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Analysis Of Students' Responses To Face-To-Face Physics Learning Post Covid-19 Pandemic

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***Abstract**: This study aims to determine students' responses to face-to-face physics learning after previously conducting online learning at Singkawang City High School. The research used a survey method with descriptive data analysis techniques. The population in this study were tenth grade students at State High Schools in Singkawang City. The research sample was taken using cluster sampling technique. The data collection technique used in this study was a questionnaire, namely a questionnaire on responses to post-covid-19 pandemic physics learning with the help of Google Form media. The results showed that students' positive responses to face-to-face learning were higher than negative responses, with positive responses averaging 72% and negative responses only 28%. Based on the categories of Excellent, Good, Fair, and Poor, the highest percentage obtained was in the Excellent category, with 35%.*

***Keywords**: Responses, Students, Physics, Online*

Abstrak: Penelitian ini bertujuan untuk mengetahui respon siswa terhadap pembelajaran fisika tatap muka setelah sebelumnya melaksanakan pembelajaran daring di SMA Kota Singkawang. Penelitian ini menggunakan metode survei dengan teknik analisis data deskriptif. Populasi dalam penelitian ini adalah siswa kelas X SMA Negeri di Kota Singkawang. Sampel penelitian diambil dengan menggunakan teknik cluster sampling. Teknik pengumpulan data yang digunakan dalam penelitian ini adalah angket yaitu angket respon pembelajaran fisika pasca pandemi covid-19 dengan bantuan media Google Form. Hasil penelitian menunjukkan bahwa respon positif siswa terhadap pembelajaran tatap muka lebih tinggi dibandingkan dengan respon negatif, dengan rata-rata respon positif sebesar 72% dan respon negatif hanya 28%. Berdasarkan kategori Sangat Baik, Baik, Cukup Baik, dan Kurang Baik, persentase tertinggi yang diperoleh berada pada kategori Sangat Baik yaitu sebesar 35%.

Kata kunci: Respon, Siswa, Fisika, Daring

1. INTRODUCTION

The Covid-19 pandemic triggered by the coronavirus has caused upheaval worldwide. According to WHO, more than 200 countries, including Indonesia, have been affected. However, the Covid-19 virus pandemic that occurred in Indonesia in March 2020 has seen recent developments. Through Presidential Decree No. 17 of 2023, President Joko Widodo declared that the pandemic status of Corona Virus Disease 2019 (COVID-19) has ended and changed the factual status of Corona Virus Disease 2019 (COVID-19) to an endemic disease in Indonesia. Thus, the declaration of a public health emergency due to Corona Virus Disease 2019 (COVID-19) and the declaration of the non-natural disaster of Corona Virus Disease 2019 (COVID-19) spread as a national disaster have officially been revoked. This Presidential decision came into effect on June 21, 2023.

For the first time, this outbreak hit Indonesia in March 2020, and up until now, there have been at least 6,612,673 cases, with approximately 4,306 new cases reported daily. The

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Covid-19 pandemic has undoubtedly affected Indonesia in various sectors, particularly the education sector. The government issued a policy regarding the implementation of education during the Covid-19 emergency period (Circular No. 4 of 2020 on the Implementation of Education Policies during the Emergency Period of Covid-19 Spread). This circular mandated a shift from face-to-face learning to Distance learning or Online learning.

Distance learning is an educational system characterized by open, independent, and comprehensive learning utilizing technology (Sari et al., 2020). Distance learning is conducted outside of the traditional setting where the learning process does not involve direct face-to-face interaction between instructors and learners (Abidin et al., 2020). According to Pravat (2020), several issues related to distance learning, such as the availability of digital access, internet connectivity, and the ability to operate devices that appeal to students with disabilities and marginalized communities, must be addressed by the government. Lie et al. (2020) also argue that the distance learning process due to Covid-19 is perceived as less optimal because of various limitations such as limited internet access, teacher readiness, and student adaptation.

Student response is one of the important factors that determines the success of student learning. A lack of student response to the learning process will hinder the learning process. Positive student responses can be used as a benchmark indicating that students feel more comfortable with the instructional materials used in the learning process. Most of the students' attention will be focused on the learning process due to their interest in the instructional materials, and they will not quickly feel bored with the learning activities (Nugraha et al., 2013).

In the research conducted by Dafian Y. et al. (2022), it was concluded that student responses to online physics learning were not favorable because online physics learning was considered difficult and the time allocated by teachers to explain the material was very short, especially on the topics of quantities and measurements. The percentage in each category was as follows: the very good category received 2%, the good category 3%, the average category 16%, and the poor category 79%.

