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The Effectiveness of The Plant Tour Project Model PJJ 3 in One to Increase Statistical Literature Ability of High School Students on Plant Diversity

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Abstract

Plant Tour Project PJJ 3 in One is a project-based distance learning model (Pembelajaran Jarak Jauh/PJJ) in identifying plants and processing statistical identification results involving three information technologies, namely PictureThis, Padlet and Quizizz. The purpose of this study was to determine the effectiveness of the Plant Tour Project Distance Learning 3 in One model in improving students' statistical literacy skills on plant diversity material. Experimental research with the type of One-Group Pretest-Posttest Design involved 36 samples of class XII MIPA SMAN 6 Bogor randomly selected. The research procedure is, students go on a tour to identify plants in their living environment using the PictureThis Artificial Intelligence (AI) application. Students online in groups process the results of statistical identification through the stages of understanding, analyzing, interpreting, evaluating and presenting data. The group project results are sent to the web tool Padlet for joint discussion and gamification using Quizizz. The validity of the instrument was tested by statistics and expert tests. The results of the pre-test and post-test were tested using the Paired Sample t Test, one tail, 5% significance level. The results showed that 76.11% of students were actively participating in learning, [t count] was 6.91 > t table was 1.69 and there was an increase in learning outcomes by 53.46%, so it was concluded that the Plant Tour Project Distance Learning 3 in One model significantly effective in increasing students' statistical literacy skills on plant diversity material.

Keywords*: Keywords: *Plant Tour, PictureThis, Padlet, Quizizz, Statistical Literacy*

INTRODUCTION

The result of PISA *(The Programme for International Student Assessment,* a program initiated by countries that are members of the OECD *(Organisation for Economic Cooperation and Development),* shows that the performance in reading and mathematics of Indonesian students is curved downwards. Reading performance in 2018 fell back to 2001 levels after peaking in 2009, while mathematics performance fluctuated more in the early years of PISA but has been relatively stable since 2009. In 2018 Indonesia scored 371 for reading, the average reading score of all PISA participants 2018 is 487. Then for the field of mathematics, Indonesia got a score of 379, the average math score of all PISA 2018 participants was 489 (PISA 2018 Results (Volume I), 2019). This statement shows that Indonesia's achievement is still below the average in the fields of reading (literacy) and mathematics (numbering). Statistical literacy is a field that is closely related to

literacy and numeracy. Based on these problems, it is necessary for the teacher's intelligence to design lessons that can improve students' statistical literacy skills by integrating statistical literacy materials in learning.

One of the competencies that must be mastered by students in 21st century skills is statistical literacy competence. Gal (2002), said that statistical literacy competence is a person's ability to understand, interpret, and represent data, both in the form of tables and graphs. Statistical literacy is important for students because in the end students will be exposed to their roles as producers or consumers of data. As a data producer, one must understand how to present data so that the resulting data is legible and understandable by others. As data consumers, students are required to be able to read the data as well as understand the meaning contained in the data, both implied and expressed. Watson (2005) in (Sharma, 2017: 120) describes statistical literacy as transnumerative thinking where students will be able to understand and use different data representations to understand the world around them.

According to Garfield, J., and Ben-Zvi, D. (2008) in (Hafiyusholeh et al., 2015: 3). Statistical literacy is the main ability expected of citizens in a society that requires information, and is often also referred to as expected outcomes of schooling and as an important component of adult numeracy and literacy. Statistical literacy involves understanding and using basic language and statistical tools: knowing what basic statistical terms mean, understanding the use of simple statistical symbols, recognizing and being able to interpret different data representations.

According to (Abidin et al., 2020) "pembelajaran jarak jauh (PJJ) is learning that emphasizes self-study. Independent learning is organized systematically in presenting learning materials, providing guidance to students, and supervision for the success of student learning." According to Munir in (Abidin et al., 2020) "distance learning is when the learning process does not occur in direct face-to-face contact between the teacher and the learner. Communication takes place in two directions which is bridged by media such as computers, television, radio, telephone, internet, video and so on." During this PJJ period, there were various limitations in understanding Biology concepts and applying them in the real world. These limitations are partly due to the lack of face-to-face and real collaboration between teachers and students or students with students. These limitations cause boredom in students which can result in decreased learning achievement. This boredom can be overcome by teachers by packaging innovative learning using advances in information technology during the

In addition to limitations, the distance learning also has advantages, there are flexibility (Smedley, 2010), interactivity (Leszc-zyński et al., 2018; Wagner et al., 2008), and opportunities (Amer, 2007) to develop learning as stated by Adedoyin & Soykan (2020). Teachers should seize opportunities in this distance learning period to design more flexible and more interactive learning online.

