (Chamberlain, 2020). Other studies examine the potential impact of students' learning loss during online learning (Khan & Ahmed, 2021). These two perspectives put an idealistic and objective viewpoint in seeing online learning as the impact of school closure policies during the pandemic. In other words, existing studies have not been addressing the anticipation of the policy practice.

Many researchers have investigated the impact of online learning resulting from school closures due to the covid-19 pandemic on students' learning loss. Holzer (2021) studied students' basic needs and well-being during the covid-19 pandemic attributed to basic psychological needs satisfaction, intrinsic learning motivation, positive emotions, and moderate role of self-regulated learning (Holzer et al., 2021). Azevedo (2021) examined the simulation of the potential impact of the covid-19 school closures on school outcomes and students' learning (Azevedo et al., 2021). In addition, the effects of covid-19 on student learning in primary schools in New South Wales have also been scrutinised (Gore et al., 2021). Besides, the research on the questionable impact of learning disorders or learning loss has been conducted using evidence from unplanned closures to inform return to school after covid-19 (Harmey & Moss, 2021).

Research conducted worldwide has found that the COVID-19 pandemic has significantly impacted education. A study conducted in South Korea uncovers some learning obstacles during the COVID-19 pandemic (Aiyanyo et al., 2021; Siregar et al., 2019). Other research reveals the decrease in students' academic, social, and emotional states, particularly those in high school, due to intense absence during online learning (Santibañez & Guarino, 2021). Khan & Ahmed (2021) examine the impact of COVID-19 on learning loss, dropouts, and economic costs for primary school children in Pakistan (Khan & Ahmed, 2021). Angrist et al. (2021) analyse the impact of the COVID-19 pandemic on learning and mitigation strategies as countries start to reopen and strengthen their education systems to emphasise learning (Angrist et al., 2021). Sabates et al. (2021) examine the learning losses due to the COVID-19 school closures in primary education in Ghana (Sabates et al., 2021).

Several studies on learning loss have also been conducted in Indonesia. Kamza et al. (2021) studied the potential of learning loss in students with special needs during online learning in inclusive schools (Kamza et al., 2021). Andriani et al. (2021) investigated learning loss in online learning during the corona pandemic (Andriani et al., 2021), while Pratiwi (2021) examined the elementary school level (Pratiwi, 2021). Another research focused on psychosocial assistance and learning modules to overcome learning loss during online learning (Hazin et al., 2021). Research also found that teachers have experienced many obstacles during online learning (Nikolopoulou, 2022).

This paper argues that various problems faced by students, teachers, and parents during online learning due to the COVID-19 school closure strongly connect to a problem of the relation between the state as the policy maker and society as education users. This miscommunication problem between the government and the public has led to inadequately conveyed knowledge or understanding of COVID-19. The community was not prepared for school closure or compulsory online learning. This problem occurs due to a top-down policy that pays less attention to the readiness of school organisers and education users. With this approach, the government seemed to neglect bottom-up participatory dimensions in enacting the policy, resulting in several problems experienced by students, teachers, parents, and schools.

This paper fills the gap of the previous shortcomings studies that look at the problems from an objective viewpoint while disregarding the subjective dimension. Therefore, this paper aims to (1) map the forms of learning loss during online learning, (2) analyse the conditions that cause loss of learning, and (3) the implications of learning loss on children's personalities.

Online Learning in COVID-19 Pandemic

COVID-19 is spreading worldwide, including in Indonesia, where the virus is overgrowing every day (Pangestu et al., 2021). The virus breaks out and tremendously impacts the entire field of human life, from personal and community to state affairs. It further affected various aspects of life, such as health, economic, social, religious, or educational spheres. To anticipate the spread, the education process during the COVID-19 pandemic is directed at online learning activities conducted at home (Suyadi &

Selvi, 2022). This is in line with the government's policy of restricting outdoor activities that involve many people (social and physical distancing).

The COVID-19 pandemic has led to school closures in various countries. Schools were then required to initiate online learning to accommodate learning (UNICEF, 2020). Since the school closure in early March 2020, more than 1.2 billion children worldwide have studied at home. Face-to-face learning has been turned into online learning using digital platforms (Alfadda & Mahdi, 2021; Darkwa & Antwi, 2021). Online classes were facilitated by various online platforms such as Zoom, Google Classroom, email, etc. (Munawaroh et al., 2022). In this case, online learning has transformed people's way of thinking, attitudes, and behaviors to persist in teaching and learning activities during pandemic conditions (Chamberlain, 2020). Thus, digital literacy is the key factor in the success of this new pattern (Seah, 2020).

