Teacher and Student Responses to Distance Learning in 11th Grade Physics Subject SMAN 37 Jakarta

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Abstract. Distance Learning Physics subject during pandemic has been impacted teacher and students. These impacts need to be studied aims to determine the resistance of distance learning particularly physics subject. This research method is quantitative descriptive, with purposive sampling technique. The population of this research is all student in XI MIPA SMAN 37 Jakarta and the sample are all student in XI MIPA 3 and XI MPA 4. The instrument of this research by used question questionnaire for teacher and statement questionnaire for student. The result of student response for each indicator are: 1) The Learning Planning is 76,3% in "High" category; 2) The Learning Process is 74,3% in "High" category; and 3) The Learning Evaluation is 72,8 in "High" category. There is a gap between teacher and student response, presence the perception differentiation among them in seeing distance learning process. This research can be used to analysis the impact of distance learning in student and to design the learning plan and process in the future.

Keywords: Student and Teacher Responses; Distance Learning; Physics Subject

1 Introduction

Based on a decree issued by the Minister of Education and Culture Number 4 of 2020, all educational institutes starting from PAUD, Kindergarten, SD, SMP, SMA, to the University level, the implementation of learning is carried out remotely (DL). Distance learning (DL) is learning that requires intermediaries to connect teachers and students in educational activities [1].

In accordance with the decree issued by the Minister of Education and Culture Number 4 of 2020 in its application, the implementation of distance learning (DL) (DL) implemented by schools must comply with the guidelines attached to the circular of the secretary general of the Minister of Education and Culture number 15 of 2020 concerning guidelines for the implementation of learning from home during the emergency period of the spread of the corona virus 19 from home. In addition, the Ministry of Education and Culture (Kemendikbud) also urges teachers to be able to present fun learning even though the activities are carried out from home. Learning is a process of educational activities carried out by teachers and students in the form of learning [2].

In terms of responding to this, the teacher must pay attention and consider the series of learning that will be applied later [3]. The learning series is the main part in the implementation of the learning process which includes planning, implementation and evaluation [4]. Planning is a learning program process that will be run by the teacher later during the learning process

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[5]. The plans designed are related to learning devices, learning resources, learning models, learning media, the time provided and used by students to learn. Implementation is an action in the form of a response from a prepared plan, namely the involvement of students in learning, both practicum and group discussions, teacher participation and the implementation of learning by the teacher. While evaluation is a benchmark that is used to determine and measure the planning and implementation of learning that has been carried out both in terms of student abilities, assignments and exams carried out by students [6].

Therefore, to ensure that the implementation of learning designed by the teacher is fun, it is necessary to analyze the process of implementing learning that has been applied during distance learning (DL), one of which is in Physics subjects. The analysis carried out aims to determine the extent to which the process of implementing distance learning (DL) is carried out and to measure whether or not it is in accordance with the circular from the ministry of culture and education for the implementation process.

2 Method

The type of research used is quantitative research with a descriptive design. With a quantitative descriptive design, the researcher will provide a description of the analysis of the distance learning implementation process (PJJ) in physics subjects and the researcher will present it in tabular form for each indicator. The research was conducted at SMA Negeri 37 Jakarta class XI MIPA. The sampling technique used is purposive sampling, namely sampling based on considerations of the class taught by the researcher during the distance learning process in class XI MIPA 3 and XI MIPA 4.

The data collection technique in this study consisted of a questionnaire for physics subject teachers who teach in class XI MIPA 3 and XI MIPA 4. Questionnaire for students. The questionnaire that was distributed through google from which has been carried out aims to find out information related to the process of implementing distance learning on physics subjects that have been implemented. Data analysis techniques in this study consisted of reducing data, presenting data and making conclusions.