The success of a study is strongly influenced by many factors. One of the factors is the learning model applied by the teacher. In this study, the learning innovation applied was a project-based learning model in biology subjects that was modified with mathematics lessons. Modifications are made by adding systematic statistical activities, namely student activities in collecting plant diversity data, organizing data, processing data, and concluding data. This ability is related to statistical literacy. Based on the results of research that integrating mathematical skills with biological content and reasoning in learning does not damage students' biology learning (Hester et al., 2014). Based on this statement, it is not a problem for biology teachers to apply mathematical skills in learning because it does not affect biology learning.

Brundiers and Wiek (2013) in (Guo et al., 2020:2) Guo said that project-based learning (PjBL) refers to an inquiry-based learning method that teaches learning knowledge by asking students to complete meaningful projects and develop real-world products. Krajcik and Shin (2014) in Guo (2020:2) indicate that PjBL is characterized by focusing on problems, focusing on learning objectives, teacher participation, collaboration between students, and the use of information technology.

The results showed that project-based learning, in which students in groups conduct statistical studies, together with the use of gamification (game play) as a technique to increase motivation, was designed to overcome low statistical literacy skills. The study found that all elements of

gamification were relevant to students' motivation and the learning process as well as students' statistical literacy achievement (Zhang & Fang, 2019).

Project-based learning in this research is called Plant Tour Project *PJJ* 3 in One. Plant Tour Project is an activity where students have a project to explore the environment in the neighborhood where they live to observe, identify, describe and document plant diversity using Artificial Intelligence applications. Then the students process the data statistically from the observations that have been obtained as a project product. At this stage, the students act as data producers, students must understand how to present data so that the resulting data is easy to read and understand by others. Project-based learning during this distance learning utilizes ICT to maximize learning outcomes. Researchers utilize three (3) kinds of information technology advances that are developing, so this model is called Plant Tour Project PJJ 3 in One. Three kinds of information technology used in this study are PictureThis, Padlet, and Quizizz.

Students face difficulty in identifying plants in the study of plant diversity. The key determination method is the conventional way to identify plants and it takes longer and inaccurate results. So in accordance with the times and rapidly developing information technology, PictureThis is the right solution to overcome these problems. PictureThis is a global mobile android app that uses artificial intelligence created to help with quick and accurate plant identification. Descriptions and classifications of plants that have been photographed using PictureThis can be accessed at a glance. PictureThis is able to identify about 500,000 plants ranging from flowers, leaves, fruits, cacti, even mushrooms. Based on research comparing three types of plant identifier applications, namely PictureThis, PlantSnap and PlantNet, it was stated that PictureThis had the best accuracy of 59%, PlantNet of 47% and PlantSnap of 5.8% (Otter et al., 2021). Based on the results of these studies, the researchers used the PictureThis artificial intelligence application as a medium in this study.

Padlet is a free online application that is best illustrated as an online whiteboard. Padlets can be used by students and teachers to post notes on the same page. Notes posted by teachers and students may contain links, videos, images, and document files. Padlet is device neutral, as it works on all internet-enabled devices, including PCs, laptops, tablets, smartphones. Padlets allow students and teachers to collaborate on sending data. In this study, Padlet serves as a medium to convey project results, including photos of identified plants, statistical results, video activities during the project and others. Based on the research, the use of Padlet to improve writing collaboration in students was obtained a score of 40% of students strongly agree and 57.5% of students agree that the use of Padlet encourages students in groups to interact and complete tasks together (Rashid et al., 2019).

After students collaborate to present their project results, it's time to refresh the atmosphere by using the Quizizz web tool. Quizizz is a web tool for creating interactive quiz games. The teacher can ask challenging questions about the student's project and insert a photo of the project documentation. Based on research on the effect of using several interactive web tools, Kahoot and Quizizz are web tools that provide more positive values, including significantly increased motivation and happiness (Chaiyo & Nokham, 2017).