Online learning has been the focus of constant educational research for over two decades (Lulaj, 2022). Yet, it was implemented officially in Indonesia only after the announcement of the Indonesian Ministry of Education circular letter related to the implementation of emergency education during COVID-19. It is asserted that education units within areas categorized as orange and red zones are prohibited from carrying out face-to-face learning and are recommended to perform home-basis learning. Meanwhile, schools situated in yellow and green zones are allowed to accomplish face-to-face learning with rigorous health protocols (Satgas COVID-19, 2021).

Nonetheless, online learning includes both positive and negative impacts. The sudden shift from offline school base to online home base learning has caused difficulties for students, teachers, and parents. Students attending virtual learning exposure showed a decreased achievement in math, language, art, and performance skills. On the other hand, the rapid development of information technology has also triggered educational institutions to implement strategic policies and missions for educational reform and instructional management (Wannapiroon et al., 2022). As a result, many teachers experience difficulty delivering instruction, particularly regarding technology, curriculum design, and internet skills.

Meanwhile, parents find the lack of online devices and insufficient time for home base learning assistance as serious obstacles. Consequently, various online learning problems have indeed impacted all three groups of educational users to transform learning (Iivari et al., 2020). Whereas the quality of education significantly affects the quality of human resources of a nation and state in the future (Mahanani et al., 2022). The emergence of the impact of online learning during the COVID-19 pandemic finally has implications for changes in learning patterns and causes new habits that significantly impact children. In the end, it creates a new conflict, namely learning loss.

Learning Loss as a Result of Online Learning

The Education and Development Forum (2020) defines learning loss as a condition in which learners lose knowledge and skills, either general or specialized and experience academic regression due to prolonged gaps or unstable educational processes (Huong & Jatturas, 2020). Learning loss may include knowledge (cognitive), attitude (affective),

and skills (psychomotor) deficiency during learning (Anderson & Krathwohl., 2001; Kementerian Pendidikan Nasional, 2016). The decline and gap in students' achievement during online learning occurs due mainly to unequal access to education. Students from low-middle socio-economy experience considerable constraints in terms of facilities availability. Online learning risks hindering schools' learning process in remote areas due to limited internet access and inadequate costs for gadgets, devices, and internet data quotas. Even though the internet is one of the learning resources for children (Heliawati et al., 2021). This will potentially increase the gap or inequality of education in Indonesia (Santosa, 2020).

With the COVID-19 pandemic, schools are moving to distance learning using various online learning apps and platforms (Alomyan, 2021). Implementation of distance learning has lasted almost two years, and education practitioners and observers in Indonesia have become concerned about critical students' learning loss (Oktaviana & Srianggita, 2021). Research conducted by the Ministry of Education, Culture, Research, and Technology found that during the pandemic, students experienced a learning loss equivalent to six months and five months for literacy and numeracy, respectively. Before the pandemic, students' learning progress for one year of education at the elementary school level was 129 points for literacy and 78 points for numeracy (Kementerian Pendidikan Indonesia, 2022). From the above problems, it is necessary to reveal factors contributing to students' learning loss focusing on aspects of development, i.e., knowledge (cognitive), affective, and psychomotor.

METHOD

This research is conducted based on intensive community concerns, especially regarding students in elementary school children. This descriptive qualitative research aims to explore and understand the extent of learning loss experienced by children during online learning due to the impact of the COVID-19 pandemic. Elementary school students are selected as the object of study since this range of age constitutes an essential foundation of life. According to Jean Piaget, children aged 7-12 years are chiefly in a state of concrete operational thinking in which physical stimulation is required (Babakr et al., 2019). Thus, it is assumed that online learning implemented for elementary school students may not be following the development of children.

This study involved 1229 elementary school students engaged in online learning during the COVID-19 pandemic that selected based on lower class (grades 1, 2, 3) and upper-class students (grades 4, 5, 6). They came from urban, border, and rural areas to reveal readiness for the availability of internet networks and ease of gadgets ownership. This area classification is considered to provide a comparative perspective regarding their response to online learning during the pandemic. Since technology-based education requires a great deal of cost and considerable supporting infrastructure, the three distinct geographical areas may experience different obstacles.

The instrument of this research relates the results of online learning with Bloom's Taxonomy theory which involves three aspects, namely cognitive (C1=Remembering, C2=Understanding, C3=Applying, C4=Analysing, C5=Evaluating, C6=Creating),

affective (A1=Receiving, A2=Responding, A3=Appreciating, A4=Organising, A5=Characterisation), and psychomotor (P1=Imitation, P2=Manipulation, P3=Precision, P4=Articulation, P5=Naturalisation). These three aspects have been the basis of the research instruments, which were then developed into 16 questions. The research instrument is then validated by experts and tested on several participants before the survey on Google form was distributed across Indonesia through social media or internet networks.

