

P-ISSN: 2338-8617

E-ISSN: 2443-2067

Jurnal Ilmiah
PEURADEUN



Vol. 9, No. 1, January 2021

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JIP
The International Journal of Social Sciences
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DOI Prefix Number: 10.26811



ACCREDITED "B" by the Ministry of Ristekdikti
from October 30, 2017 until October 30, 2022

The Analysis of Student Character Values in the Use of Secondary Metabolic Utilization Lab Module

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Article in Jurnal Ilmiah Peuradeun

Available at : <https://journal.scadindependent.org/index.php/jipeuradeun/article/view/484>

DOI : <http://dx.doi.org/10.26811/peuradeun.v9i1.484>

How to Cite this Article

APA : Nurhafidhah, N., Hasby, H., & Alvina, S. (2021). The Analysis of Student Character Values in the Use of Secondary Metabolic Utilization Lab Module. *Jurnal Ilmiah Peuradeun*, 9(1), 179-188. doi:10.26811/peuradeun.v9i1.484

Others Visit : <https://journal.scadindependent.org/index.php/jipeuradeun/article/view/484>

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THE ANALYSIS OF STUDENT CHARACTER VALUES IN THE USE OF SECONDARY METABOLIC UTILIZATION LAB MODULE

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Received: Dec 09, 2019

Accepted: Sep 15, 2020

Published: Jan 30, 2021

Article Url: <https://journal.scadindependent.org/index.php/jipeuradeun/article/view/484>

Abstract

The values of character in the classroom can be applied through practical activities. Therefore, the learning needs to be applied using lab modules that foster student character values. The purpose of this study was to describe the value of independent character, Environmental Awareness, and curiosity of students on the application of the lab module for the use of secondary metabolites. The research was a descriptive study. It was conducted at Samudra University, Langsa City. The research subjects were students of chemical education at FKIP Samudra university. Data in this study were obtained through interviews and questionnaires. The questionnaire analysis technique was performed using a percentage formula and interpreted to determine the student character value categories. The results showed the average student character values in the use of the lab module secondary metabolite utilization are 84% in the excellent category. Based on the statistical tests, sig. 0.00 showed that the character values of students in the use of lab modules were on average above 50. The results of this study are expected to be information for researchers to develop integrated lab modules for character values.

Keywords: *Character; Independent; Environmental Awareness; Curious; Lab Module.*



A. Introduction

The government has an important role in including character education in legislation. This has been done, one of them as stated in the Law of the Republic of Indonesia Number 12 of 2012 concerning Higher Education. The higher education system must also always be evaluated so that it can keep up with the changing times and changes in student behavior or character (Manurung and Rahmadi, 2017). Independent character, environmental awareness, and curiosity are some of the expected character values in students. Environmental awareness Characters of students can be improved by using modules containing character values (Putri, et al., 2017).

Many ways and materials can be created to educate, foster, and develop, and build the character of students. Character education can be given in an integrated manner (included) in subjects that are already set in the curriculum, including subjects' materials. Character education can also be included inclusively in teaching materials. So, character education can be included in the study of religion, art, language, and literature in Indonesia, history, mathematics, and others (Mardiyah, 2017). The values of character education in classroom learning, both the material and the learning process need to be instilled properly in students, which will eventually be formed into a character. One mediation of character value development is through the application of lab modules.

Learning by using a module is a specific strategy for organizing individual learning. The learning module, as developed in Indonesia, is a package of learning materials that contain descriptions of the study purpose, a lecturer's guide that explains how to teach effectively, student reading materials, answer sheets on student paper sheets, and learning evaluation tools (Mahmudah, et al., 2018).

The module applied is a lab module that has been developed from the study of inventory several research results on secondary metabolites utilization. Secondary metabolites are part of the subject matter of natural chemistry courses. Students can obtain secondary metabolites from plants that are known as medicinal benefits. This can be done in the chemical practicum of



natural substances, through the isolation of secondary metabolite compounds, consisting of extraction, fractionation, purification, and identification.

