

# MEASURING LEVEL OF STUDENTS' INDEPENDENT LEARNING IN DISTANCE LEARNING

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## Abstract

This study aims to determine the level of students' independent learning based on indicators of independent learning in terms of the process and management of students when they were studying. When students learn independently, it plays an important role in learning success and helping students obtain optimal learning outcomes. This research was used analytic descriptive research methods and survey techniques, used four indicators of independent learning in terms of the process and management of students when they were studying. The results showed that most of the students had independent learning in high to very high categories on the indicators of having initiative and motivation to learning, able to diagnose learning needs, able to determine learning targets and learning goals, and able to monitor, organize, and control learning. The results showed that almost all students had a level of independent learning in the high to the very high category on those three indicators.

**Keywords:** *independent learning; distance learning; indicators of independent learning*

## INTRODUCTION

The Covid-19 outbreak has hit the world since December 2019, including Indonesia, which confirmed the first case in March 2020. The Indonesian government issued various policies to break the chain of Covid-19 spread through instructions to work, worship, and study from home. The Ministry of Education and Culture of the Republic of Indonesia through Minister of Education and Culture Circular Letter No. 04/2020 issued instructions to carry out learning activities from home by implementing distance learning for all levels of education. Distance Learning is a teaching and learning process in which teachers and students were not in the same place so, interactions and learning activities were carried out using the help of technology, information, and communication (Moore & Kearsley, 2011). The same situation happened at the Vocational High School of Pertanian Pembangunan Negeri (SMK PPN) in Lembang, where distance learning activities were carried out by utilizing applications such as Google Classroom, Zoom, and Whatsapp.

The distance learning at SMK PPN Lembang applied to all study programs and all grade levels, including the Agribusiness Processing Agricultural Products (*Agribisnis Pengolahan Hasil Pertanian*, or APHP) study program, where the school expects that students would still be able to have the skills, knowledge, and attitudes as competent technical personnel in the field of education the processing industry of the food and beverage industry sub-sector in the field of agricultural production technology (SMK PPN Lembang, 2021). In the process of achieving this, APHP students were provided with basic skills program subjects and skill competency subjects, one of which was the subject of Basic Handling of Agricultural Products (*Dasar Penanganan Bahan Hasil Pertanian* or DPBHP), which was the basic subject of the expertise program that aimed to teach students to be able to know and understand characteristics of agricultural products, as well as proper handling and processing methods to maintain the quality of these materials.

The implementation distance learning in DPBHP subjects was carried out by the teacher providing material in the form of PowerPoints or Modules, as well as giving assignments in the form of questions and independent practicum activities which were expected to help build student competencies to be achieved. However, in the implementation, several problems occurred, such as there were some students who did not submit their assignments. The number was increased along with the increase of assignments given by the teachers. For example, from two students who did not submit their second assignments, it continued to increase until 23 students who did not submit their assignments on the sixth assignment. Another problem occurred was that 49% of students did not achieve the Minimum Completeness Criteria (Kriteria Ketuntasan Minimal or KKM) in the implementation of Mid-Semester Assessment (Penilaian Tengah Semester/PTS) on DPBHP subjects in the first semester of the 2020/2021 academic year. Doing assignments and exams by students in distance learning was important, because through these assignments and exams teachers could assess whether students have been able to understand the subject matter well or not. In addition, another problem has occurred was there were still quite some students who did not take part in learning activities through Zoom for no excuse, as many as 15-20 students, even though the subject matter was explained directly by the teacher.

Problems that occur in the implementation of distance learning in DPBHP subjects were closely related to student independent learning. Good independent learning was important for students to achieve success in learning and obtain optimal academic scores, especially in the implementation of distance learning, because when learning was done from home and there was direct supervision from the teacher. According to (Rohmat, 2014), obtaining good learning outcomes depended on the efforts made by students based on students' independent learning. (Khomsah & Muassomah, 2021) also explained that students' independent learning has a positive correlation with student learning outcomes. In the distance learning the high students' independent learning was needed to obtain good learning outcomes (Handayani, 2019).

