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THE EFFECT OF EXPLORATION AND CHARACTERIZATION ACTIVITIES OF MEDICINAL PLANTS ON STUDENTS' ENVIRONMENTAL CARE VALUES AT THE LE HU GARDEN

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ABSTRACT

THE INFLUENCE OF EXPLORATION AND CHARACTERIZATION ACTIVITIES OF MEDICINAL PLANTS ON THE ENVIRONMENTAL CARE VALUE OF STUDENTS AT THE LE HU GARDEN

This research aims to determine the effect of exploration activities and characterization of medicinal plants on the environmental care values of UISU FKIP BIOLOGY Education students at The Le Hu Garden. This research was conducted on 07 May 2024 at The Le Hu Garden.

This research uses a quasi-experimental method (Quasi experiment) with the research population being all students of BIOLOGY Education FKIP UISU active in FY 2023/2024 totaling 32 people who were then used as samples in the form of a total sample which has the same number as the population, namely 32 people. Instruments in this research is a test of the value of caring for the environment in the form of a pre-test and post-test, observation sheet, and also a questionnaire sheet.

The results of the students' environmental care test before using this exploration and characterization method obtained sufficient scores in mastery according to the index classification, the percentage of environmental care scores was 0 people (0%) and classified as having very poor mastery, 32 people (100%) with an average score. -an average of 28.6% and a standard deviation of 6.42, while the environmental care score test of students who used the exploration and characterization method was 3 people (9.4%) and was classified as sufficient, namely 21 people (65.6%) and those who were very less were 8 people (25%) with an average value of 63.53 and a standard deviation of 11.41.

The normality test results obtained were Lcount <L-tabe), namely 0.147 <0.156, indicating that the data was normally distributed, while the homogeneity test results obtained were Fcount <Ftable 1.53 < 1.56, stating that the data had the same or homogeneous variance. The results of hypothesis testing using the t test obtained a thinning trabel value or 28.54 1.69 with a reality level of 0.05, so Ha was accepted and Ho was rejected. Thus it can be concluded that there is a significant influence on the use of exploration methods and characterization of BIOLOGY education students at FKIP UISU MEDAN,

Keywords: Environmental Care Values, Exploration and Characterization Methods

INTRODUCTION

Indonesia has a wealth of life, including types of plants and various natural resources including culture and ethnic groups that are very diverse and diverse. Each region and each student has certain knowledge in the use of plants found around them. The use of these plants is not only for economic needs but can also be used as medicine for health (Kusmana & Hikmat, 2015)

This statement is reinforced by (Musaicho et al., 2022) Traditional medicine used by students has the advantage that it is easy to obtain and the raw materials can be planted in the yard or yard. and can be mixed at home which is also called Family Medicinal Plants (TOGA). Almost all Indonesian students have used medicinal plants or traditional concoctions to cure a disease or disorder in their bodies, because the efficacy of these medicinal plants is recognized to be able to treat or relieve the disease experienced.

North Sumatra Province has a total area of approximately 182,414.25 km² consisting of a land area of approximately 72,981.23 km² and an ocean area of approximately 109,433.02 km². North Sumatra Province borders the Aceh region to the north, the Indian Ocean to the west, the Riau Province and West Sumatra Province to the south, while the Malacca Strait to the east. North Sumatra Province is one of the provinces located on the island of Sumatra. North Sumatra Province is located at 1° - 4° North Latitude and 98° - 100° East Longitude. North Sumatra Province has 213 islands that already have names, with 6 islands in the East Coast region including Berhala Island as the outermost island bordering the Malacca Strait and the remaining 207 islands in the West Coast region with Wunga Island and Simuk Island as the outermost islands in the West Coast region. Regionally in its geographical position, North Sumatra Province is located on the strategic international shipping route of the Strait of Malacca which is close to Singapore, Malaysia and Thailand.

The Le Hu Garden Area One of the tourist parks in North Sumatra located in Deli Serdang Regency, Deli Tua District. The Le Hu Garden was established in 2015 which is an alternative to fulfill the need for recreation and tourism. The Le Hu Garden is a 3 hectare tourist location consisting of 3 plain zones, namely the first plain zone which is an artificial lake and fish pond. The second and third plains are hill areas with flower gardens on top. The Le Hu Garden is geographically located between. Various types of flora that grow well in The Le Hu Garden, one of which is Medicinal Plants.

Medicinal Plants are plants that have medicinal properties and are used as medicine in healing or preventing disease. The definition of medicinal properties is containing active substances that function to treat certain diseases or if it does not contain certain active substances but contains the resultant effect / synergy of various substances that function to treat. Medicinal plants as native Indonesian medicine, have existed since the time of our ancestors, namely used in efforts to maintain health and treat diseases, then this knowledge is passed down from generation to generation. In the use of medicinal plants as medicine can be by drinking, sticking, for washing / bathing, inhaled so that its use can fulfill the concept of cell receptor work in receiving chemical compounds or stimuli.

