The Impact of Learning Loss due to Family Income Factors on Students' Achievement during the COVID-19 Pandemic

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Abstract: The purpose of this study is to examine online learning during the pandemic period from the learner's economic standpoint. Seeing how far family income influences student learning achievement from the perspective of mastering English. The data is derived from English academic achievement and a questionnaire focusing on students' economic situations, and it is analyzed using the SPSS version 23 application. After being determined to be homogeneous and normally distributed, the data was collected and analyzed to test the hypothesis using R Square and ANOVA techniques. The results show that family economic factors influence Riau University students' English proficiency as much as 69.7 % in 2021 during the COVID-19 pandemic which may result in learning loss for the students.

Abstrak: Tujuan dari penelitian ini adalah untuk mengkaji pembelajaran online selama masa pandemi dari sudut pandang ekonomi pelajar. Melihat sejauh mana pendapatan keluarga mempengaruhi prestasi belajar siswa ditinjau dari penguasaan bahasa Inggris. Data berasal dari prestasi akademik bahasa Inggris dan kuesioner yang berfokus pada situasi ekonomi mahasiswa, dan dianalisis menggunakan aplikasi SPSS versi 23. Setelah ditentukan homogen dan berdistribusi normal, data dikumpulkan dan dianalisis untuk menguji hipotesis menggunakan teknik R Square dan ANOVA. Hasil penelitian menunjukkan bahwa faktor ekonomi keluarga mempengaruhi kemampuan bahasa Inggris mahasiswa Universitas Riau sebesar 69,7% pada tahun 2021 pada masa pandemi COVID-19 yang dapat mengakibatkan hilangnya kemampuan belajar mahasiswa.

A. Introduction

According to the most recent forecasts, Covid-19, the superstorm that wrecked the world economy last year, is expected to do so once more in 2021. In an article published on October 1, 2021, (Worldometers.info, 2021) stated that the daily number of positive Covid-19 tests had risen to more than 480 thousand, bringing the total number of people infected by the virus to 239 million, with more than 4 million deaths as a result of the infection.

Like many other developing countries, Indonesia is highly vulnerable to the Covid-19 outbreak, which has spread throughout the world (Barbier & Burgess, 2020). A huge economic impact is expected, with the possibility of triggering a global recession as a result of the situation. According to the "The World Economic Outlook" (IMF, 2021), the global economy was growing at a negative 3.5 % rate by 2020, which is worse than the rate of growth experienced during the global financial crisis of 2009 and the Asian monetary crisis of 1998 combined. Economic ramifications are also expected to be severe, according to predictions.

To halt the spread of the virus, countries worldwide implemented stringent measures such as complete or partial lockdowns, social distance rules, and curfews. To minimize the risk of people infecting one another with Covid-19, areas where humans contact frequently. Restriction of civic activities and enforced social separation — dubbed Pembatasan Social Berskala Besar (PSBB) in Indonesia — have wreaked havoc on the economy. Indonesia's unemployment rate surged to 6.26 percent in the first quarter of 2021, up from 4.94% a year earlier, owing to the economic slowdown brought about by the coronavirus outbreak. Unemployment increased by 1.82 million to 8.75 million. Meanwhile, employment decreased by 2.23 million to 131.06 million, with the highest declines in transportation and warehouse (-0.30 percent) and accommodation and food services (+1.20%) (0.34%). In the meantime, the labor force participation rate fell to 68.08% in the first quarter, down from 69.21% a year before (Statistik, 2020).
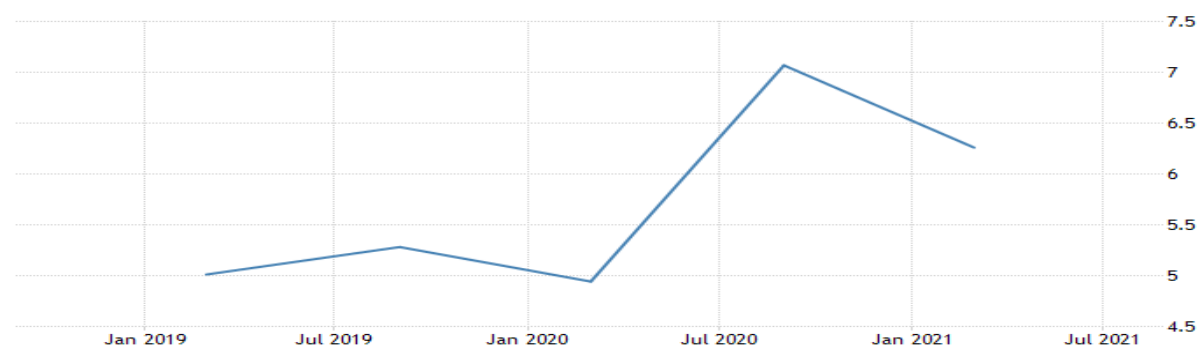