Based on the description above, it was necessary to measure the level of learning independently, because independent learning plays a very necessary role in the success of learning and the acquisition of student learning outcomes, especially in current distance learning activities. Through measuring the level of independent learning, both students, teachers, and parents will know how the level students' independent learning would make it easier for students, teachers, or parents to maintain or increase student learning independently so they could help to improve learning success and student learning outcomes.

The measurement of the level of student's independent learning was carried out based on indicators of independent learning, where a student was considered to have good learning independently when they can comply with all the indicators of independent learning. In this study, the indicators were used as a reference in measuring the level of independent learning were indicators that were seen in terms of the process and management of learning carried out by students. The learning process and management carried out by these students influence the success of learning and the student learning outcomes. Because of that, when the learning process and management carried out by students in their learning activities could take place well, effectively, and efficiently, it could help students obtained better learning outcomes (Aliyas et al., 2019), (Mulyani, 2013), (Surasa et al., 2017). The indicators were seen in terms of the process and management of students when they were learning consist of indicators of having initiative and motivation to learn; indicators can

diagnose learning needs; indicators can determine learning targets and goals; as well as indicators to monitoring, organizing, and controlling learning activities (Sumarmo, 2004).

This study aimed to determine the level of student independent learning in distance learning of DPBHP subject at SMK PPN Lembang based on each indicator of independent learning in terms of the process and management of students when they were studying, so that it could be known more specifically about students' abilities in these indicators of learning independently.

## METHOD

The method used in this study was descriptive analytics (Arikunto, 2010). This study was conducted using a survey technique to find out information from the symptoms or events that occurred. The data obtained from the survey results was analyzed descriptively which was a way of describing the data that has been collected without making conclusions that apply to the public (Siyoto & Sodik, 2015). The sample in this study were 55 students of class X APHP at SMK PPN Lembang.

The research instrument used was in the form of a questionnaire with a research instrument based on indicators of independent learning in terms of the process and management of students when studying, that was:

**Table 1**  
**Research Instruments**

<b>Indicators of Independent learning</b>	<b>Statement Items</b>
Have initiative and motivation to learning	5
Able to diagnose learning needs	5
Able to determine learning targets and goals	4
Monitoring, organizing, and controlling learning	8

The validation of the research instrument was carrying out on the research instrument in Table 1 with the Content Validity Index (CVI) technique, validator assessed the suitability between the statement items and the independent learning indicator, that assessment was based on the measurement scale in the CVI.

**Table 2**  
**Measurement Scale in CVI**

<b>Measurement Scale</b>	<b>Explanation</b>
<b>1</b>	Irrelevant
<b>2</b>	Somewhat Relevant
<b>3</b>	Quite Relevant
<b>4</b>	Very Relevant

Source: Polit and Beck (2006)

Furthermore, the measurement value obtained from each statement item was dichotomized

**Table 3**  
**Dichotomized Measurement Scale**

Measurement Scala	Dichotomized
1	0
2	0
3	1
4	1

Source: Polit and Beck (2006)

The measurement scale that had dichotomized will be calculated for validity test by using the formula from (Bisson et al., 2013):

I-CVI = number of items with a relevant value from all experts/total number of experts. Lynn in (Hendryadi, 2017) explains that the statement items had considered valid when the I-CVI value was 1.00 or not less than 0.78.

### 1. Data Collection

The research instrument that had validated will give to the respondent by using Google Form, where the respondent will choose the answer that suits him/herself in each item of the statement. Answer choices had provided in the form of a Likert scale with a range of 1-4, from Very Not Suitable (1), Not Suitable (2), Suitable (2), and Very Suitable (4).

### 2. Data Processing

The data obtained had from the respondents were then processed by interpreting the research data into the category of research data to determine the level of student independent learning in each indicator of independent learning as seen from the process and management of students when studying.