The Indonesian Ministry of Health states that traditional medicine is a material or concoction of ingredients derived from plants, animals, minerals. Traditional Indonesian medicine or native Indonesian medicine better known as jamu, is generally a mixture of herbal medicines, namely medicines derived from plants. The parts of the plant used can be roots, stems, leaves, tubers or maybe all parts of the plant.

Various medicinal plants are in the Le Hu Garden area and can be used as traditional medicine. An appeal to visitors and students around not to damage medicinal plants around The Le Hu Garden is one form of preserving the culture and local wisdom owned by students.

Knowing the number of species in the Le Hu Garden area, Deli Tua District, it is necessary to explore and characterize the organs of the plant. This requires direct observation of objects by identifying plant parts from the shape of the roots, stems, leaves, flowers and their habitat. This process can be done by documenting and also recording the results obtained. So that from this research process it can be used to develop Biology Education teaching materials.

Nowadays, concern for the environment is very low. Students as educators are expected to have a high level of concern for their environment. In fact, there are still many students who do not have that, so they do not understand the impact of damage to the environment. Not only that, there are still many who do not know the benefits of the surrounding environment. With this research, it is hoped that the research that will be carried out will increase students' concern for their environment. The lack of attitudes and concerns of students towards the environment is certainly concerning, because through education students should understand and care more about their environment.

From this research, the researcher will examine Medicinal Plants that will be taught to students through exploration activities and characterization of students' environmental care values, so that from this research students will understand how important Medicinal Plants are in everyday life.

METHODS

A. Location and Time of Research

1. Research Location

The research was conducted at The Le Hu Garden, Delitua District, Deli Serdang Regency, North Sumatra Province, 10.1 km from Medan City, with an area of 3 hectares. Then it was applied at the Islamic University of North Sumatra on Jalan Sisingamangaraja, Teladan Village, Medan City, Teladan Barat, Medan City, Medan City, North Sumatra 20216 on Biology Education Students of FKIP UISU who were active in the 2023/2024 academic year.

2. Research Time

This research lasted for 3 months from March to May 2024.

B. Population and Sample

1. Research Population

The population in this study were all Biology Education students of FKIP UISU who were active in the 2023/2024 academic year.

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Table of Population of All Biology Education Students FKIP UISU

NO	Class	Man	Woman	Amount
1	Semester 2	-	2 Student	2 Student
2	Semester 4	1 Student	7 Student	8 Student
3	Semester 6	-	3 Student	3 Student
4	Semester 8	3 Student	17 Student	20 Student
Jumlah		4 Student	29 Student	33 Student

Source: Faculty of Teacher Training and Education

2. Research Sample

The sample used in this study was total sampling, a sampling technique where the number of samples is the same as the population. The sample in this study were all Biology Education students of FKIP UISU who were active in the 2023/2024 academic year.

C. Research Variables

1. Independent Variable (N)

The independent variables in this research are exploration activities and characterization of medicinal plants.

2. Dependent variable (Y)

The dependent variable in this study is the environmental concern value of students towards medicinal plants at The Le Hu Garden.

D. Research Methods and Design

1. **Research Methods**

Quasi-Experimental Research is a research that is intended to determine whether or not there is an effect of something imposed on the subject, namely students. According to the method (Sugiyono, 2003) experimental research is a research method used to find the effect of something that is treated on others in conditions that can be controlled. Quasi-experiments use all subjects in the study group (intact group) to be treated, not using subjects taken randomly.

2. **Research Design**

The research design carried out by this researcher is as shown in the table below

Class	Initial Test	Treatment	Final Test
Sample Class	T1	Exploration and Characteristics of Medicinal Plants	T2

Note.
T1: Initial Test (To see the students' abilities in Exploration and Characterization activities)
Exploration and Characteristics of Medicinal Plants: Treatment given to samples during the research
T2: Final Test (To see the students' environmental awareness values)

RESULTS AND DISCUSSION

A. Results

The research data were obtained from the results of the initial test and post-test as well as observation sheets on the material of Plant Morphology. The data were calculated to determine the effect of exploration and characterization learning methods on students' environmental awareness values. In the assessment of essay test questions, students were declared successful if the students' environmental awareness value was equal to or higher than 76 - 85% which was in accordance with the scoring indicators. The students' observation sheets were declared successful if the average value percentage was 80% ≤ NR <90%. From the results of the study conducted using the exploration and characterization learning method on the material of Medicinal Plants for students in semesters 2, 4, 6 and 8 of Biology Education, FKIP UISU with the number of essay questions 10 (items) for the initial test and 10 questions for the post-test, the following data were obtained:

Success Level Criteria

90% ≤ NR ≤ 100%: Very Good

80% ≤ NR < 90%: Good

70% ≤ NR < 80%: Sufficient

60% ≤ NR < 70%: Less

0% ≤ NR < 60%: Very Less

Data Table of Initial Test Results for Exploration and Characterization Activities on Plant Materials Medicines with a minimum scoring criteria of 76 – 85%