According to Dr. Muhammad Hasbi, Director of Elementary Schools at the Ministry of Education, Culture, Research, and Technology, in the webinar SMB: Recovering Education Through Face-to-Face Learning broadcast on the YouTube channel Kemendikbud.ri (14/07/22), most schools are believed to be well-prepared to conduct 100% face-to-face learning in the new academic year 2022/2023. This confidence is based on the extensive learning experiences of schools across Indonesia during the past two years of the

Covid-19 pandemic. Moreover, not only schools but also local governments have learned significantly about this matter. Nevly W. P. et al. (2021), face-to-face learning is a learning process that involves direct communication between teachers and students in a specific place without the use of virtual media. Nissa & Haryanto (2020) state that face-to-face learning is a type of learning where teachers and students communicate with each other in the same room at a real place (not virtually). Based on the above descriptions, face-to-face learning is a learning process in which teachers and students interact directly in a learning environment. Biroli (2022), the change in the learning system during the Covid-19 pandemic required a lengthy adaptation process. At the beginning of the pandemic, teachers, students, and parents were required to adapt to online learning. Similarly, now, the academic community is required to adapt to face-to-face learning. Dafian, Y. et al., (2022), Among the numerous challenges frequently encountered by students during online learning, one of them is difficulty in comprehending the material explained by the teacher, especially in subjects with numerous calculations and complex concepts, such as physics. Physics is perceived as one of the difficult subjects by the majority of students due to its abundance of calculations and intricate concepts.

With the exposition above, it is evident that students have undergone a transition in learning methodologies, from traditional face-to-face instruction pre-Covid-19, to the implementation of distance learning during the Covid-19 pandemic, and now a return to face-to-face instruction. This prompts researchers to investigate student responses to face-to-face physics instruction post the Covid-19 pandemic, under the title "Analysis of student responses to face-to-face physics instruction post Covid-19 pandemic."

2. METHODS

This type of research is a survey study. The population in this study consists of all tenth-grade students of SMAN Singkawang city, which according to the Basic Education Data for the year 2023, amounts to a total of 1,430 students. The sampling technique employed in this study is Cluster sampling. In other words, the researcher will group each public high school in Singkawang city based on districts and select a sample of one school from each district throughout Singkawang city.

To determine the sample size to be taken, the researcher employs the Krejcie and Morgan equation (1970), formulated as follows:

$$n = \frac{X^2.N.P(1-P)}{e^2(N-1)+ X^2.P(1-P)} \quad , \qquad (1)$$

With:

n = sample size

N = population size

X^2 = chi-square value

e = precision level expressed in proportion

P = population proportion

In the context of determining the sample size in this study, the error level is set at 5%, which means the minimum required sample size for this study is 304 students.

In this study, the data collection technique used is a questionnaire. The researcher utilizes a closed-ended questionnaire with a Guttman Scale. The Guttman Scale provides only two alternative answers (dichotomy) : Agree or Disagree. Thus, if the data is quantified, the values are only 0 or 1. Data obtained from the Guttman scale questionnaire can be categorized as nominal or ordinal scale (Priatna, 2008).

In this study, to determine students' responses to physics learning post the Covid-19 pandemic, categories are used in the form of Agree (A) and Disagree (DA) within statements to be answered by respondents later, with several calculation steps as follows :

a. Grouping each statement item and aligning them with their respective aspects.
b. Summing up the scores obtained from the statement items and aligning them with their respective aspects.
c. Calculating the percentage for each category using the following formula :

$$R = \frac{(s^+)+(s^-)}{s_{tot}} \, x \, 100\ \% \quad , \tag{2}$$

With:

R = Percentage of student responses to the questionnaire.

S + = Number of students who answered agree to positive statements.

S - = Number of students who answered disagree to negative statements.

Stot = Total number of students across all statements.

d. Categorizing the results of the percentage score of student responses.

Tabel 1. Percentage score of student response by criteria

No	Percentage score of student response	Criteria
1	85% ≤ R ≤ 100%	Excellent
2	70 % ≤ R < 85%	Good
3	50 % ≤ R < 70%	Fair
4	R < 50%	Poor

(Sukinah, 2013:10)

3. RESULTS AND DISCUSSION

The results of this study reveal the students' responses to face-to-face physics learning after the previous remote learning at public high schools throughout Singkawang city. The questionnaire results of student responses based on the schools under study can be seen in Table 2 :

Table 2. Respondents Based on School of Origin.