**Table 5**  
**Research Instrument Answer Categories**

Score Interval	Categories
$X \geq \bar{X} + 1.SBx$	Very High
$\bar{X} \leq X < \bar{X} + 1.SBx$	High
$\bar{X} - 1.SBx \leq X < \bar{X}$	Low
$X < \bar{X} - 1.SBx$	Very Low

Source: Djemari (2008)

Information:

$X$  = score obtained by respondents in one indicator of independent learning

$\bar{X}$  = maximum score in one indicator of independent learning

$SBx$  = maximum standard deviation in one indicator of independent learning

Determination of the value of  $\bar{X}$  and  $SBx$  was done with the following formula: (Djemari, 2008).

$\bar{X} = 1/2$  (highest score + lowest score)  $SBx = 1/6$  (highest score – lowest score)

### 3. Percentage

The percentage calculation had done so that the data can be more easily understood (Sugiyono, 2007). The data in the form of percent represents the number of students who have independent learning in an interval of values in the category of research data. The percentage formula used was as follows:

$\% = X/n \times 100\%$

## INFORMATION:

X = number of respondents in an interval of data category values

n = total respondents overall

**RESULT AND DISCUSSION****1. Validity Test**

The results of the validity test obtained from the validation of research instruments carried out with the Content Validity Index (CVI) technique were as follows:

**Table 6**  
**Result of The Research Instrument Validity Test**

<b>Independent learning Indicators</b>	<b>Number of Statement Items</b>	<b>I-CVI</b>	<b>Validity</b>
Have initiative and motivation to learning	1	1,00	Valid
	2	1,00	Valid
	3	1,00	Valid
	4	1,00	Valid
	5	1,00	Valid
Able to diagnose learning needs	6	1,00	Valid
	7	1,00	Valid
	8	1,00	Valid
	9	1,00	Valid
	10	1,00	Valid
Able to determine learning targets and goals	11	1,00	Valid
	12	1,00	Valid
	13	0,33	Invalid
	14	1,00	Valid
Monitoring, organizing, and controlling learning	15	1,00	Valid
	16	1,00	Valid
	17	1,00	Valid
	18	1,00	Valid
	19	1,00	Valid
	20	0,67	Invalid
	21	1,00	Valid
	22	0,33	Invalid

The results of the validity test in Table 6. above showed that for the first indicator, having the initiative and motivation to learn from the five statements submitted for validation, that all of the statement items were declared valid. The validation results for the second indicator, which was being able to diagnose learning needs, show similar resulted to the first indicator from the five statements submitted for validation all of the five statements were declared valid. In contrast to the third indicator, which can determine learning targets and goals, out of the four statements submitted for validation, three statements were declared valid, and one statement was declared invalid. Meanwhile, the fourth indicator, monitoring, organizing, and controlling learning, showed that of the eight statements submitted for validity, there were six statements

The Level of Student Independent learning Based on Indicators Having Initiative and Motivation to Learn.

The results from measuring the level of students independent learning of class X APHP at SMK PPN Lembang in distance learning on DPBHP subjects based on indicators of having initiative and motivation to learning were as follows:

**Table 7**  
**Result of The Research Instrument Validity Test**

Interval of Score	Category of Independent learning Level	Amount of Student	Percentage(%)
$X \geq 16$	Very High	8	14,55
$13 \leq X < 16$	High	36	65,45
$10 \leq X < 13$	Low	8	14,55
$X < 10$	Very Low	3	5,45
<b>Total</b>		55	100

Information: X = students total score in this indicator

The resulted of measuring the level of student learning independence in Table 7. showed that most of the students already had the initiative and motivation to learn which tends to be high. However, there were still quite a lot of students who have low and very low initiative and motivation to learn, namely as many as 14.55% and 5.45% students or as many as eight students and three students.