No	Student name	Initial Test		Information
		Score	Value	
1	Wasihatul Afrah	7	23,33	Less than once
2	Luthfia Indaru	9	30,00	Less than once
3	Della Amanda Putri	12	40,00	Less than once
4	Asrina Hasibuan	6	20,00	Less than once
5	Farida Alas	8	26,66	Less than once
6	Amanda Bako	8	26,66	Less than once
7	Suranta Uli Br Ginting	10	30,33	Less than once
8	Khofifah Intan Maharani	10	33,33	Less than once
9	Riska Rahma Putri	6	20,00	Less than once
10	Veronika	9	30,00	Less than once
11	Yusi Salsabila	7	23,33	Less than once
12	Hafizah Khairani	8	26,66	Less than once
13	Mila Ariska Dewi	9	30,00	Less than once
14	Indah Meliana	11	36,66	Less than once
15	Muhamad Ekbal Awaludin	8	26,66	Less than once
16	Zikir Amin Nazara	10	33,33	Less than once
17	Dini Rafika	6	20,00	Less than once
18	Yusra Laila	9	30,00	Less than once
19	Johan PH Pardosi	12	40,00	Less than once
20	Adzilla Saragih	11	36,66	Less than once
21	Dilla Anggreini	7	23,33	Less than once
22	Puput Amalia	12	40,00	Less than once
23	Musa Al Quddusi	11	36,66	Less than once
24	Ade Amalia	12	40,00	Less than once
25	Refina Ramadhani	9	30,00	Less than once
26	Riza Sibuea	10	33,33	Less than once
27	Dinda Vika Yulia Ningsih	6	20,00	Less than once
28	Theresia Sihaloho	7	23,33	Less than once
29	Mariana Ritonga	6	20,00	Less than once
30	Nazzwa Syalvina Hakim	9	30,00	Less than once
31	Rizka Khoirunisa	10	33,33	Less than once
32	Hafifah Anggraini	8	26,66	Less than once

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From the initial test table data above, 5 indicators were obtained and each indicator consists of 2 questions, with the assessment as stated in the Environmental Care Value Scoring Guidelines Table.

Percentage of average value (NR) = $\frac{Total\ score}{Maximum\ score}\ x\ 100$ (Sudijno, 2008)

$$NR = \frac{7}{30}\ x\ 100 = 23{,}32$$

From the Initial Test Table data above, it can be seen that the highest score of students in the initial test was 40 for 4 people and the lowest score was 20 for 5 people. The initial test score of students who succeeded with a good level of mastery according to the scoring indicator was 0 people (0%) and those who failed were 32 people (100%)

Post-Test Results Data Table for Environmental Care Values on Medicinal Plant Material with a minimum scoring criteria of 76 – 85%

No	Student name	Final Test		Information
		Score	Value	
1	Wasihatul Afrah	20	66,66	Enough
2	Luthfia Indaru	24	80,00	Good
3	Della Amanda Putri	23	76,66	Enough
4	Asrina Hasibuan	22	73,33	Enough
5	Farida Alas	23	76,66	Enough
6	Amanda Bako	14	46,66	Less than once
7	Suranta Uli Br Ginting	22	73,33	Enough
8	Khofifah Intan Maharani	21	70,00	Enough
9	Riska Rahma Putri	18	60,00	Enough
10	Veronika	17	56,66	Not enough
11	Yusi Salsabila	19	63,33	Enough
12	Hafizah Khairani	20	66,66	Enough
13	Mila Ariska Dewi	23	76,66	Enough
14	Indah Meliana	17	56,66	Not enough
15	Muhamad E. Awaludin	14	46,66	Less than once
16	Zikir Amin Nazara	21	70,00	Enough
17	Dini Rafika	19	63,33	Enough
18	Yusra Laila	24	80,00	Good
19	Johan PH Pardosi	21	70,00	Enough
20	Adzilla Saragih	19	63,33	Enough
21	Dilla Anggreini	22	73,33	Enough
22	Puput Amalia	24	80,00	Good
23	Musa Al Quddusi	21	70,00	Enough
24	Ade Amalia	20	66,66	Enough
25	Refina Ramadhani	19	63,33	Not enough
26	Riza Sibuea	12	40,00	Less than once
27	Dinda Vika Yulia Ningsih	20	66,66	Enough
28	Theresia Sihaloho	14	46,66	Less than once
29	Mariana Ritonga	22	73,33	Not enough

30	Nazzwa Syalvina Hakim	22	73,33	Enough
31	Rizka Khoirunisa	19	63,33	Enough
32	Hafifah Anggraini	21	70,00	Enough

From the data in the table above, it was obtained from 5 indicators and each indicator consists of 2 questions, with the assessment as stated in the Environmental Care Value Scoring Guidelines Table.

Percentage of average value (NR) $= \frac{Total\ score}{Maximum\ score}\ x\ 100$ (Sudijno, 2008)

$$NR = \frac{20}{30}\ x\ 100 = 66{,}66$$

From the post-test table data above, it can be seen that the highest score of students in the post-test was 80.00 for 3 people and the lowest score was 40.00 for 1 person. The post-test scores of students who succeeded with a good level of mastery according to the scoring indicators were
24 people (75%) and those who failed were 8 people (25%).

To find out the average standard deviation in the initial test and post-test, see the following table of frequency distribution of initial test and post-test scores.