In analyzing the teacher's questionnaire data, the data obtained from the questionnaire in the form of 26 questions will be analyzed by qualitative descriptive analysis, namely by describing the data obtained from the informants thoroughly. Data analysis will begin by distributing questionnaires through google from after that the researcher will make a transcript of the results of the questions by writing in words that match those filled in google from, then the researchers will make data reduction, namely by way of abstraction, namely taking data that is in context and ignore unnecessary data.[7]. While the questionnaire for students uses descriptive quantitative data analysis, where the researcher will describe with numbers that will be separated according to several indicators in order to get a conclusion[8].

$$P = \frac{F}{N} \times 100\% \qquad (1)$$

Information:
P = Percentage Number
F = Answer Frequency
N = Number of Frequency/respondents

Then categorized as below:

Table 1. Criteria for the Percentage of Student Responses

Percentage (%)	Category
81-100%	Very high
61-80%	High
41-60%	Medium
21-40%	Low
0-20%	Very low

The criteria for the percentage of student responses according to [9]. The following is a questionnaire instrument used in the study [4], [10]–[12].

Table 2. Questionnaire Instruments for Teachers and Students

Indicator	Observed aspects	Definition
Planning	Learning Media	Components of lesson plans planned by teachers; adjustment to the learning situation of PJJ
	Learning Resources	Materials or situations that are intentionally created and made to allow students to learn individually.
	Learning model	Guidelines in conducting learning to achieve learning objectives regarding the approach and syntax used.
	Learning Media	Tools used to assist the process of implementing PJJ learning
	The time provided and the time students use to study	Comparison of the time provided at school with the time students use to engage in learning
Implementation	Student involvement in learning	The forms of learning activities shown by students; cognitive, affective and psychomotor
	Practice	Learning activities in the form of observations or experiments
	group discussion	The course of learning activities carried out in group discussions
	Teacher Participation	Teacher involvement helps students in PJJ learning
	Implementation of learning by the teacher	The course of the learning activities carried out; learning evaluation
Evaluation	Student ability	Changes in students' abilities after participating in the learning process
	Assignment	Assignment method
	Evaluation	The form of assessment applied by the teacher

3 Result and Discussion

This research was carried out from August 02 to October 26, 2021. This research began when the researcher carried out field experience practice (PPL) at SMA Negeri 37 Jakarta. It

was started by delivering a permit for field practice experience (PPL) and a permit for observation (distribution of questionnaires) to the SMA Negeri 37 Jakarta school. The next stage in this study the researchers carried out PPL assignments for 12 weeks of meetings starting on August 02 to October 21, 2021. At the 12-week meeting the researchers held a brief discussion with the physics subject teachers of class XI MIPA 3 and XI MIPA 4 to find out when it could be implemented. research by distributing questionnaires.

After receiving confirmation regarding time, the next stage, namely on October 24, 2021, researchers distributed questionnaires to physics subject teachers in class XI MIPA 3 and XI MIPA 4 which contained 26 questions. Followed by distributing questionnaires for students of class XI MIPA 3 and MIPA 4 on October 26, 2021. The following are the results of data analysis obtained by researchers in the research conducted.

Teachers Response

Based on the results of data analysis from the distance learning implementation process questionnaire (DL) in physics subjects in class XI MIPA 3 & XI MIPA 4 for teachers, it was found that the implementation of the distance learning process (DL) went smoothly which lasted for 160 minutes for two meetings. in one week. In practice, the teacher applies the lecture learning model with the question-and-answer method assisted by the media google meet, you tube, pan tab and WhatsApp group. The learning resources used are textbooks, modules and worksheets, but the learning resources used such as textbooks and modules are only the teacher's handbook.

However, in the process of implementing distance learning (DL), which has been supported by various learning tools based on science and technology during their implementation [13], there are still gaps that cause learning to be less effective. The obstacles experienced are 1) limited time; 2) internet network difficulties; 3) students tend to be passive when learning takes place; 4) lack of implementation of group discussions; 5) cannot see the integrity of students in doing assignments and exams; 6) the achievement of student learning outcomes to achieve the KKM score is still in the less category.

Students Responses

Based on the results of data analysis from the distance learning implementation process questionnaire (DL) in physics subjects in class XI MIPA 3 & XI MIPA 4 the average acquisition of each indicator and its description are presented in tabular form.