The ability of students to have the initiative and motivation to learning will make students more enthusiastic and participating in learning, so it will help to improve learning activities and student learning outcomes. (Saefullah et al., 2013) and (Siregar & Nara, 2010) explained that when students have high initiative and motivation to learn, it will have a good influence on the acquisition of student learning outcomes.

This opinion was inversely proportional to the facts on the ground, even though the results of the measurements on this indicator indicate that students already have the initiative and motivation to learning which tend to be high, the acquisition of student learning outcomes in the distance learning of DPBHP subjects was less than optimal. it will be caused by the lack of students' application to the learning aspect before learning activities begin, as evidenced by that aspect which obtained the lowest score in measuring the level of learning independence based on this indicator. That values can be seen in Table 8.

**Table 8**  
**Result of The Research Instrument Validity Test**

Number of Statment	Statements	Amount of Student				Students Score in Total
		1	2	3	4	
P1	I took the initiative myself to read and study the material in the DPBHP subject.	0	15	34	6	156
P2	I am studied at first before distance learning of DPBHP subjects began.	5	29	21	0	126
P3	I repeat the material that has been learned in the distance learning of DPBHP subjects.	1	19	33	2	146
P4	I have a spirit that does not subside in studying DPBHP materials in distance learning	1	8	39	7	162
P5	I have good learning motivation to study DPBHP materials in distance learning	0	7	39	10	167

The learning aspect before learning activities began has included good study habits, so it would make students more ready to start learning. The readiness of these students would make it easier for students to adapt to learning activities and in receiving subject matter. This situation could make it easier for students to understand the subject matter that

helped students obtain more optimal learning outcomes. (Berutu & Tambunan, 2018) explained there was a positive and significant relationship between student study habits and the acquisition of learning outcomes. Thus, when effective study habits were not applied properly by students, it would have an impact on the acquisition of learning outcomes.

Therefore, needed an effort to improve students' abilities in applying aspects of studying before learning activities begin, which would increase the student learning outcomes, through strict discipline, guidance, and supervision from parents on student learning activities.

The results of measuring the level of learning independence of class X APHP at SMK PPN Lembang in distance learning on DPBHP subjects based on indicators of being able to diagnose learning needs were as follows:

**Table 9**  
**The Level of Student Learning Independence Based on Indicators of Being Able to Diagnose Learning Needs**

Interval of Score	Category of Independent learning Level	Amount of Student	Percentage (%)
$X \geq 16$	Very High	21	38,18
$13 \leq X < 16$	High	27	49,09
$10 \leq X < 13$	Low	5	9,09
$X < 10$	Very Low	2	3,64
<b>Total</b>		55	100

The results of measuring the level of student independent learning in Table 9. show that almost all students have high abilities in diagnosing their learning needs. That was evident from the small number of students who have low and very low abilities in diagnosing their learning needs, 9.09% and 3.64% or five students and two students.

The ability of students to diagnose their learning needs will have a good influence on their learning activities because students already know what things were needed in their learning activities so that learning activities can easier, which can help students more easily achieve learning success. and obtain optimal learning outcomes. Some experts also explain the same thing that when students can diagnose their learning needs, then students have high motivation to learn, where it will help increase the acquisition of student learning outcomes (Lestari, 2014), (Masni, 2017), (Siregar & Nara, 2010).

This opinion was inversely proportional to the facts on the ground, even though the results of measuring the level of independent learning on this indicator indicate that almost all students have high abilities in diagnosing learning needs, the learning outcomes obtained by students were less than optimal. That can be caused by a lack of knowledge of students regarding what DPBHP material has not been understood, as evidenced by this aspect which obtained the lowest count in measuring the level of independent learning based on this indicator. That values can be seen in Table 10.