No	School of Origin	Percentages	Number of Respondents
1	SMA N 1 SINGKAWANG	19,4%	64
2	SMA N 2 SINGKAWANG	23,6%	78
3	SMA N 6 SINGKAWANG	20,3%	67
4	SMA N 7 SINGKAWANG	18,8%	62
5	SMA N 9 SINGKAWANG	17,9%	59
Total Respondents		330	

Based on the data from public high schools in Singkawang city, the researcher provided a questionnaire with two different sets of statements: positive statements consisting of 10 questions and negative statements consisting of 10 questions. Therefore, the total number of statements respondents need to answer is 20. The questionnaire was distributed via Google Forms with the research schedule on Thursday, May 2, 2024. Below is the data from the research results based on the questionnaire grid of student responses to face-to-face physics learning, which can be seen in Table 3.

Table 3. Blueprint of the Student Response Questionnaire.

No	Indicator	Percentages	
		Positive	Negative
1	Feeling pleased with face-to-face direct learning	75%	25%
2	The presence of concentration and focus on face-to-face direct learning	80%	21%
3	The presence of intrinsic willingness to actively engage in learning during face-to-face instruction.	66%	34%
4	The effort made to realize the desire to learn during face-to-face learning.	67%	33%

Based on the data from Table 3., across all public high schools in Singkawang, student responses to Indicator 1) Feeling happy about face-to-face learning in person received a positive response of 75% and a negative response of 25%. For Indicator 2) Having focus and concentration during face-to-face learning received a higher positive response, with 80%, and a negative response of 20%. Regarding Indicator 3) Willingness to actively engage in learning during face-to-face instruction received a positive response of 66% and a

negative response of 34%. As for Indicator 4) Effort made to actualize the desire to learn during face-to-face instruction received a higher positive response compared to the previous three indicators, at 67%, with a negative response of 33%. The data in Table 2 represents the results based on indicators. Below are the data and analysis results of the statements distributed to the respondents, as seen in Tables 4 and 5 as follows:

Table 4. Questionnaire with Positive Statements.

No	Positive Statements	Answer	
		Agree (+)	Disagree (-)
1	I am less enthusiastic about online learning.	70%	30%
2	I prefer face-to-face learning.	89%	11%
3	I find it easier to understand learning through face-to-face instruction.	94%	6%
4	During face-to-face learning, I exhibit increased activity levels.	89%	11%
5	During online learning sessions, I frequently exhibit reduced attention towards the instructor.	71%	29%
6	I perceive heightened diligence in task completion during face-to-face learning sessions.	92%	8%
7	During in-person learning, I consistently accomplish tasks within designated timeframes.	81%	19%
8	I exhibit increased confidence when responding to questions posed during face-to-face interactions.	69%	31%
9	During face-to-face learning sessions, I strive to complete tasks promptly.	96%	4%
10	During face-to-face learning sessions, I endeavor to enhance my understanding of the material presented by the instructor.	94%	6%
Average		**85%**	**15%**

In Table 4, which contains the questionnaire with positive statements, student responses are considered positive if they answer "Agree" and negative if they answer "Disagree." Based on the statement in point (1), 70% of the responses were "Agree," which is higher than the 30% "Disagree" responses. In point (2), "Agree" responses were much higher at 89%, compared to 11% for "Disagree." In point (3), the "Agree" responses were even higher at 94%, while "Disagree" responses were only 6%. In point (4), the "Agree" responses were 89%, and "Disagree" responses were 11%. In point (5), "Agree" responses

were 71%, while "Disagree" responses were 29%. In point (6), "Agree" responses were 92%, and "Disagree" responses were only 8%. In point (7), "Agree" responses were 81%, and "Disagree" responses were only 19%. In point (8), "Agree" responses were 69%, while "Disagree" responses were 31%. In point (9), "Agree" responses were very high at 96%, with "Disagree" responses being only 4%. In point (10), "Agree" responses were also very high at 94%, while "Disagree" responses were 6%.

Table 5. Questionnaire with Negative Statements.

No	Negative Statements	Answer	
		Agree (-)	Disagree (+)
1	I am more diligent in completing assigned tasks during online learning sessions.	43%	57%
2	During online learning sessions, I consistently complete and submit assignments on time.	51%	49%
3	I feel more confident when answering questions in online settings.	51%	49%
4	During online learning, I strive to complete assignments on time.	64%	36%
5	During online learning, I make more effort to comprehend the material presented by the instructor.	59%	41%
6	I find it easier to understand online learning.	21%	78%
7	I am more active during online learning sessions.	29%	71%
8	During face-to-face learning sessions, I often do not pay attention to the instructor.	27%	73%
9	I prefer online learning.	30%	70%
10	I feel less enthusiastic when face-to-face learning is resumed.	29%	71%