Figure 1. Unemployment rate

After winning the 2019 presidential election, President Joko 'Jokowi' Widodo firmly revealed his plan for 'Indonesia Emas 2045' (Golden Generation 2045), setting a goal for Indonesia to become one of the world's top five economies (Bappenas, 2019). However, the pandemic of COVID-19 has dramatically changed the country's growth trajectory — and possibly its long-term development route toward that aim. COVID-19 precipitated an ongoing economic crisis, resulting in job losses, decreased earnings, and an increase in the number of people living in poverty (Richard V. Reeves and Jonathan Rothwell, 2020). This preliminary evidence indicates that not only will the crisis have an immediate impact, with low-income workers suffering more than high-income workers, but that the current cohort

of students' learning loss will have a long-term negative effect on their earnings, which will be felt over the course of their lives.

Globally, educational institutions closed their doors in 2020 due to the COVID-19 epidemic. The pandemic has wreaked havoc on educational systems worldwide, affecting 94% of pupils in more than 190 countries on all continents (Fiscal policy Agency-Ministry of Finance, 2020). To continue delivering education, educational institutions needed to react swiftly and transition to online learning. Under these worldwide conditions, educational institutions were unable to continue operations. As a result, alternate learning methods were adopted, such as the utilization of online learning platforms available to the entire academic community. This approach of instruction, which incorporates electronic equipment and information technology, was novel to the Indonesian educational system.

According to prior research (Rapanta et al., 2020), it is difficult to differentiate between classroom-based and online education because both are considered "heterogeneous." There are, however, advantages and disadvantages to this subject (Mukhtar et al., 2020); online learning is viewed as a supplement to traditional learning and a means of increasing student satisfaction and cost-effectiveness (Sadeghi et al., 2014), but it does not appear to be a substitute for the classroom environment, as students struggle to acquire the same amount of knowledge as they would in a traditional environment (Zhang et al., 2007).

A well-structured and coordinated lesson plan, technological abilities, instructional materials, early preparation, and experience teaching online are all necessary components of a successful online course. Additionally, studies demonstrate that kids who are isolated experience a range of challenges, including a lack of desire and access to appropriate learning environments (Bao, 2020). If students are having difficulty, faculty staff can ascertain whether they require assistance by seeing and reacting to them and attempting to take control of the situation, which is not always achievable with online learning.

There is a direct correlation between a student's upbringing and future academic success. For the duration of the epidemic, researchers looked at the relationship between students' academic achievement and their family's income or poverty condition. Considering that the coronavirus pandemic and its effects are still being felt in Indonesia, it's critical to look at how economic and social changes are affecting schooling.

The study's purpose is to find out how much income and poverty affect university students' academic performance. This study will look at how income and unemployment have changed in Indonesia after establishing correlations between economic variables and academic performance. Accordingly, the study's original hypothesis was that wealth and educational attainment have high correlations, as did poverty and education.

As a result, the following research concerns will be addressed in this study: To begin, how substantial are the statistically significant disparities in academic achievement across pupils from various socioeconomic backgrounds? Second, is there a correlation between academic achievement and family wealth among students, and if so, what is the strength of the correlation? Finally, is there a correlation between poverty and academic performance among pupils, and if so, how strong is that correlation?.