**Table 10**  
**The Level of Student Independent learning Based on Indicators of Being Able to Diagnose Learning Needs**

Number of Statment	Statements	Amount of Student				Students Score in Total
		1	2	3	4	
P6	I know what DPBHP course materials were that I don't understand.	2	20	29	4	145
P7	I know how important it was to study the DPBHP material when distance learning.	0	7	31	17	175
P8	I know the learning objectives of studying DPBHP materials in distance learning.	1	11	29	14	166
P9	I know what things were needed to get good learning outcomes in distance learning on DPBHP subjects.	1	11	31	12	164
P10	I know what things were needs in carrying out tasks during distance learning on DPBHP subjects.	0	5	33	17	177

Lack of student knowledge about any subject matter that had not been understanding caused by students who were not serious in their learning activities, when studying the material students only read without understanding properly, so students cannot analyze which subject matter they were not yet understood. Whereas the attitude of students who study the subject matter seriously reflects the good student learning activities. (Hamzah & Mahmudah, 2012), explained that when students carried out their learning activities well, students' understanding of the subject matter will increase so that it has a positive impact on students earning outcomes.

In addition, it could also cause by students who do not know well their shortcomings in learning activities. According to (Nurmalasari & Jayanti, 2020), recognize individuals' weaknesses can develop and organize them for the better. Also included in learning activities, when students know the material that has not been understood, students will try to understand that material, so it can help them to obtain better learning outcomes.

Therefore, efforts were needed to improve student's abilities in knowing what subject matter they have not understood, which will help students get better learning outcomes, through students need to be more serious in learning and need to recognize abilities possessed in learning activities, whether it was a deficiency or an advantage.

The results of measuring the level of independent learning of class X APHP at SMK PPN Lembang in distance learning on DPBHP subjects based on indicators of being able to determine learning targets and goals were as follows:



**Table 11**  
**The Level of Student Independent learning Based on Indicators Of Being Able to Determine Learning Targets and Goals**

Interval of Score	Category of Independent learning Level	Amount of Student	Percentage (%)
$X \geq 10$	Very High	29	52,73
$8 \leq X < 10$	High	20	36,36
$6 \leq X < 8$	Low	6	10,91
$X < 6$	Very Low	0	0,00
<b>Total</b>		55	100

The results of measuring the level of student independent learning in Table 11 showed that almost all students had abilities that tend to be very high in determining their learning targets and goals. That was evident from the small number of students who had low abilities in determining their learning targets and goals, as many as 10.91% of students or six students, and no one student had a very low ability in determining their learning targets and goals.

The ability of students to determine their learning targets and goals will make student learning activities more focused and make students try their best in their learning activities so that learning targets and objectives can be achieved, which will improve the quality of learning and the acquisition of student learning outcomes. (Schunk, 1997) explains that students who have been able to set learning targets and goals will help them to achieve higher learning success so that it will have a good impact on student learning outcomes.

This opinion was inversely proportional to the facts on the ground, even though almost all students have abilities that tend to be very high in determining their learning targets and objectives, the learning outcomes obtained by students were less than optimal. That caused by the lack of students' ability in determining the target for completing the DPBHP learning assignments, as evidenced by this aspect which obtained the lowest score in measuring the level of independent learning based on this indicator. That values can see in Table 12.

**Table 12.**  
**The Level of Student Independent learning Based on Indicators of being able to Determine Learning Targets and Goals**

Number of Statement	Statements	Amount of Student				Students Score in Total
		1	2	3	4	
P11	I have a target of learning outcomes that must	0	5	25	25	185
P12	I have a final goal that I want to achieve after participating in distance learning on DPBHP subjects.	0	9	22	24	180
P13	I have a target in completing the tasks given during distance learning on DPBHP subjects.	0	7	29	19	177

The target of completing this task was very necessary for students had because it will easier for students to complete the tasks. Students can more easily manage the time of working on their learning assignments so it will make the assignments finished better and optimally. (Pranawa, 2017) explain that students who have individual targets in their learning activities, including completing their study assignments, will experience the development of abilities in learning and obtain better learning outcomes. When students have individual targets in completing their assignments, students will try their best to achieve these targets.