Frequency Distribution List Table of Students' Initial Test Scores

No	Test scores	Fi	Xi	Xi2	Fi.Xi	Fi.Xi2
1	20,00 – 23,00	9	21	441	189	3969
2	24,00 – 27,00	5	25	625	125	3125
3	28,00 – 31,00	7	29	841	203	5887
4	32,00 – 35,00	4	33	1089	132	4356
5	36,00 – 40,00	7	38	1444	266	10108
	Amount	32	118	4440	915	27445

Based on the Frequency Distribution List Table of the Student's Initial Test Scores above, to find the average value of the initial test, namely by dividing the total number of Student scores by (fixi) 915 with the frequency of the number of Students (fi) as many as 32 so that the average value of the initial test (X) is 28.6 and the standard deviation is 6.42.

From the frequency distribution list of the initial test on the Medicinal Plants material using the exploration and characterization learning model, it can be described in the frequency distribution histogram below:

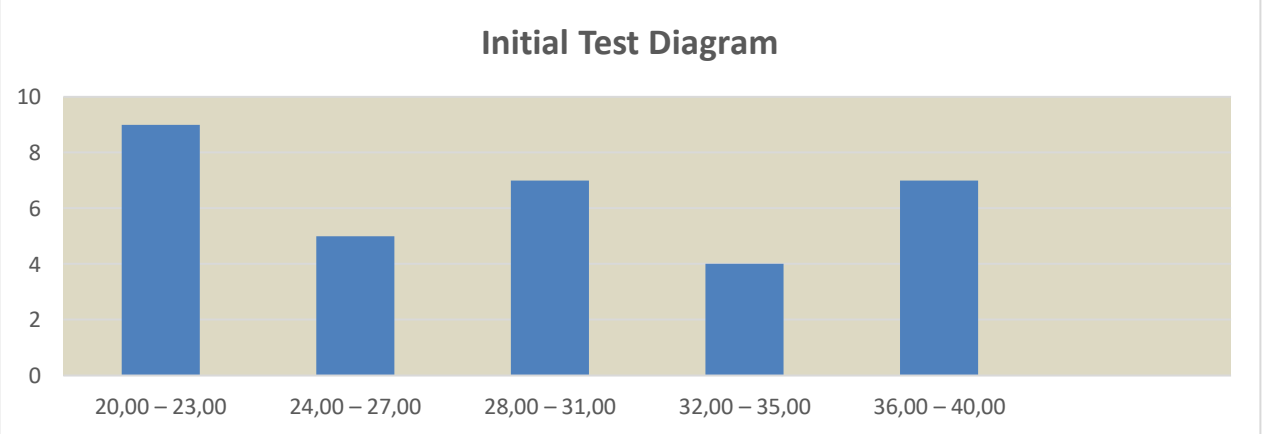

Figure 1. Graph of Initial Test Scores of FKIP Biology Education Students on Medicinal Plants Material

Table of Frequency Distribution List of Student Final Test Scores

No	test scores	Fi	Xi	Xi2	Fi.Xi	Fi.Xi2
1	40,00 – 46,00	4	43,00	1849	172	7396

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2	47,00 – 53,00	2	50,00	2500	100	5000
3	54,00 – 60,00	6	57,00	3249	342	19494
4	61,00 – 67,00	7	64,00	4096	448	28672
5	68,00 – 74,00	5	71,00	5041	355	25205
6	65,00 – 80,00	8	77,00	5929	616	47432
	Amount	32	147,00	26703	2033	133199

Based on the Table of Frequency Distribution List of Post-Test Scores of Students above, to find the average post-test score, namely by dividing the total number of Student scores by (fixi) 2033 with the frequency of the number of Students (fi) as many as 32 so that the average post-test score (X) is 63.53 and the standard deviation is 11.41. From the list of frequency distribution of the post-test on the Medicinal Plants material using the exploration and characterization learning model, it can be described in the frequency distribution histogram below