B. Method

The study employs a simple random sampling technique, with a sample size of 139 Riau University students. Students completed a questionnaire in the form of a google form that was distributed via the Whatsapp application in this study. Prior to distribution, the

questionnaire underwent validity and reliability tests to ascertain its accuracy and precision, which were then analysed using the SPSS version 23 application. The hypothesis test was conducted after the normality and homogeneity tests were passed. The following hypotheses are being considered: English academic achievement among students of different family incomes; The effect of the family income on student learning loss during the pandemic; and Learning loss affect the categories of academic achievement of the students during pandemic.

C. Result and Discussion
Normality and Homogeneity Test

The normality distribution test, as defined by Adam Kolkiewicz, Gregory Rice, n.d. (2021), is a test that determines whether or not the data has a normal distribution. There are several methods for determining the data's normality. They are classified into two types: graphical and statistical. The Kolmogorov-Smirnov Test is a popular statistical technique. The One-Sample Kolmogorov-Smirnov test with SPSS was used to determine the data's normality. The following is the analysis:

Table 1. One-Sample Kolmogorov-Smirnov Test

		X	Y
N		139	139
Normal Parameters,b	Mean	11.4173	411.6115
	Std. Deviation	2.39534	45.50450
Most Extreme Differences	Absolute	.113	.110
	Positive	.111	.104
	Negative	-.113	-.110
Kolmogorov-Smirnov Z		1.327	1.296
Asymp. Sig. (2-tailed)		.059	.070

a. Test distribution is Normal.
b. Calculated from data.

According to the table 1, the Asymp. Value. Sig. (2-tailed) on both variables is greater than 0.05. It denotes that the data for both variables are normally distributed. Furthermore, it is frequently necessary to determine whether a set of data is homogeneous before applying any statistical technique to it. Data from a single population are used to generate homogeneous data (Gorbunova & Lemeshko, 2012). In other words, for the entire time period of the sample, all external processes that could potentially affect the data must remain constant. The researcher used SPSS's Homogeneity of Variances function to determine the data's homogeneity, as shown below.

Table 2. Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
1.696	1	137	.195

Table 2 indicates that the variance of the group is identical (P-value = 0.195), indicating that the data from this study are homogeneous, as the significance level (P-value) is greater than 0.05.

English academic achievement among students of different family incomes

The coefficient of determination (R Square), also known as R2, is defined as the independent variable's (X) contribution to the dependent variable's (Y) (AKOSSOU, 2013). In other words, the R2 value can be used to predict and determine the extent to which family economic factors influence the English proficiency of Riau University students in 2021 during the COVID-19 pandemic.

Table 3. Model Summary**,** The Extent of Family Economic Factors Influence the Students' English Academic Achievement

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.773 a	.697	.694	28.97676

a. Predictors: (Constant), X

The R Square value obtained is 0.697, as shown in Table 3. Based on this value, it can be concluded that the X variable has a 69.7 percent effect on the Y variable. This figure indicates that the variable family economic factor has a 69.7 percent effect on the variable learning loss of students. The remainder (100 percent -69.7 percent = 30.3 percent) is influenced by variables outside of this regression equation or variables that are not investigated.

The effect of the family income on student learning loss during the pandemic

To determine the significance of the effect of family income on student learning loss during the pandemic, the ANOVA test was used. Because it requires a normal distribution on the dependent variable per treatment or a normal distribution on the residuals, ANOVA is one of several types of parametric tests. This normality requirement assumes that the sample was drawn at random and can represent the entire population, allowing the research findings to be generalized (Hahn, 2017).

Table 4. The ANOVA Test on the Effect of Family Income on Students' Learning Loss during Pandemic

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	115689.917	1	115689.917	93.199	.000
Within Groups	170061.105	137	1241.322		
Total	285751.022	138			

The P-value was calculated to be 0.000 at the 0.05 level of significance based on table 4 as a result, family income has a significant impact on student English academic achievement during pandemics.

Learning loss affect the categories of academic achievement of the students during pandemic

During the pandemic, descriptive analysis is used to determine how learning loss divides students' academic achievement levels. Descriptive analysis is a type of research data analysis that is used to test the generalizability of research findings based on a single sample. The activity of collecting, grouping, processing, analyzing, and presenting research data in a research sample group includes testing standard deviation, variance, data range, lowest value, highest value, total data, and research data average (Holcomb, 2016).