Based on the above background, it is necessary to formulate research problems and objectives. The formulation of the problem in this study is how effective is the application of learning using the Plant Tour Project Distance Learning 3 in One model in improving students' statistical literacy skills on plant diversity material? While the purpose of the study was to determine the effectiveness of the application of learning using the Plant Tour Project Distance Learning 3 in One model in improving students' statistical literacy skills on plant diversity material.

The hypothesis in this study is that the application of the Plant Tour Project PJJ 3 in One learning model can improve students' statistical literacy skills on plant diversity material. The application of the learning model is considered effective if there is an increase in students' literacy skills on the material of plant diversity.

The advantages that can be taken from this research are fostering student awareness of the declining diversity of plants in the environment, introducing students to the use of AI (Artificial Intelligence) applications, especially plant identification applications. Another advantage is increasing student collaboration through information technology during the distance learning, and

the advantage for the teachers is increasing the ability to integrate mathematics subjects into biology subjects, and providing students with experience to carry out outdoor learning processes during a pandemic.

METHOD

The research was conducted on the XII grade students of SMAN 6 Bogor. Learning in this research was carried out online. The research period was between February 15, 2021 and March 10, 2021. The sampling technique was carried out randomly (random sampling). The number of students as the research sample was 36 students by taking into account other supporting factors, which are the availability of adequate smartphone facilities. Students are divided into groups based on the area of residence, with the aim of obtaining data on the distribution of plant diversity that can be used as statistical learning materials.

The study used a Pre Experimental Design with the type of One-Group Pretest-Posttest Design. The independent variable is the application of the learning model and the dependent variable is the statistical literacy ability of students. Sources of data were obtained from teacher observations of student activities and student learning outcomes online during the distance learning. Student activities are plant identification activities, collaborative activities of processing plant identification data and making reports activities. The activity can be observed in the Padlet. Student learning outcomes in the form of students' ability to answer questions on statistical literacy test instruments. In addition, student learning outcomes can be observed in the contents of the project report.

The statistical literacy test instrument was developed based on 4 indicator factors which can be seen in table 1 below

Table 1. Statistical Literacy Indicator

No.	Indicator
1.	Reading and Understanding Data
2.	Analyzing Data Using Statistical Concepts
3.	Interpreting Data
4.	Evaluating Data
5.	Presenting Data

In this study, what is meant by reading and understanding data indicators is that students are able to find information, capture data and classify statistical ideas that can be used as solutions in solving statistical problems. The indicator of analyzing data is a process or effort to process, calculate, organize data into new information so that the characteristics of the data become easier to understand and useful for solving a problem. Interpreting data is the process of giving meaning to data that has been analyzed or processed. The indicator of evaluating the data is assessing the data that has been interpreted based on the concepts that have been mastered. Indicator of presenting data is the process of conveying data systematically so that it is easy to understand

Each indicator is measured by 1 essay question and 4 multiple choice questions. In multiple choice questions, only 4 indicators are measured, namely reading and understanding data, analyzing data, interpreting data, and evaluating data. So that in total there are 5 essay questions and 16 multiple choice questions. The total score obtained when students answer correctly all multiple choice and essay questions is 41. The test developed is in the form of an essay, the form of essay questions is chosen because it will display an explanation of the static problem solving process. Multiple choice questions were chosen because they are more representative in terms of covering and representing the material that has been taught to students. At this stage a scoring rubric is arranged as a guide for measuring the results of the student statistical literacy test results, which can be seen in table 2 below.

Table 2. Scoring Criteria

Score	Criteria Essay Question
1.	No Answer
2.	Answering Wrong, Without Process and Explanation
3.	Answering Wrong, There is a Process and Explanation
4.	Answering Correctly, Without Process and Explanation
5.	Answering Correctly, There is a Process and Explanation
	Multiple Choice Question Criteria
0	No Answer
1	Correct Answer

The questions were validated first using the r test and expert test. The expert test uses the validation of a competent biology and mathematics teacher. The grid of the expert validation sheet material for the expert test criteria can be seen in table 3 and table 4 below