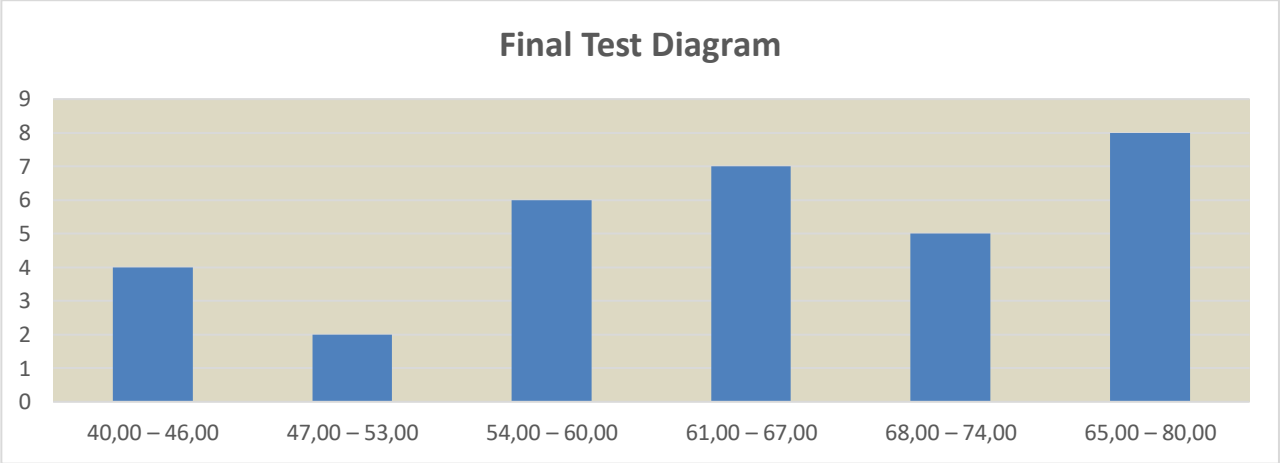

Figure 2. Graph of Final Test Values of FKIP Biology Education Students on Medicinal Plants Material

Gain Value Data Table

No	Question Indicator	Gain
1	Understanding Medicinal Plants	0,44
2	Maintaining environmental sustainability	0,65
3	Caring for medicinal plants	0,61
4	Preventing environmental pollution	0,47
5	Understanding the role of plants in environmental sustainability	0,46

Based on the table of gain value data above, the increase in the value of students' environmental care is assessed based on the gain score results. Each question indicator is compiled and its increase score is calculated. To calculate the gain score results from each question indicator, the gain formula is obtained.

$$\text{Gain (g)} = \frac{S_{post} - S_{prest}}{S\ maks - S_{pre}}$$

$$= \frac{63-37}{96-37}$$

$$= \frac{26}{59} \quad = 0,44 \quad \text{(Currently)}$$

From the list of gain value data tables on the Medicinal Plants material using the exploration and characterization learning model, it can be described in the frequency distribution histogram below

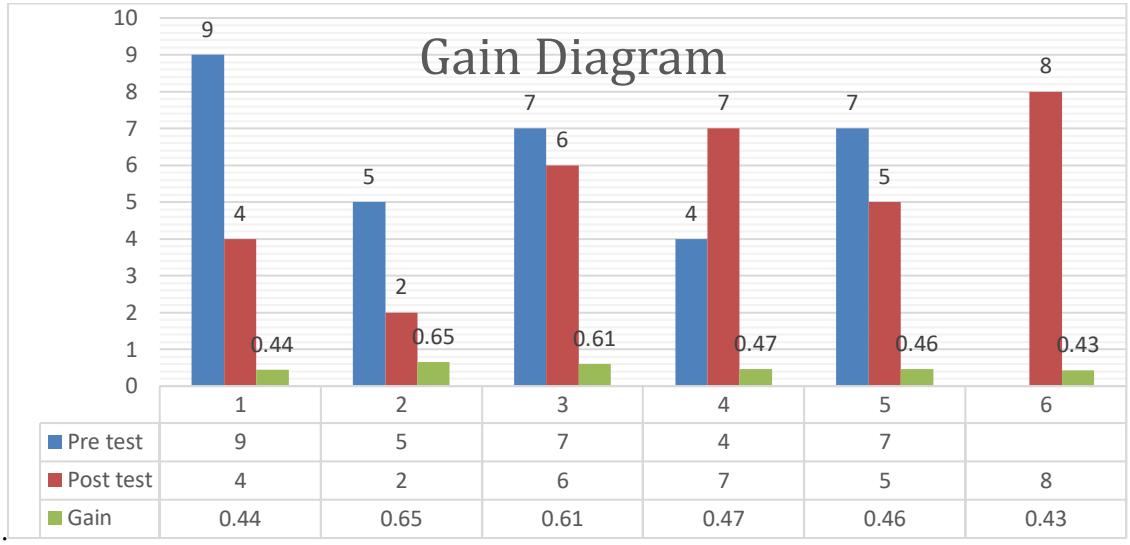

Figure 3. Gain Increase Graph

Data Table of Presentation Values of Students' Environmental Care Values from Observation Sheets

Environmental Care Values	**Indicator**	**Score** Group 1					**Score** Group 2					Percentage of average value
		5	4	3	2	1	5	4	3	2	1	
Environmentally friendly attitude												
	Understanding Medicinal Plants	5					5					100%
	Maintaining environmental sustainability		4				5					90%
	Caring for medicinal plants	5					5					100%
	Preventing environmental pollution		4					4				80%
	Understanding the role of plants in environmental sustainability	5						4				90%

Based on the table of data on the presentation value of the average value of students' environmental concern through the observation sheet, it was obtained by adding up the total score divided by the maximum score multiplied by 100%.