Participants: Selection of respondents or informants

This research involved participants of elementary school children in almost all regions of Indonesia. The process carried out obtained a sample using probability sampling. Probability sampling is a method of random sampling. In the sampling method, all population members are assumed to have an equal chance of being selected as a research sample. One thousand two hundred twenty-nine elementary school students in this study spread across 82 regions from 34 provinces representing five major islands throughout Indonesia. The age categories of children in this study are as follows:

Table 1
Student's age group

No.	Class	Grade	Child Age
1.	Lower Class	1	6-7 years
		2	7-8 years
		3	8-9 years
2.	Upper class	4	9-10 years
		5	10-11 years
		6	11-12 years

Elementary school children are divided into two categories, i.e., the lower class, which consists of grade 1 (6-7 years), grade 2 (7-8 years), and grade 3 (8-9 years), and the upper-class which consists of grade 4 (9-10 years), grade 5 (10-11 years), and grade 6 (11-12 years). While the number of participants at each grade level is as follows:
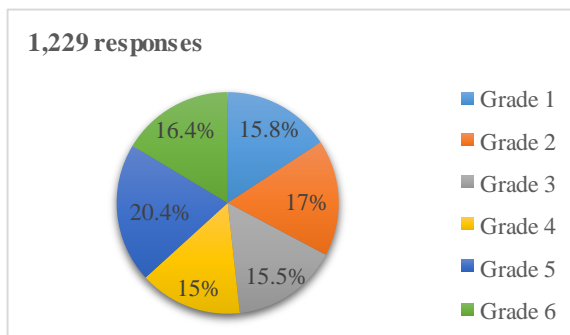

Figure 1
Distribution of participants by classs.

They comprised of grade 1 (194 students=15.8%), grade 2 (209 students=17%), grade 3 (190 students=15.5%), grade 4 (184 students=15%), grade 5 (251 students =20.4%), and grade 6 (201 students=16.4 %) (Figure 1).

The selected participants were elementary school children from several regions throughout Indonesia, a culturally diverse archipelago (Prasojo & Pabbajah, 2020) consisting of 34 provinces. The participant was netted online and reached all five major islands in Indonesia, i.e., Papua, Java, Sumatra, Sulawesi, and Kalimantan.

Data Collection

This study employed a survey technique to map students' learning loss risk. Surveys are conducted by distributing questionnaires (Google Forms) to some social media or online networks. Then, the data obtained from the survey was used to explore learning outcomes during online learning. The data explores students' difficulty in mastering the material, students' attitude during online interaction, and creativity impediments in school work accomplishment. The research began with a review desk discovering insights of learning experiences during the pandemic in various countries. Then, the data gained from the review desk activities were managed as the foundation to map the central issues of this research as well as the cornerstone for literature review writing.

This research was conducted using survey techniques and distributed online through social media such as WhatsApp, Facebook, Telegram, and Instagram. However, WhatsApp groups such as Indonesia Early Childhood Education Teacher Associations Group and Early Childhood Education Program Alumnae Group work prominently for the survey.

The survey was conducted in October 2021 involving colleagues, school networks, and teacher association networks. The participants were asked to complete a questionnaire through Google Form after confirming the attached consent letter. The Google form survey consisted of several parts i.e., questionnaire instructions, informed consent, personal data, and questionnaire. Parental consent or consent was carried out using Informed Consent. To ensure standardised ethical procedure, parental consent should be filled out prior to answer the questionnaire, thus the data obtained were rightfully approved and the result of the study will be low risk.

The Google form media was chosen for easy access purposes, including the wide range distribution, the speedy reaching, and the readability of the data. The data obtained were then grouped into student's region and grade level. It is expected that the extent of learning difficulties experienced by students can be mapped based on their region and class level.

Data Analysis Techniques

The data is then processed through three stages: data reduction, data display, and data verification, as done by Miles and Huberman (2010). This stage is adjusted to the research objectives to (1) map the forms of learning loss during online learning, by analysing at the data reduction stage. First, the restatement of the data obtained through the questionnaire answers from the Google Form. At this stage, researchers select data

and categorise the results of survey data according to research variables. (2) the purpose of the study is to analyse the factors and conditions that cause potential loss of learning during online learning, and data analysis with data display. Data analysis with a description technique is carried out to show patterns and trends from the survey data. Researchers describe and display the data contained in the form of graphic images and tables of survey results. (3) The objectives and the last stage, namely the implications of learning loss on children's personality by analysing the data, are interpreted to draw the meanings of the data collected. The entire data is read in a contextual framework to be able to analyse the significance of the data obtained and determine the final result of this study.