Therefore, efforts need to improve students' abilities in implementing aspects of having targets on the completion of learning tasks, which will increase student learning outcomes, through increasing students task commitment and through providing support from parents in students learning activities.

The Level of Student Independent learning Based on Indicators Monitoring, and Controlling Learning

The results of measuring the level of independent learning of class X APHP students at SMK PPN Lembang in distance learning on DPBHP subjects based on indicators of monitoring, organizing, and controlling learning were as follows:

**Table 13**  
**Level of Student Independent learning Based on Indicators of Monitoring, Organizing and Controlling Learning**

Interval of Score	Category of Learning Independence Level	Amount of Student	Percentage (%)
$X \geq 18$	Very High	34	61,82
$15 \leq X < 18$	High	17	30,91
$12 \leq X < 15$	Low	4	7,27
$X < 12$	Very Low	0	0,00
<b>Total</b>		55	100

Information: X = students total score in this indicator

The results of the measurement of the level of student independent learning in Table 13. show that almost all students have a very high ability to monitoring, organizing, and controlling their learning activities. That was evident from the small number of students who had a low ability to monitoring, organizing, and controlling their learning, as many as 7.27% of students or four students, and there was not one student who has very low ability to monitoring, organizing, and controlling their learning activities.

The ability of students to monitoring, organizing, and controlling their learning activities will make student learning activities much more organized and take place effectively and efficiently, where it can assist students in obtaining more optimal learning outcomes. (Asim et al., 2016) and (Schunk, 1997) also explain that students who have been able to monitor, regulate, and control their learning activities will obtain more optimal learning outcomes because students can use their study time more effectively and efficiently.

This opinion was inversely proportional to the facts on the ground, even though the measurement results show that almost all students have very high abilities in monitoring, organizing, and controlling their learning activities, the learning outcomes obtained by students were less than optimal. That caused by a lack of student awareness of the achievements that they have been achieved in distance learning for DPBHP subjects, as evidenced by this aspect which obtained

the lowest score in measuring the level of independent learning based on this indicator. That values can see in Table 14.

**Table 14.**  
**Level of Student Independent learning Based on Indicators of Monitoring, Organizing and Controlling Learning**

Number of Statment	Statements	Amount of Student				Students Score in Total
		1	2	3	4	
P14	I can manage my study time during distance learning for DPBHP subjects.	1	13	31	10	160
P15	I was able to choose a comfortable place to study during distance learning DPBHP subjects.	0	3	29	23	185
P16	I can choose learning facilities that were comfortable to use in distance learning on DPBHP subjects.	1	6	28	20	175
P17	I have notes to write down the list of tasks given by the DPBHP subject teachers	3	14	24	14	159

Students who were aware of the achievements they have achieved in learning activities were those who already know what things have been obtained and have not obtained in learning activities. (Kartika et al., 2015) explained that students who have realized the achievements they have obtained in learning activities were good at realizing their weaknesses and strengths in learning activities. Where these abilities were related to the students' metacognitive abilities themselves, so that when students' metacognitive awareness was higher, the student's learning outcomes will be higher ((Fitria et al., 2020).

Therefore, efforts were needed to improve student's abilities in implementing aspects of realizing what achievements they have achieved in learning activities, which will increase student learning outcomes, through students must be more familiar with their abilities, whether their strengths or weakness in their learning activities.

## CONCLUSION

The results of measuring the level of independent learning of students in class X APHP at SMK PPN Lembang in the distance learning of DPBHP subjects based on indicators of independent learning in terms of the process and management of students when they were learned showed that most students had a level of independent learning in the category of High to Very High in the indicators have initiative and motivation to learning. While the indicators able to diagnose learning needs; able to determine learning targets and objectives; and being able to monitor, regulate, and control learning. The measurement results show that almost all students have a level of independent learning in the High to Very High category on the three indicators.

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