Table 3 Material Expert Test Grid

No.	Indicator	Score 1	2	3	4	5
1.	Actuality in the presentation of material					
2.	Suitability with learning objectives					
3.	The suitability of the filling in the material					
4.	Clarity of the language used					
5.	The suitability of the material with the interests and motivation of students					
6.	The suitability of the material with the interests and motivation of students					
7.	Consistent presentation of material					
8.	The suitability of the material with the student's ability level					
9.	The benefits of information technology in facilitating learning					
10.	The standard of the terms used					
11.	Conformity to the level of development of students					
12.	Authenticity of the material					

Table 4. Expert Test Criteria

Score	Criteria
49-60	Very Suitable
37-48	In accordance
25-36	Quite Appropriate
13-24	Not suitable
<12	Very Inappropriate

Analysis of the data using the Paired Sample t Test with a value of 0.05%. In the data analysis, two samples were compared in pairs, namely the pre-test and post-test score data. Before being compared, the pre-test and post-test data must be tested for normality using the F-Test Two-Sample for Variances. The hypotheses of this research are H1: the learning model can improve statistical literacy skills and H0: the learning model cannot improve statistical literacy skills. If the value of t stat [t count] > t critical (t table) then H1 is accepted. If the result of t stat [t count] < t critical (t table) then H1 is rejected and H0 is accepted.

The procedure in this study was a total of 36 students as a sample divided into 12 groups, each group consisting of 3 students. Before being treated by applying the Plant Tour Project Distance Learning 3 in One learning model, students were given a pre-test with statistical literacy questions.

After being given a pre-test, students work on a project by observing and documenting the diversity of plants in their environment using the PictureThis application, plant sampling is done by line transect. Then students organize data information that appears automatically in the application. Not all information from the application is processed into statistical material. Some of the information taken by students and processed statistically can be seen from table 5 below

Table 5. Source Data from Picture This

No.	The Data Taken from PictureThis
1.	Plant Classification
2.	Plant Benefits
3.	Plant Type
4.	Plant Survival
5.	Spread Radius
6.	Plant Height

Some qualitative information in the application is about the classification of plants, plant benefits, plant types. In the classification information, students identify the diversity of taxon in their environment. On the information on the benefits of plants, students identify based on medicinal sources, food sources, board sources, aesthetic sources, cosmetic sources, economic sources, shade plants and weeds. On the types of plants students identify based on annual, perennial and biannual. Based from these qualitative data, students process it into quantitative data. Some quantitative information in the application is information on hardiness zone (temperature range of survival), spread (natural scattering radius) and plant height (plant height) to improve statistical literacy.

Students collaboratively collected the data that has been obtained and process the data statistically. Students communicated their projects as project reports/products sent via the Padlet web tool. The teacher guided and observed the course of the learning process. Quizizz was given as a gamification, the goal is to motivate students to be enthusiastic about learning. After students internalized their learning outcomes, the teacher gave a post test. Then the data from the pre-test and post-test were analyzed using the Paired Sample t Test.

The lessons in this study were carried out during the COVID-19 pandemic, so that health protocols were mandatory to be adhered to. This learning is outdoor, learning resources are outside the home environment with a radius of about 1 km so students are required to wear masks and bring hand sanitizer. Students are not recommended to collaborate face-to-face to work on projects, collaboration is done online.

RESULT AND DISCUSSION

The results of this study included the validity of the instrument, student activities and student learning outcomes (pre-test and post-test scores). The three research results were analyzed descriptively and statistically. Before the instrument was tested in the study, the instrument was tested on a group of students outside the research sample. The instrument consists of 5 essay questions and 16 essay questions. The score for each essay is 5, so the total score for essays is 25. The score for the PG is 1, so the total score for the PG is 16. The overall score for essays and PG is 41. The results of the validation of essay questions from 10 questions are all valid, where r count for each question is greater than r table. All essay questions are valid, so there is no revision. The range of r count for valid questions is between 0.5918 to d. 0.9412 with a moderate level of correlation to very high, r table obtained 0.3202 for a sample of 36 students and a significance level of 0.05%. The results of the validation using the r test can be seen in table 6 below.