FINDINGS

This research finds that online learning during the COVID-19 pandemic brings a risk of learning loss for elementary school students in Indonesia. To understand the impact of learning loss on elementary school students, this research employs the flow of Bloom's Taxonomy theory, which involves three fundamental aspects, i.e., cognitive, attitude/affective, and skills/psychomotor. To begin, researchers first conducted a survey related to gadgets, media, and internet networks mainly used by students during online learning. The internet network used by students during online learning is displayed in the following picture:
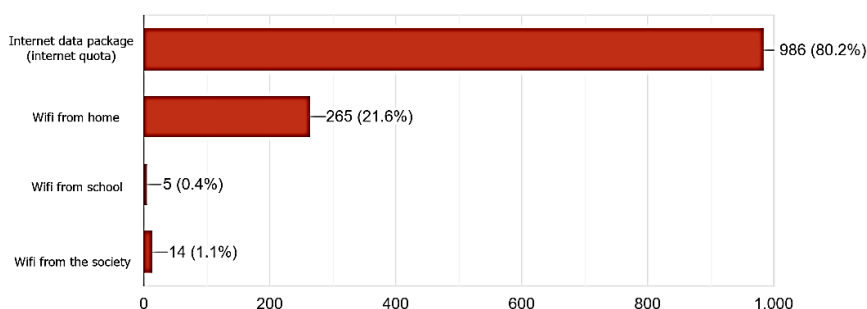
1,229 responses

Figure 2
Internet Network Used. 1. Internet data package (internet quota), 2. Wifi from home, 3. Wifi from school, 4. Wifi from the society.

It can be seen from figure 2 that internet data package (quota) was accessed predominantly by the students which accounted for 80.2%, with a total of 986 child respondents. Other results were 21.6% with 265 children using home wifi, 0.4% using wifi at school, and 1.1% using public facilities or community wifi.

The following figure depicts tools, digital media/technology used during the online learning which involves laptops, Handphone (HP), tablets, and PCs (Computers).
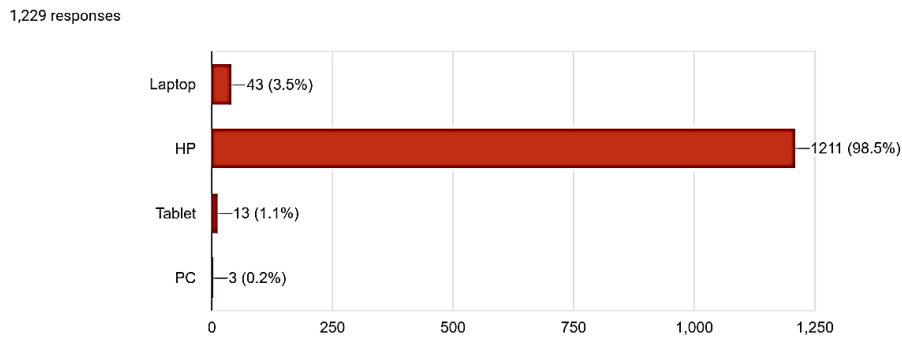
1,229 responses

Figure 3
Gadgets used. 1. Laptop, 2. Handphone (HP), 3. Tablet, 4. PC (Computer)

The data found that 98.5% participants used handphones, while 3.5% of them utilised laptop, 1.1% (13 students) preferred the use of tablets, and 0.2% (3 students) made use of computers. To deepen the survey on the use of technology, the survey examined gadgets ownership used by the students. The results of obtaining the ownership status of the gadget in the following picture:
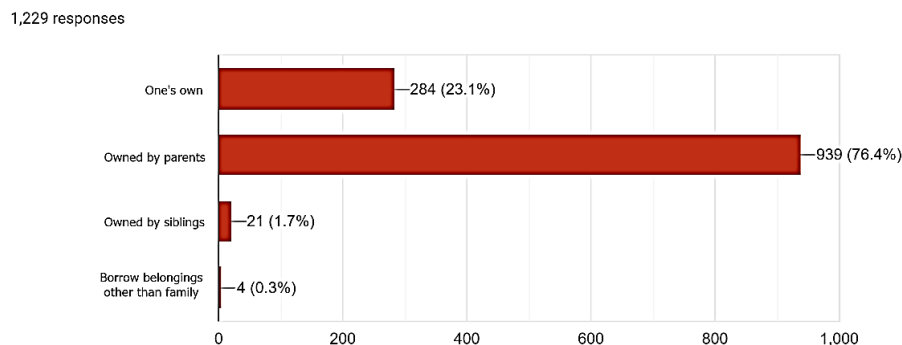
1,229 responses

Figure 4
Gadget ownership status. 1. One's own, 2. Owned by parents, 3. Owned by siblings, 4. Borrow belongings other than family

The survey picture above shows that as many as 939 children with a percentage of 76.4% with gadget ownership status, belonged to parents. While 284 children with a percentage of 23.1% with gadget ownership status belonged to children, the remaining 1.7% belonged to relatives and 0.3% borrowed belonging to people other than family.