Table. Questionnaire Data Calculation

No	Question	Answer options					Response	
		SS	S	RG	TS	STS	Positive Response (+)	Negative Response (-)
1	I find it easier to understand the learning if I am in the field directly	23	9				100 %	
2	In studying plant morphology material, direct observation is required.	17	15				100 %	
3	Observing is a basic thing that must be done in studying plant morphology.	14	18				100 %	
4	I will note down everything I have observed.	14	18				100 %	

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5	I can know the effects of environmental pollution if I observe it directly.	14	18				100 %	
6	I don't want to litter so that environmental pollution doesn't occur.	21	11				100 %	
7	I will not remove plants because it is an effort to preserve plants.	16	13	3			96,9	3,1
8	I prefer an environment with lots of plants to an environment without plants.	18	14				100 %	
9	The knowledge gained in plant morphology can be applied in life.	17	9	6			100 %	
10	I am able to classify plant types without guidance from other people (experts).	13	14	5			100 %	
11	I will ask the researcher if there is anything I don't know in the field.	9	18	4	1		96,9	3,1
12	I find it easier to understand the factors of environmental pollution	12	16	4			100 %	
13	The knowledge gained in plant morphology can be applied in life.	10	13	7		2	93,75	6,25
14	I understand the consequences of destroying plants	11	15	3	1	2	90,6	9,4
15	I can understand the impact of environmental pollution	16	15	1			100 %	
16	After this research, I will preserve the environment well	6	19	3	3	1	87,5	12,5
17	I can tell that the plant has economic value and sales value.	14	15	1	2		93,75	6,25
18	If I am asked, I can explain the results of my observations.	10	17		4	1	84,4	15,6
19	When my explanation is wrong, I am willing to accept input from others.	5	20	6	1		96,9	3,1
20	I will make my own conclusions about what I observe.	16	9	7			100 %	

2. Test Data Requirements

Before the data is analyzed, data analysis requirements testing must first be carried out, including:

1) Normality Test

The normality test is conducted to determine whether the data is normally distributed or not. This test is conducted using the Liliefors formula. Data is said to be normal if L_count < L_table at a significant level (α = 0.05).

Initial Test Data Normality Test

Initial Test Data Normality Test Table

Class interval	**Xi**	Frequency	**Zi**	**F(zi)**	**S(zi)**	**[F (zi) – S (zi)]**
20,00 – 23,00	21	Frequency	-1,33	0,098	0,2	0,102
24,00 – 27,00	25	Frequency	-0,71	0,3168	0,4	0,0832
28,00 – 31,00	29	Frequency	-0,09	0,3638	0,3333	0,0305
32,00 – 35,00	33	Frequency	0,53	0,692	0,8	0,108
36,00 – 40,00	38	Frequency	1,35	0,885	1	0,115

$x\tilde{} = 29.59, S = 6.42, L\_count = 0.115, L\_table = 0.1560$ *The conclusion;* $L\_count > L\_table$, *then the initial test value data is normally distributed.*

From the Initial Test Data Normality Test Table above to see the normality of the data is taken from the largest L_co $- S\_((zi))$, *where the absolute price of the standard z is* $L\_count = 0.115$ *with a real level* $= 0.05$ *and* $N = 32$ *and obtained* $L\_table = 0.156$ *from the calculation above proves* $L\_count < L\_table$ *which is* $0.115 < 0.156$ *so that it is stated that the initial test value data is normally distributed.*

2) Post Test Data Normality Test

Post Test Data Normality Test Table

Class interval	Xi	Frequency	Zi	F(zi)	S(zi)	[F (zi) – S (zi)]
40,00 – 46,00	43,00	4	-1,79	0,4633	0,1666	0,2967
47,00 – 53,00	50,00	2	-1,18	0,3810	0,3333	0,0477
54,00 – 60,00	57,00	6	-0,56	0,2123	0,5	0,2879
61,00 – 67,00	64,00	7	0,04	0,0160	0,6666	0,665
68,00 – 74,00	71,00	5	0,65	0,2422	0.8333	0,5911
65,00 – 80,00	77,00	8	1,18	0,3810	1	0,619

b. $x\tilde{} = 63.5, S = 11.41, L\_count = 0.147, L\_table = 0.1560$ *The conclusion;* $L\_count < L\_table$, *then the post − test value data is normally distributed*

c. *From the Post − Test Data Normality Test Table above to see the normality of the data taken from the largest L_coun* $S\_((zi))$, *where the absolute price of the standard z is* $L\_count = 0.147$ *with a real level* $= 0.05$ *and* $N = 32$ *and obtained* $L\_table = 0.156$ *from the calculation above proves* $L\_count < L\_table$ *which is* $0.147 < 0.156$ *so that it is stated that the post − test value data is normally distributed.*Homogeneity Test

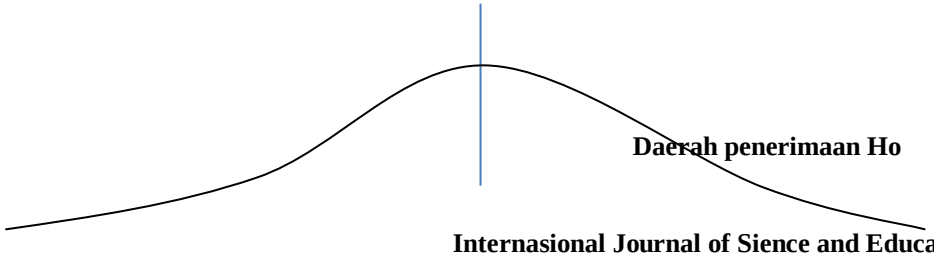
Homogeneity Test is conducted to determine whether the population has homogeneous variance or not. Data is said to be homogeneous if F_count < F_table at a significant level of u = 0.05 From the data, it is known that the Initial Test variance (S^2) = 71.58 and the post-test variance (S^2) = 110.16, then F_count = 1.53 is obtained

From the F distribution list, the F value for a = 0.05 dl numerator (V) = (n - 1) = (21-1-20) dk denominator (V) - (n - 1) - (21 - 1 - 20) So that F_table 1.56 is obtained Because F_count < F_table or 1.53 < 1.56, it can be stated that the data presented has homogeneous variance.