Table 5. Descriptive Analysis on How Learning Loss Affect the Typical Academic Achievement of Students during Pandemic

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
Low Impact	58	439.8451	36.33953	4.31271	431.2436	448.4465
High Impact	81	382.1324	34.03725	4.12762	373.8936	390.3711
Total	139	411.6115	45.50450	3.85964	403.9798	419.2432

According to the table 5, 58.3% (81) of students have a low TOEFL score, with an average score of 382.13, as a result of their high exposure to learning loss. Meanwhile, with an average TOEFL score of 439.84, 41.7% (58) of the remaining students were classified as having low exposure to learning loss. Unfortunately, neither of these groups achieved the minimum TOEFL passing score of 450 required by the University of Riau.

Participants' educational and personal experiences were exposed as a result of the COVID-19 crisis, according to the findings of this study, which indicated a variety of consequences for them. Given the fact that little research has been done to investigate the 'lived' experiences of college students during this pandemic, and that online learning may not be a one-time occurrence due to the lack of an active treatment, this study may provide some new insights and implications to consider as we move forward with our research.

In order to address the challenge domain in this study, students were asked to respond to Likert scale and an open-ended question (mention any challenges and difficulties you faced during online education). The lack of face-to-face interaction was found to be the most significant source of learning loss for the students. As a result, the lecturer's instructions to the students were widely misunderstood. According to the Education Trust (2020) poll, even when lecturers made themselves and their instructional materials available online, many students lacked the ability to access online materials from home. Nearly half

of low-income families and 42% of average families did not have enough ICT devices at home (Lake, R., Dusseault, 2020). As Mukhtar points out, students' limited access to electronics and the internet is frequently emphasized in studies on online learning in developing nations, which is understandable given their circumstances (Mukhtar et al., 2020).

In addition, they faced difficulties due to insecurity and frequent power outages in their community, as well as their inability to afford internet service fees. They understood that having reliable energy in their village would make e-learning more accessible, allowing lecturers to continue their academic work and even conduct alternate classes to traditional classroom instruction. It is their belief that in the post-covid-19 period, in which uncertainties abound, the positive transformation will happen as a result of this. During online learning, low-income households faced severe technological challenges, including a lack of access to gadgets and a lack of consistent internet connectivity (Reich et al., 2020). Along with ability, online learning must consider students' financial circumstances, as well as the facilities and infrastructure that support online learning (Rusli et al., 2020).

Furthermore, even though the learning environment is virtual, the importance of physical space cannot be disregarded. A peaceful study environment with the same amenities as a classroom or library was a luxury that not everyone could make use of, and it was not available to everyone. According to the results of our poll, students who are taking online classes usually struggle to cope with their immediate environment.

Additional data corroborate the findings of this inquiry. According to Syauqi et al., (2020), students' perceptions on online learning varied. Only a minority of teachers believed that online learning enhanced student performance, and among other issues, learning resources were difficult to access. This finding is consistent with the study's findings, which indicate that lecturer-student relationships are not always optimal. On the other hand, students are not inherently opposed to the use of online education. When online learning is integrated and planned appropriately, the results are often favorable. According to the findings of a recent study, students respond positively to a variety of online learning platforms (Cakrawati, 2017); (Santi Maudiarti, 2018).

D. Conclusion

These preliminary projections reaffirm the fears of many educational leaders: lengthy absences from offline classes will almost surely have a detrimental effect on student success. This condition deteriorated further following the pandemic's economic impact.

Similarly, family economic, social, and cultural capital influences the adoption of everyday informal learning techniques that are more or less consistent with school reasoning, which rapidly amplifies disparities in learning chances and familiarity with what constitutes legitimate information. University lockout has not had the same effect on all children, and significant material and human resources will be required to guarantee that the most vulnerable children catch up. To restore students' socio-emotional and cognitive abilities, an educational emergency plan with social and educational objectives will be required. Individual and collective consequences of inaction are simply too great, unjust, and uneven. States and countries bear responsibilities for ensuring the right to education in these trying times.

This study, we believe, is part of a growing corpus of significant work that builds on past research to enable school leaders, policymakers, and academics to make critical evidence-based decisions following the implementation of COVID-19.

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