Based on the above, it can be seen that elementary school students mainly accessed the internet network through data packages (internet quota) during online learning. The devices used were primarily handphones that were owned by their parents.

Furthermore, elementary school children also showed some evidence of learning loss in terms of knowledge development (cognitive), affective, and psychomotor.

Evidence 1: The loss of knowledge in learning achievement

The results showed that students experienced a knowledge achievement decline during the COVID-19 online learning. This is shown in figure 5 below:
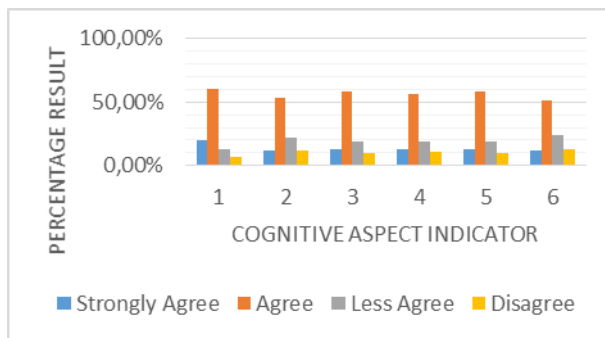

Figure 5
Bloom's knowledge/cognitive development: 1. Remembering (C1), 2. Understanding (C2), 3. Apply (C3), 4. Analyse (C4), 5. Evaluation (C5), and Creating (C6).

Based on figure 5, it can be grasped that students' learning loss in terms of cognitive aspects is elevated. Most students experienced difficulty acquiring and developing understanding while using technology in online learning. Table 2 displays the statements in detail.

Table 2
Children's survey results

Aspects	Indicators	No.	Statement	Child's Answer	Information
Knowledge	Remembering (C1)	1.	During online learning, I had difficulty remembering the subject matter that the teacher had delivered.	744 out of 1,229 students agreed.	60.5% of children agreed that they found it difficult to remember the subject matter delivered by the teacher compared to 6.7% of respondents who disagreed.
	Understanding (C2)	2.	During online learning, I had difficulty understanding the commands conveyed by the teacher, whether it was verbally, written, or in pictures.	661 out of 1,229 students agreed.	53.8% of children agreed that they found it difficult to understand the teacher's verbal instructions, writing, or pictures, compared to 12% of respondents who disagreed.
	Apply (C3)	3.	During online learning, I had difficulty applying materials delivered by teachers.	717 out of 1229 students agreed.	58.3% of the students agreed that they found it difficult to apply the material delivered by teachers compared to 9.8% of respondents who disagreed.
	Analysing (C4)	4.	I had difficulty distinguishing or connecting a concept of a subject matter to other subject matter during online learning.	699 out of 1,229 students agreed.	56.9% of the students agreed that they found it difficult to distinguish or connect between two or more subject matter compared to 10.7% of respondents who disagreed.
	Evaluation (C5)	5.	During online learning, I had difficulty concluding subject matters.	717 out of 1,229 students agreed.	58.3% of the students agreed that they found it difficult to conclude subject matters compared to 10.3% of respondents who disagreed.
	Creating (C6)	6.	I had difficulty accomplishing assigned creative work.	627 out of 1,229 students agreed	51% of the students agreed that they found it difficult to finish their work at home compared to 12.6% of respondents who disagreed.

Evidence 2: The loss of attitude in learning achievement

The results showed that the students lost their aspect of attitude during online learning. This is shown in figure 6 below:
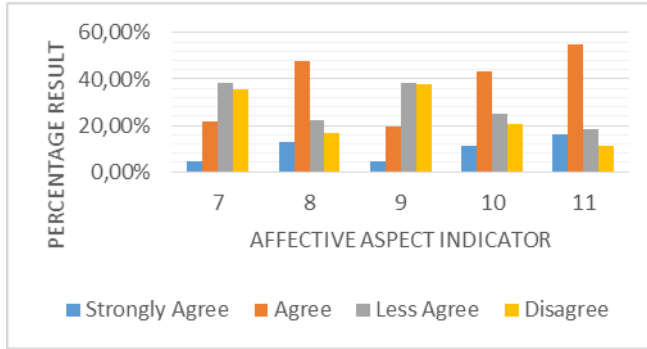
Figure 6

Bloom's attitudes/affective development: 7. Receiving (A1), 8. Responding (A2), 9. Appreciating (A3), 10. Organising (A4), 11. Characterisation (A5).