1. Hypothesis Testing

According to Carl Hempel (2010) Hypothesis is a very general final statement that serves to explain various phenomena related to it. This hypothesis is then tested empirically by collecting data and evidence to prove or reject it. Based on the results of the calculations that have been carried out, it is known that the number of squared deviations is 1,969.909 by using this value it can be known that it is 28.54. The t_count value> t_table or 28.54> 1.69 then Ha is accepted and Ho is rejected, so it is stated that there is a significant influence of exploration and characterization activities of Medicinal Plants on the environmental care values of FKIP UISU Students at The Le Hu Garden.

28,54



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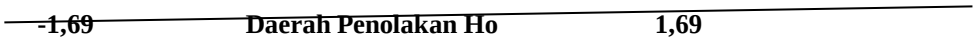

Gambar 4. Kurva Pengujian Hipotesis

According to Dantes (2012) a hypothesis is a presumption or assumption that must be tested through data or facts obtained through research. According to Sugiyono (2009) a hypothesis is a temporary answer to the formulation of a research problem, where the formulation of the research problem has been stated in the form of a question. The hypothesis is said to be temporary because the answer given is only based on theory. Borg and Gall (1979: 61) proposed the following requirements for a hypothesis: 1) The hypothesis must be formulated briefly but clearly., 2) The hypothesis must clearly show a relationship between two or more variables, 3) The hypothesis must be supported by theories put forward by experts or relevant research results. So, from the expert opinions above, the researcher concludes that the hypothesis is a temporary answer that can later change. The F test is used to determine the level of significance of the influence of independent variables together on the dependent variable. The degree of confidence used is 0.05 by comparing the calculated F and F table (Ghozali, 2006). The F test is used to determine the extent to which the dependent variables simultaneously used are able to explain the independent variables. Proof is done by comparing the critical value of Ftable with the calculated F value against the variance analysis table. If the calculated F value > Ftable then the Null Hypothesis (Ho) is rejected and the Alternative Hypothesis (Ha) is accepted. This means that statistically the data is used to prove that all independent variables have an effect on the dependent variable.

B. Discussion

Learning Models are very much needed by Researchers and educators, because the success or failure of Students in learning depends on the right learning model used according to the material being studied so that the learning designed can be more varied, so in this study on the Medicinal Plants material the method used is the exploration and characterization method.

The application of the exploration and characterization method in this study aims to determine the data on the environmental care values of Students who are taught using the exploration and characterization method. The data obtained in this study are the initial test score data, post-test, gain score results, the average value of the Students' environmental care values so that later the influence of the exploration and characterization methods used will be seen.

The use of this exploration and characterization method shows the environmental care values of Students in the cognitive domain, namely the results of the test scores that are tested. The data on the results of the Students' test scores before using the exploration and characterization method by conducting an initial ability test obtained an average of 28.6% by looking at these results it can be seen that the average value of the initial test of mastery is very lacking with the indicator of the environmental care attitude skill assessment score. This is usually caused because in the implementation of the initial test, students were given learning questions using the exploration and characterization method. The data on the results of the student test scores after using the exploration and characterization method with the provision of a post-test obtained an average of 63.53%. From the results of this average score, it can be seen that there was an increase in the student test score because the exploration and characterization method has advantages in its application, namely environmental learning that provides a positive nuance, more real learning and is based on natural resources. This method can encourage students to directly explore the learning process and foster activeness and scientific attitudes

The results of the gain calculation obtained from the test testing then obtained the final increase score value, it can be seen that in the indicator of understanding Medicinal Plants, a gain of 0.44 is obtained in the moderate category, and the acquisition from the observation sheet for the category of understanding Medicinal Plants is 100%, because during the observation activity the teacher guides observing activities

during the learning process

The gain score results on the indicator of maintaining environmental sustainability are 0.65 in the moderate category, while the acquisition value from the observation sheet is 90%, Students are quite capable of maintaining environmental sustainability based on the actions given

The gain score results on the indicator of Caring for medicinal plants is 0.61 in the moderate category, while the acquisition value from the observation sheet is 100%, Students have the ability in activities to care for plants and the surrounding environment.