Table 6. Essay Question Validity Results

Question Number	Validity	Question Indicator	r Count

	(r table 0,3202)		
1.	Valid	Data Understanding	0,5918
2.	Valid	Data Analyzing	0,7516
3.	Valid	Data Interpreting	0,8559
4.	Valid	Data Evaluating	0,9412
5.	Valid	Data Communicating	0,8754

The validation results of multiple choice questions are that out of 16 questions, there are 10 valid questions and 6 invalid questions. Invalid questions are revised together with expert teachers, so that there is construct validation in revising about it. The range of r count is between 0.2715 to d. 0.5248 with a low correlation level to enough, r table obtained 0.3202 for a sample of 36 students and a significance level of 0.05%. The results of the validation using the r test can be seen in table 7 below.

Table 7. Multiple Choice Validation Results

Question Number	**Validity (r table 0,3202)**	**Question Indicator**	**r Count**
1.	Valid	Data Understanding	0,3602
2.	Valid	Data Understanding	0,3203
3.	Valid	Data Understanding	0,3596
4.	Valid	Data Understanding	0,4594
5.	Invalid	Data Analyzing	0,2850
6.	Invalid	Data Analyzing	0,3103
7.	Invalid	Data Analyzing	0,2715
8.	Valid	Data Analyzing	0,5248
9.	Valid	Data Interpreting	0,4054
10.	Invalid	Data Interpreting	0,2715
11	Valid	Data Interpreting	0,2919
12	Invalid	Data Interpreting	0,3000
13	Valid	Data Evaluating	0,3580
14	Valid	Data Evaluating	0,4615
15	Invalid	Data Evaluating	0,2874
16	Valid	Data Evaluating	0,4426

Based on table 3 regarding the expert test criteria, the results showed that the instrument was very suitable and suitable to be used as a research instrument. The results of the expert test on biology and mathematics can be seen in table 8 below.

Table 8. Expert Test Results

Expert	**Score**	**Criteria**
Biology Teacher	52	Very Suitable
Mathematics Teacher	47	Suitable

Student activities during the application of the Plant Tour Project Distance Learning 3 in One learning model include activities to identify plants in their living environment, activities to analyze data in the form of tables and graphs, activities to provide interpretations of tables and graphs and online collaboration activities carried out by students in processing data and make a report.

The results of student activity showed that 100% (36 students) identified plants using PictureThis, 75% (27 students) analyzed tables and graphs, 58.33% (21 students) interpreted and evaluated data, 83.33% (30 students) made reports (data communicating), and 63.89% (23 students) collaborated to make reports. There were 16.67% (6 students) did not make a report. Data on student activity during learning can be seen in table 9 below.

Table 9. Student Activities

No.	Students Activities	The Number of Students	Student Percentage
1.	Plant Identification	36	100 %
2.	Analyze data into tables and graphs	27	75%
3.	Interpret and evaluate data	21	53,88%
4.	Communicating data (making reports)	30	77,78%
5.	Collaborate	23	63,89%
	Average student activity		76,11%

Student activities showed in the figure 1 below

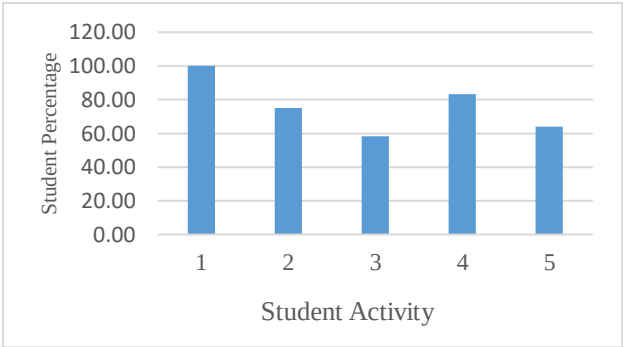


Figure 1. Student Activities in the Learning Process

Based on table 9 and figure 1, it can be interpreted that all students carry out plant identification activities using PictureThis. This indicates that there is ease and accuracy provided by the application in accessing and identifying plants so that students are motivated to use them. There are 30 students working on reports and 6 students not making reports. Of the 30 students who worked on the report, there were 23 students (7 groups) collaborating and 7 students working individually.

In table 9 there are 21 students who interpret and evaluate the data, there are 5 students who make errors in the interpretation and evaluation of the data. The error is because there are errors in reading and understanding the data so that it is wrong to make a graph. Errors in graphing will result in errors in interpreting and evaluating data. Based on the report on the project results, students make graphs about the benefits of plants in their respective environments. There are student errors in making graphs. Errors occur when students convert data into graphs. Because the plant benefit data is not continuous data, the graph should be a bar graph, not a line graph. Examples of errors in graphing and interpreting graphs can be seen in Figure 2.