Based on Figure 6, learning loss in terms of students' attitude has been relatively high. The detail is shown in Table 3.

Table 3

Children's survey results

Aspects	Indicators	No	Statement	Child's Answer	Information
Attitude (Affective)	Accepting (A1)	7.	During online learning, I don't like opinions that are different from mine.	470 out of 1,229 students disagreed that they did not like different opinion.	38.2% of the students disagreed and 4.3% of respondents voted strongly in favour of disagreeing different opinion.
	Responding (A2)	8.	During online learning, I lacked confidence to answer or speak in front of teachers and other people.	589 out of 1229 students agreed that they feel less confident in answering or speaking in front of teachers and other people.	47.9% of the students agreed and other people compared to 16.9% of respondents chose to disagree.
	Appreciating (A3)	9.	During online learning, I thought that other people's tasks or works were not better than my work.	470 out of 1229 students disagreed that they think others' work were not better than theirs.	38.2% of the students disagreed and 4.4% of respondents chose strongly agree.
	Organizing (A4)	10.	During online learning, I had difficulty completing tasks given by teachers.	533 out of 1229 students expressed difficulty completing teacher's assignment.	43.4% of the students expressed difficulty completing teacher's assigned tasks compared to 20.6% of respondents who disagreed.
	Characterisation (A5)	11.	During online learning, I had difficulty working with my team.	673 out of 1229 students expressed difficulty working with team.	54.8% of the students agreed that they had difficulty working with team compared to 11.2% of respondents who disagreed.

Evidence 3: The loss of skills in learning achievement

The results showed that students experienced skills loss during online learning. This is shown in figure 7:
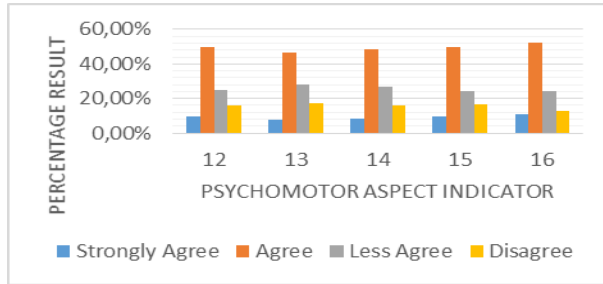

Figure 7

Bloom's skills /psychomotor development: 12. Imitation (P1), 13. Manipulation (P2), 14. Precision (P3), 15. Articulation (P4), 16. Naturalisation (P5)

The survey found that students' psychomotor declined significantly. The detail is shown in Table 4.

Table 4

Children's survey results

Aspects	Indicators	No	Statement	Child's Answer	Information
Skills (Psychomotor)	Imitation (P1)	12.	I often had difficulty imitating tasks exemplified by the teacher during online learning.	609 out of 1229 students expressed difficulty imitating tasks exemplified by teachers.	49.6% of the students agreed and 16.2% of respondents disagreed.
	Manipulation (P2)	13.	I had trouble re-creating the tasks the teachers gave me during online learning.	574 out of 1229 students expressed difficulty re-creating tasks given by teachers.	46.7% of the students agreed and 17.2% of respondents disagreed.
	Precision (P3)	14.	During online learning, I had difficulty practicing tasks given by teachers.	592 out of 1229 students expressed difficulty practicing the tasks given by teachers.	48.2% of the students expressed difficulty practicing tasks given by teachers compared to 16.1% of respondents who disagreed.
	Articulation (P4)	15.	During online learning, I had trouble repairing incorrect tasks.	613 out of 1229 students expressed difficulty fixing incorrect tasks.	49.9% of the students agreed and 16.5% of respondents disagreed.
	Naturalisation (P5)	16.	I often had difficulty finding ideas to create a project task during online learning.	645 out of 1229 students expressed difficulty finding ideas in making a project task.	52.5% of the students agreed they had trouble finding ideas to create a project task compared to 12.8% of respondents who disagreed.

DISCUSSIONS

The Causes of Learning Loss

Most Indonesian students use mobile phones and internet data plan networks to attend online learning. However, since the mobile phones used are mostly the parents' property, the students' opportunity and access to explore online materials is limited. The use of the gadget is likewise under close supervision as unrelated useless materials easily appear online. The students, parents, and teachers' lack of digital literacy together with scattered child-unfriendly internet content obviously hinder the learning process. On the other hand, students need creativity, freedom, and independence in utilising gadgets to learn. This paradox overshadows online learning during the pandemic.