Table 3. Results of the Percentage of Planning Indicators

	Statement	Respondent					F	Percentage (%)
		STS	TS	KS	S	SS		
A.	**Learning Device Aspect (+)**							
1.	The lessons designed by the teacher are in accordance with my potential and competence.	0	2	13	34	17	264	80
2.	PJJ learning process components, according to my needs.	1	2	15	31	17	259	78
								Average Percentage 79%
B.	**Aspect of Learning Resources (+)**							
3.	Learning resources used by teachers are easy to understand.	0	2	17	30	17	260	79
4.	Learning resources used by teachers are easy to access.	0	2	12	33	19	267	81
								Average Percentage 80%

C.	**Aspect of Learning Model (+)**							
5.	The approach used directs me to think critically and according to my needs.	1	3	24	28	10	241	73
6.	The learning model used is not boring and fun.	0	2	19	30	15	256	78
							Average Percentage 75.5%	
D.	**Aspect of Learning Media (+)**							
7.	The learning media used by the teacher is easy to understand and access.	0	1	11	35	19	270	82
8.	With google classroom media, I was helped in the PJJ learning process.	0	0	8	31	27	283	86
							Average Percentage 84%	
E.	**Aspects of the time provided and the time used by students to study (-)**							
9.	The implementation time of the PJJ learning is too short, so I am not satisfied with the learning delivered by the teacher.	4	21	23	15	3	190	58
10.	I agree if the PJJ learning time is adjusted to the direct learning hours.	1	11	21	25	8	226	68
							Average Percentage 63%	
						Average Percentage of Planning Indicators		**76.3%**

Based on the data in the table above, it shows that the planning indicator shows that the average value is 76.3% in the "High" category.

Table 4. Results of the Percentage of Implementation Indicators

	Statement	**Respondent**					**F**	**Percentage (%)**
		STS	**TS**	**KS**	**S**	**SS**		
F.	**Aspects of student involvement in learning (+)**							
11.	I actively ask questions during PJJ lessons	2	27	28	6	3	179	54
12.	During PJJ I pay attention, listen and respond to the learning of physics material explained by the teacher.	0	0	16	37	13	261	79
							Average Percentage 66.5%	
G.	**Practical Aspect (+)**							
13.	During the PJJ, I did a virtual practicum.	0	7	14	32	13	249	75
14.	The practical simulation system used is easy to operate and comes with a manual.	0	1	18	32	15	259	78
							Average Percentage 76.5%	
H.	**Aspects of Group Discussion (+)**							
15.	During my PJJ learning, it was organized in group discussions.	2	4	17	32	11	244	74
16.	I am active when asking questions in group discussion activities.	0	4	21	36	5	240	73
							Average Percentage 73.5%	
I.	**Teacher Participation Aspect (+)**							
17.	During PJJ learning the teacher guides me to ask questions.	1	4	15	32	14	252	76
18.	When I had problems in learning PJJ, the teacher helped me to solve the problem.	0	1	11	36	18	269	82
							Average Percentage 79%	
J.	**Aspects of Implementation of Learning by Teachers (+)**							
19.	Learning physics material is in accordance with my needs.	0	1	21	34	10	251	76
20.	The learning process of PJJ Physics is fun.	0	2	20	34	10	250	76

							Average Percentage 76%	
						Average Percentage of Implementation Indicators		**74.3%**

Based on the data in the table above, it shows that the implementation indicators show that the average value is 74.3% in the "High" category.

Table 5. Results of the Percentage of Evaluation Indicators

	Statement	**Respondent**					**F**	**Percentage (%)**
		STS	**TS**	**KS**	**S**	**SS**		
K.	**Aspects of Student Ability (+)**							
21.	During the PJJ learning, my learning outcomes increased above the KKM score compared to before the PJJ learning was carried out.	0	10	31	18	7	220	67
22.	During my PJJ study, I experienced an improvement in the learning process.	0	7	28	24	7	229	69
							Average Percentage 68%	
L.	**Assignment Aspect**							
	Statement (+)							
23.	I do the assignments given by the teacher on time	0	2	20	29	15	255	77
Statement (-)								
24.	I have difficulty in doing the assignments given by the teacher.	6	20	31	7	2	177	54
							Average Percentage 65.5%	
M.	**Assessment Aspect (+)**							
25.	Teachers assign grades fairly.	0	0	8	30	28	284	86
26.	The teacher gives an assessment according to the agreed aspect.	0	1	8	35	22	276	84
							Average Percentage 85%	
						Average Percentage of Implementation Indicators		**72.8%**

Based on the data in the table above, it shows that the evaluation indicator shows that the average value is 72.8% in the "High" category.