Manfaat Tanaman	Sumber Obat	Sumber Pangan	Sumber Sandang	Tanaman Hias	Sumber Kosmetik	Sumber Papan	Sumber Ekonomi	Peneduh	Gulma
Billy	28	22	2	29	2	4	3	10	0
Naila	4	1	0	10	1	0	11	1	0
Qanita	4	0	0	8	0	0	0	0	0

Dari grafik bisa kita lihat, ada berbagai macam manfaat pada tanaman dan manfaat dari tanaman yang mendominasi adalah sebagai tanaman hias, yang kedua sebagai sumber obat. Yang sangat jarang yaitu sebagai Gulma.

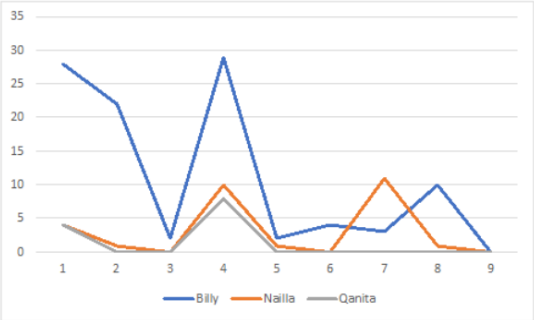
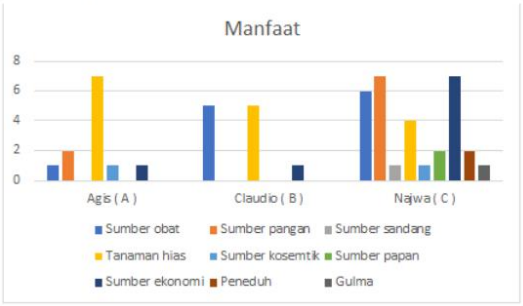


Figure 2. Examples of Student Errors in Making a Graph of the Benefits of Plants

Of the 21 students who made reports, there were 16 students who did the correct interpretation and evaluation. Figure 3 describes students who are able to make graphs correctly and interpret graphs well.

b) Keanekaragaman berdasarkan 'Manfaat'



Dari grafik tersebut, dapat terlihat bahwa manfaat tanaman di lingkungan sekitar C lebih variatif dibandingkan dengan lingkungan sekitar A dan B. Pada manfaat sebagai sumber ekonomi maupun sumber pangan tertinggi pada lingkungan C, sedangkan manfaat sebagai tanaman hias tertinggi pada lingkungan A.

Figure 3. Examples of Students Who Are Able to Make Graphs and Interpret Graphs Correctly

The percentage of student activity participating in learning is 76.11%, this indicates that not 100% of students are fully involved in participating in learning. Factors that make it difficult for students to participate in learning during this distance learning period include poor internet connections and the devices they have. According to D Yates (2020) while answering a question posted on Research Gate, by John R. Yamamoto-Wilson a retired professor from Sophia University, about the effects of Covid-19 and online learning on instructors and learning stated that students with outdated technology devices may find it difficult to fulfill some of the technical requirements of online learning (Adedoyin & Soykan, 2020:4).

The increase in student learning outcomes before and after the application of learning can be seen from the difference in the pre-test and post-test scores. Based on the data, there was an increase in learning outcomes by 53.46%. The lowest increase occurred in indicators interpreting data, and the highest increase occurred in indicators communicating data. The results of the increase can be seen in table 10 and figure 4 below.