The results of the survey data obtained several new findings and information related to online learning that is at risk of learning loss in elementary school-age children in Indonesia. The loss of learning in this study is reviewed from the indicators of Bloom's Taxonomy theory, namely in the aspects of knowledge (C), attitudes (A), and skills (P). From these three aspects, the results were obtained that children experienced a decrease in material mastery and learning outcomes.

The Loss of Knowledge: Unattainable Learning Curriculum

The first risk of learning loss can be seen in the decline of students' knowledge. The use of advanced technology such as video conferencing applications e.g., Zoom or Google Classroom, will not replace the role of face-to-face learning. This research found that cognitively (C1) the students' memory has been declining. Students find the difficulty to remember subject matters presented by the teachers during video conferencing. Learning through video conferencing reduces students' capacity to grasp the lesson, while direct learning is more indicative of spontaneous behaviour and natural feelings. Thus, direct face-to-face learning offers effortless circumstances which enable students to recall long-time memory. It is also more impressive compared to virtual online learning as it provides genuine meaningful interaction.

The second aspect of Bloom's cognitive development involves students' ability to understand conveyed meaning. The study found that most children had difficulty understanding teachers' instruction delivered orally, written, or by pictures during online learning. The students were not able to understand immediately teachers' explanations as a consequence the achievement of C2 remains low.

In addition to the lack of memory recalling and understanding, the research also found that the students were struggling in applying materials delivered by teachers. This condition delays the C3 aspect of Bloom's cognitive development. This may be the result of various issues such as limited device usage, inadequate technological facilities at home, and difficulty in acquiring materials for task accomplishment. Thus, facilities limitedness inevitably inhibits students' knowledge development.

Bloom's next cognitive development aspect is the C4 in which children are able to distinguish or connect several concepts. This research found that most students find

difficulties in determining as well as connecting diverse ideas involving several learning materials. The students were not in favour of completing tasks that include comparing, distinguishing, and connecting ideas, instead they preferred passive attendance of accepting and listening to teachers' instruction through video conference.

The C5 aspect of Bloom's cognitive development is creating personal work. Most students lose the ability to acquire creativity, innovation, and ideas. They are hardly able to develop ideas or create assigned individual work during online learning. The students have been indirectly conditioned to attend to a one-direction monologue delivered by the teachers through video conference. Moreover, they rarely leave and only remain inside the house due to the pandemic. Thus, the students were lack of ability for idea exploration.

The implication of these data findings related to learning loss is the decline in cognitive aspects or knowledge in children during the implementation of online learning. Children during online learning have difficulty understanding the subject matter, difficulty building ideas, difficulty exploring, and difficulty connecting the concept of a relationship. So from the results of the assessment, children experience a decrease in the aspect of knowledge. So that the curriculum applied in schools is not achieved in accordance with learning outcomes.

The Loss of Attitude: Lack of Teacher-Student Interaction

This research found that students experienced obstacles and decline in some aspects of attitude/affective development. The first declining aspect of attitude has been the A2 in which students suffered a loss of confidence. Speaking, delivering ideas, and answering teachers' queries during video conferences were burdensome activities. This passive attendance may occur because the students were accustomed to a situation in which teachers dominated the class by delivering one-way lectures. Active interaction between teachers and students did not occur, thus, the students joined the class inactively. Since the students were not habituated to assertiveness, they became unconfident and insecure in delivering opinions or ideas. The lack of speaking opportunities also influences students' sentence structure, language usage, and ideas arrangement.

The following affective aspect that has declined is the A4 in which students admitted that they rarely fulfilled the assigned tasks. The assignment given to the students were expected to be accomplished at home as they did not attend the class at school. However, the given tasks were poorly understood which led to students' reluctance to complete the tasks.

The subsequent affective development aspect that has decreased is the (A5) which relates to teamwork capacity. This aspect is prominent amongst other affective aspects since it deals with students' social skill which is vital for their future life. This research found that students experienced difficulties working in a group during online learning. The students did not have the opportunity to know each other since they rarely or never met in real life. This was worsened by the fact that in video conferences, speakers should take turns and only one can deliver words at a given time. This certainly reduces

the intensity of the students in socialising and interacting with each other. The students were not acquainted well with their fellows since the communication was built mainly through video conferences. Therefore, it is necessary to build students' teamwork capacity to facilitate the development of social attitudes such as empathy, sympathy, tolerance, etc.