4 Conclusions

Based on the results of the data analysis that has been discussed, it can be concluded that the analysis of the process of implementing distance learning (DL) in physics subjects in class XI MIPA 3 & XI MIPA 4 at SMA Negeri 37 Jakarta obtained an average of 74.4% with the category " Tall". The following is a description of the categories for each indicator: 1) Planning with the “High” category; 2) Implementation with "High" category; 3) Evaluation with the category "High" and for more details can be seen in table 6.

Planning	Implementation	Evaluation	Average
76.3%	74.3%	72.8%	74.4%

This is because the implementation of learning is in accordance with the guidelines listed by the Ministry of Education and Culture although Even so, there are several statement items that get a percentage below 60% and it is possible that there is still a gap that the distance learning implementation process is less effective. Caused by 1) limited time; 2) internet network difficulties; 3) students tend to be passive when learning takes place; 4) lack of implementation

of group discussions; 5) cannot see the integrity of students in doing assignments and exams; 6) the achievement of student learning outcomes to achieve the KKM score is still in the poor category, this can be seen from the results of the questionnaire data analysis from the teacher.

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References

[1] F. Firman And S. Rahayu, " Online Learning Amid the Covid-19 Pandemic," Indones. J. Educ. Sci., Vol. 2, No. 2, Pp. 81–89, 2020.
[2] A. Pane And M. D. Dasopang, " Learning and Learning," Fitrah JL. review. Islamic Sciences., Vol. 3, No. 2, Pp. 333–352, 2017.
[3] F. Mu'awwanah, " Application of Active, Innovative, Creative, Effective and Fun Learning At Raudhatul Athfal Samudera Raya Banjarmasin," 2018.
[4] B. Bistari, " Concepts and Indicators of Effective Learning," J. Kaji. Learning and Science, Vol. 1, No. 2, Pp. 13–20, 2017.
[5] W. Sanjaya, Learning System Planning And Design. Kencana, 2015.
[6] A. D. Muryadi, " Program Evaluation Model in Evaluation Research," J. Ilm. Penjas (Research, Educator. and Teaching), Vol. 3, No. 1, 2017.
[7] A. Prabowo And H. Heriyanto, " Analysis of the Use of Electronic Books (E-Books) by Librarians in the Library of SMA Negeri 1 Semarang," J. Ilmu Perpust., Vol. 2, No. 2, Pp. 152–161, 2013.
[8] S. P. Putri, " Analysis of Student Learning Difficulties in Solving Adjustment Journal Problems in Economics Subjects," J. Neraca J. Pendidik. Dan Ilmu Ekon. Akunt., Vol. 2, No. 2, Pp. 97–107, 2018.
[9] M. B. Eryani And I. Munandari, " Efforts to Increase Learning Motivation through Classical Guidance Services with Experiential Learning Models for Class Xi Ak Smk Nu 01 Penawaja Adiwerna Students, Tegal Regency Academic Year 2020/2021."
[10] M. A. Maulyda, M. Erfan, And V. R. Hidayati, " Learning Situation Analysis During the Covid-19 Pandemic At SDN Senurus: Possible Learning Loss," Collase (Creative Learn. Students Elem. Educ., Vol. 4, No. 3, Pp. 328–336, 2021.
[11] Y. Wahyuningsih And E. Alexander, " Adaptive Personal Scaffolding in the Remedial Process to Achieve Complete Learning," In Prosiding Seminar Nasional Riset Dan Teknologi Terapan (Ritektra), 2021, Pp. E6–E6.
[12] W. Andriani, M. Subandowo, H. Karyono, And W. Gunawan, " Learning Loss in Online Learning During the Corona Pandemic," In National Seminar on Learning Technology, 2021, Vol. 1, No. 1, Pp. 484–501.
[13] M. Maemunah, " Education Policy in the Era of the Industrial Revolution 4.0," 2018.