Table 10. Average Pre-Test and Post-Test Scores

Indicator	Average value		Enhancement (%)
	Pre Test	*Post Test*	
Data Understanding	38,00	56,90	49.74
Data Analyzing	36,49	55,20	51.27
Data Interpreting	34,93	48,90	39.99
Data Evaluating	33,40	50,55	51.35
Data Communicating	36,67	63,90	74.26
Average	35,90	55,08	53.46

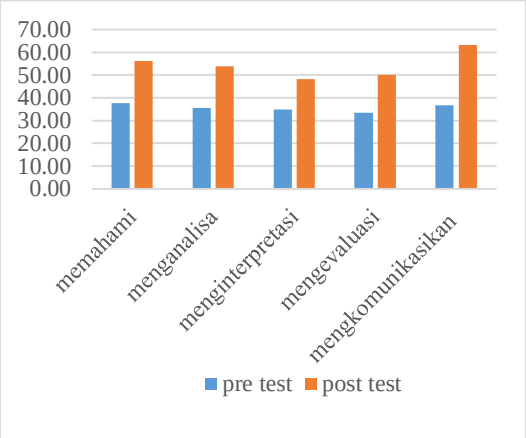


Figure 4. Pre Test and Post Test Results

Before being tested parametrically, the results of the pre-test and post-test as learning outcomes must be tested for normality. The normality of the data was tested using the F-Test Two-Sample for Variances. The Fh value is 0.486235, Ft is 0.569107 so that the Fh value < Ft. Based on these calculations, the pre-test and post-test data are normally distributed, so they are ready to be tested parametrically. The calculation of the normality of the data from the pre-test and post-test essays can be seen from table 11 below.

Table 11. Normality Test Results of Pre Test and Post Test Essay Data

	PRE TEST	*POST TEST*
Mean	35.90786	55.0813
Variance	127.003	261.1966
Observations	36	36
Df	35	35
F	0.486235	
P(F<=f) one-tail	0.018058	
F Critical one-tail	0.569107	

Paired Sample t Test is a test used to compare the difference of the two means of two paired samples with the assumption that the data are normally distributed. Paired samples come from the same

subject, each variable is taken in different situations and circumstances. Table 12 below are the results of the Paired Sample t Test, the results of the pretest, and post test.

Table 12. Test Results Paired Sample t Test Data Pre Test and Post Test

	PRE TEST	***POST TEST***
Mean	35.90786	55.0813
Variance	127.003	261.1966
Observations	36	36
Pearson Correlation	0.305	
Hypothesized Mean Difference	0	
df	35	
t Stat	-6.9109	
P(T<=t) one-tail	2.49E-08	
t Critical one-tail	1.689572	
P(T<=t) two-tail	4.98E-08	
t Critical two-tail	2.030108	

Table 12 shows the results of the Paired Two Sample t test. The researcher used a significance level of 0.05 one tail. The results obtained are [t count] 6.9109 > t table 1.6896, the Pearson Correlation value is 0.305. The hypothesis says that H1: the learning model can improve statistical literacy skills and H0: the learning model cannot improve statistical literacy skills. If the result of t stat (t count) > t critical (t table) then H1 is accepted. If the result of t stat (t count) < t critical (t table) then H1 is rejected and H0 is accepted. Based on the results of calculations in table 12, H1 is accepted, H0 is rejected, so it is said that significantly the application of the 3 in One Distance Learning Plant Tour Project model in learning is able to increase the statistical literacy of high school students on plant diversity material.

The findings that the researchers got during the online learning process were that the sample students had different speeds in completing projects. Teachers need to motivate students who are slow in learning. There are various factors that cause students to vary in their speed in mastering the material and completing projects, so teachers need to motivate and handle them in different ways.

The role of Padlet in this learning is very useful for teachers as researchers in controlling the stages of projects carried out by students. In addition to controlling function, Padlet also functions to collaborate and motivate students. Students can give positive comments on their friends' assignments. Quizizz as a gamification in learning has an important role because the teacher can provide statistical literacy questions combined with photos of plant identification documentation by students so that students feel that the questions are part of their contextual learning experience.

CONCLUSION

The conclusion that can be drawn from this research is that the application of the Plant Tour Project Distance Learning 3 in One model can significantly improve the literacy skills of students of SMAN 6 Bogor class XII MIPA on plant diversity. The average value of the pre-test was 35.90 and the post-test score was 55.08, an increase in learning outcomes of 53.46%. The largest increase in the indicator of communicating or presenting data was 74.26% and the lowest increase was in the indicator of interpreting data. Student activity during learning is 76.11%.

It is suggested that the results of this experiment can be followed up by the teacher to conduct classroom action research so that the results can be observed more clearly in the classroom. If this classroom action research is carried out during the COVID-19 pandemic, please pay attention to health protocols because some learning is carried out outdoors.

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