The gain score results on the indicator Preventing environmental pollution are 0.47 in the moderate category, while the acquisition value from the observation sheet is 80% Students can apply the nature of not polluting the surrounding environment. The gain score results on the indicator of understanding the role of plants in environmental sustainability, which is 0.46, are in the sufficient category, while the value obtained from the observation sheet is 90%, Students are able to answer and provide explanations when faced with a problem. Overall, the results of the study indicate that the application of exploration and characterization methods has a significant effect on improving Students' skills in understanding Medicinal Plants, maintaining environmental sustainability, caring for medicinal plants, preventing environmental pollution, and understanding the role of plants. and has no significant effect on improving the skills of applying concepts by Students. From the results of the percentage of scores obtained on the observation sheet, according to the indicator of caring for the environment, it was obtained that for the indicator of understanding Medicinal Plants, a score of 100% was obtained, this means that the ability to understand Medicinal Plants owned by Students is very good. For the indicator of maintaining environmental sustainability, a score of 90% was obtained, this means that the ability to maintain the environment of Students is classified as very good. The indicator of caring for medicinal plants obtained a score of 100%, this means that the ability of Students in the indicator of activities to care for medicinal plants is classified as sufficient. The indicator of preventing environmental pollution obtained a score of 80%, this means that the ability of Students in maintaining the environment is classified as very good. The indicator of understanding the role of plants obtained a score of 90%, which means that students' ability to understand the role of plants is classified as very good.

The results of the normality test on the initial test and post test with a real level of 0.05 with the number of students (N) 32 with L_table 0.156 are, for the Initial Test L_count < L_table which is 0.115 < 0.156 so that it is stated that the initial test value data is normally distributed. Likewise with the results of the normality test on the post test obtained L_count < L_table which is 0.147 < 0.156 also stated that the data is normally distributed. Based on the homogeneity test data, it is known that the initial test variance (s2) = 71.58 and the post test variance (S2) = 110.16, then F_count = 1.53 is obtained. From the F distribution list, F value for $\alpha = 0.05$ dk numerator (V) = (n - 1) = (32 - 1 = 31) dk denominator (V) = (n - 1) = (32 - 1 = 20) So that Ftable = 1.56 is obtained. Because F_count < F_table = 1.94 < 1.56, it can be stated that the data presented has a homogeneous variance

The results of the hypothesis test calculation that has been carried out, it is known that the number of squares of deviation is 1,969.909 by using this value, it can be seen that the amount of t_count is 28.54 The t_count value obtained is then compared with the t_table value with dk (32) = 1.69 Based on the results of the data calculation above, it can be seen that the environmental care value of students using the exploration and characterization methods has a real influence. This can also be seen from the results of the gain score calculation, where the gain score results for each indicator are classified as moderate. This indicates that the environmental care value possessed by students has increased. The final gain score which is still relatively low is in the indicator of maintaining understanding of Medicinal Plants, which only obtained a gain score of 0.44 in the moderate category. Several things that cause this indicator not to be achieved are that students still find it difficult to connect what is learned or obtained with the reality or problems they encounter in the field.

Based on the results of the calculations that have been obtained, it can be seen that in this study the alternative hypothesis (Ha) is accepted while rejecting the null hypothesis (Ho), which means that it can be stated that there is a significant influence.

According to Dantes (2012), a hypothesis is a presumption or assumption that must be tested through data or facts obtained through research. According to Sugiyono (2009), a hypothesis is an answer that is still temporary to the formulation of a research problem, where the formulation of the research problem has been stated in the form of a question. The hypothesis is said to be temporary because the answer

given is only based on theory. Borg and Gall (1979: 61) proposed the following requirements for a hypothesis: 1) The hypothesis must be formulated briefly but clearly., 2) The hypothesis must clearly show a relationship between two or more variables, 3) The hypothesis must be supported by theories put forward by experts or relevant research results. So, from the expert opinions above, the researcher concludes that the hypothesis is a temporary answer that can later change. The F test is used to determine the level of significance of the influence of independent variables simultaneously on the dependent variable. The degree of confidence used is 0.05 by comparing the calculated F and F table (Ghozali, 2006). The F test is used to determine the extent to which the dependent variables simultaneously used are able to explain the independent variable. Proof is done by comparing the critical value of Ftable with the calculated F value against the variance analysis table. If the calculated F value> Ftable then the Null Hypothesis (Ho) is rejected and the Alternative Hypothesis (Ha) is accepted. This means that statistically the data is used to prove that all independent variables have an effect on the dependent variable.

CONCLUSION

Based on the results of the analysis obtained from the initial test and post-test, then the gain is calculated, then the Biology Education FKIP UISU has obtained a final increase score which is quite good, as well as related to the calculation of the observation sheet that has been assessed. Each indicator of the environmental care value shows a good increase in gain on the indicator of maintaining environmental sustainability, namely 0.65 is in the moderate category, while the value obtained from the observation sheet is 100%

Based on the results of the data analysis obtained from the calculation of the observation sheet, a fairly high percentage of the final score is obtained, namely 100% on the indicator of understanding Medicinal Plants and plant care activities

Based on the results of the hypothesis test, the T_count Value> T_table or 28.54> 1.69 at a confidence level of 0.05, there is a significant influence of the use of exploration and characterization methods on the environmental care value of Biology Education Students FKIP UISU Medan

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