The findings of this data related to learning loss are that children lose aspects of affective variables. The attitude or affective aspect indicates the child is lacking in showing attitudes according to the five affective aspects of Bloom's Taxonomy. Some things are triggered by the lack of interaction between teacher-student and student-student. The social attitude of the child while at home is only with the closest family. During online learning, a difficult job for the child is to work together. It is because the child does not meet other people in person. So that children during the COVID-19 pandemic lose many affective aspects or attitudes.

The Loss of Skills: School Closures Hindered Practicums

The final aspect of Bloom's Taxonomy is the skill or psychomotor aspect. This research found that the students lost six aspects of skills following Bloom's taxonomy. The first aspect is Psychomotor 1 (P1) which maintains that students are able to imitate teachers' behaviour. However, this research found that most students had difficulty imitating tasks exemplified by the teachers. The students were struggling in following the teachers' rules and learning stages which resulted in the deficiency of students' ability to imitate.

The second aspect of Bloom's taxonomy is manipulation or Psychomotor 2 (P2). This manipulative ability includes students' capability to build, apply, and recreate assigned works. However, this study found that students worked hard in manipulating the given tasks or assignments. This is because online task demonstration through video conferences often impedes students' comprehension. Unclear cameras, troubled sound, unstable connections, and even unavailability of gadget devices may be obstacles to students' understanding. Nonetheless, the use of technology certainly has a significant impact on students' psychomotor development.

Subsequently, Bloom's third aspect of psychomotor development includes the aspect of precision in which students focus on generating accuracy in completing given tasks. This research found that the students' precision characteristic has lowered. They had problems completing the assigned work correctly and adequately.

The following aspect is (Psychomotor 4) in which students are able to associate different skills and are able to work according to a predefined pattern. However, this research found that students had difficulty in combining, interacting, and modifying assigned tasks or works. In this case, the students experienced a decrease in creativity and innovative ability. Developing ideas to combine several skills by referring to outline patterns has been challenging work for the students. Moreover, the students were less responsive, slower, and more easily perplexed on the required tasks.

The ultimate aspect of Bloom's psychomotor development is naturalisation (Psychomotor 5). During online learning, students were rarely able to create innovative work. Most students admitted that it was difficult to develop ideas to design and create novel work due to their less imagination and creativity. This was triggered by students' habit of focusing only on video conferences which delivered theoretical resources rather than practice. Therefore, the students' skills in creating novel innovative works were decreasing.

Based on the findings of the above results, it can be concluded that the child experiences a loss and decrease in psychomotor aspects. This was triggered because many practical tasks had to be done at home, not in schools as a result of school closures during the COVID-19 pandemic. Practical work at home has obstacles such as lack of facilities, lack of instruction, and incomplete learning media. Unlike in schools, schools have complete equipment and some teachers have competence in teaching children according to the subject matter. Meanwhile, the parent at home is not a teacher who has a broad understanding of the child's subject matter. So that the decline in psychomotor aspects occurred during online learning carried out due to school closures during the COVID-19 pandemic.

CONCLUSIONS

Besides positive effects on strengthening students' digital literacy, online learning has also brought about a negative influence on students, which is the risk of learning loss. This study found that the risk of learning loss occurs in terms of students' knowledge, attitude, and skills. Some underlying factors that may cause the risk were limited devices and use of gadgets, lack of social interaction and communication between teachers and students, and less opportunity for task completion mentoring.

Various obstacles found by the students during online learning have led to a decreased understanding of the materials, reduced achievement, increased risk of problematic social attitudes, and lowered skills. Referring to the stage of concrete operational development, elementary school-aged children are necessary to be provided with direct assistance and role model from the adult, especially teachers, during learning. Based on the results of this study, it can be understood that online distance learning has caused a decline in students' social interaction. Furthermore, it will be dangerous for students' future if it occurred for an extended time.

Learning loss in Indonesia generally occurs due to ineffective teaching. Looking back to the period prior to COVID-19 pandemic, Indonesian students had often experienced learning loss. The government's policy on the implementation of online learning has further aggravated the ineffectiveness of the teaching and learning process. The primary reasons are teachers' technological illiteracy and teachers' confusion about the government's policies which were not relevant to Indonesian circumstances. Meanwhile, this research focuses on the consequences of learning loss during the COVID-19 online learning based on the perspective of students' abilities and skills.

This research used a survey method with a large number of participants that in-depth interviews for data confirmation could not be conducted. At least two aspects need to be developed from this research, the first is the need to deepen the data with observation and in-depth interviews and the second is the need to compare whether learning loss due to COVID-19 online learning also occurs in early childhood education, high school, and college levels. Thus, a more comprehensive and in-depth picture of the risk of learning loss during online learning can be obtained. At the same time, various right-on-target policies can be formulated.

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