In Table 5, which contains the questionnaire with negative statements, student responses are considered positive if they answer "Disagree" and negative if they answer "Agree." Based on the data from the negative statements, point (1) received 57% "Disagree" responses, while 43% responded "Agree." In point (2), 49% of the responses were "Disagree," slightly lower than the 51% "Agree" responses. In point (3), 49% of the responses were "Disagree," slightly lower than the 51% "Agree" responses. In point (4), "Disagree" responses were 36%, while "Agree" responses were 64%. In point (5), "Disagree" responses were 41%, while "Agree" responses were 59%. In point (6), "Disagree" responses were much higher at 78%, while "Agree" responses were only 22%. In point (7), "Disagree" responses were 71%, while "Agree" responses were 29%. In point

(8), "Disagree" responses were 73%, while "Agree" responses were 27%. In point (9), "Disagree" responses were 70%, while "Agree" responses were 30%. In point (10), "Disagree" responses were 71%, while "Agree" responses were 29%.

With an average percentage of positive and negative responses from the 20 statements in Tables 3 and 4, the results show that positive responses average 72% and negative responses 28%. These are the results from the questionnaire with negative statements. Based on the results obtained from the questionnaire with both positive and negative statements, the percentage of student responses according to the criteria is shown in Table 6 as follows.

Table 6. Percentage of Student Responses Based on Criteria

. Percentage of Student Responses	Criteria	percentage results
$85\% \leq R \leq 100\%$	Very Good	35%
$70\ \% \leq R < 85\%$	Good	27%
$50\ \% \leq R < 70\%$	Fair	26%
$R < 50\%$	Poor	12%

Based on the results of the percentage of student responses shown in Table 4.5, the percentage for the 'Excellent' criterion obtained the highest percentage, namely 35%, and for the 'Good' criterion obtained a percentage of 27%, while for the 'Fair' criterion, it is almost the same as the 'Good' criterion, namely receiving 26%, and for the 'Poor' criterion, it obtained a relatively low percentage, namely 12%. From the data in Table 4.5, it is evident that the 'Excellent' and 'Good' criteria are higher than the 'Fair' and 'Poor' criteria.

Also based on the questionnaire data on the student response framework, in the first indicator, namely the feeling of pleasure towards face-to-face learning, there is a higher positive response. Students prefer face-to-face learning because they feel that explanations provided by the teacher in person are more effective and easier to understand, especially in physics lessons. Consequently, students prefer face-to-face learning over online learning. This aligns with the study conducted by Dafian Y. (2021), where positive statements were made for online learning and negative ones for face-to-face learning. The study found that most students dislike online learning due to unclear explanations from teachers, particularly in certain physics topics.

Moving on to the second indicator, the concentration and focus on face-to-face learning also received a high positive percentage. This is because students feel more focused when learning face-to-face as they receive more attention from the teacher compared to

online learning. This correlates with the research conducted by Dafian Y. (2021), which showed that students become unfocused during online learning.

Next, in the third category, the willingness to actively engage in learning during face-to-face learning also received a higher positive response. This is because students feel more confident when answering questions from the teacher directly, leading to a willingness to actively learn during face-to-face sessions compared to online learning. This is also consistent with Dafian Y.'s (2021) research, which indicated that during online learning, the majority of students lack confidence when answering questions from the teacher, resulting in less willingness to learn actively.

Moving on to the fourth indicator, the efforts made to realize the desire to learn online received a very positive percentage from students. This is because students make more efforts to complete tasks on time and to understand the material presented by the teacher. This also aligns with Dafian Y.'s (2021) research, which showed that most students do not like online subjects with complex calculations and concepts, leading to a lack of intrinsic motivation to learn.

From this data, the percentage of student responses with the highest criteria is "Excellent." Based on the data obtained from the questionnaire via Google Forms, it is evident that students feel that face-to-face learning is more effective than online learning.

There are many factors influencing why face-to-face learning is more effective. One of these factors is the numerous challenges students face when learning online, as explained in Dafian Y.'s (2021) research. One of the common challenges students encounter is difficulty in understanding the material explained by the teacher, especially in subjects with complex calculations and concepts, such as physics. Physics is considered difficult by most students due to its complex calculations and concepts. In addition to the difficulty in understanding the material, students also feel that the facilities during online learning are very limited and hinder the learning process, which is not as significant when learning face-to-face.

With the multitude of challenges during online learning, whereas during face-to-face learning, these obstacles are not felt by students, making the learning process much more effective and smooth when conducted in person, due to the minimal obstacles encountered by students.

4. CONCLUSIONS

Based on the data and discussion presented in the research findings, the following conclusions can be drawn:

a. Student responses during face-to-face physics learning are more positive compared to online learning.
b. Positive statements received a higher average at 72%, while negative statements received 28%.
c. In each category, an average of "excellent" was obtained, with percentages as follows: 35% for excellent, 27% for good, 26% for fair, and 12% for poor.

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