The lab module is very similar to the learning module. This is because, in the lab module containing the titles of the practicum, the purpose of the practicum, the theoretical underpinning of the practicum, the tools and materials, and the working procedure of the practicum, a worksheet containing the results of observations during the practicum (Mahmudah, et al., 2018).

The use of the lab module secondary metabolites utilization is expected to help the formation of student character, enrich the chemistry of natural recovery, and arouse the curiosity of young researchers, and improve the quality of chemical lectures.

B. Method

This research is a descriptive study that aims to find out the character values of students after the use of the lab module secondary metabolites utilization. This research was conducted on 15 students of chemical education at Samudra University.

Data collection techniques used in this study was the interview and questionnaire. The interview instrument was used to determine students' opinions about the character values contained in the lab module secondary metabolites utilization. The questionnaire instrument was used to obtain information about the value of independent character, environmental awareness, and students' curiosity after the use of the lab module. The form of the Questionnaire is several questions compiled with answers provided (structured questionnaire) using a Likert scale (strongly agree, agree, disagree, and strongly disagree). Before being used, the questionnaire instrument was empirically validated to obtain valid data. The results of the questionnaire validation obtained 14 valid items from 27 questions answered by students. With a reliability value of 0.930, the category is very reliable.

The interview results were analyzed descriptively to support primary data, the results of questionnaire answers. The results of the questionnaire answers were analyzed by giving a score on each student's answer and a percentage calculation was made (Arikunto, 2013). Percentage values are



described according to the criteria in Table 1. Next, the student score calculation data is statistically analyzed to find out the character values of students in the use of lab modules above 50 on average.

Table 1. Interpretation of Character Percentage Criteria

The Range percentage (%)	Criteria
81 - 100	Very good
61 - 80	Good
41 - 60	Fairly
21 - 40	Poor
≤ 20	Very poor

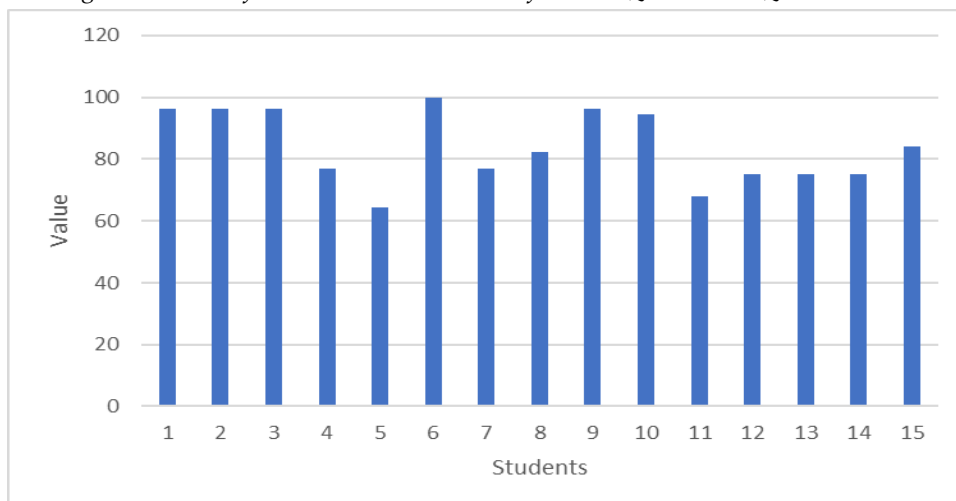
(Adaptation: Arikunto, 2013)

C. Result and Discussion

1. Result

The results of each student's answers to the questionnaire questions of independent character, environmental awareness, and curiosity assessment can be seen in Figure 1.

Figure 1: Value of Student Answer Results for Each Question in Questionnaire



Based on Figure 1, one of the 15 students who were sampled received the highest score, while the average grade was 84. There were no students who scored below 50. Furthermore, the student scores on each aspect of the character measured can be seen in Figure 2.

Figure 2: Value of Student Answer Results in each Aspect of Character Value

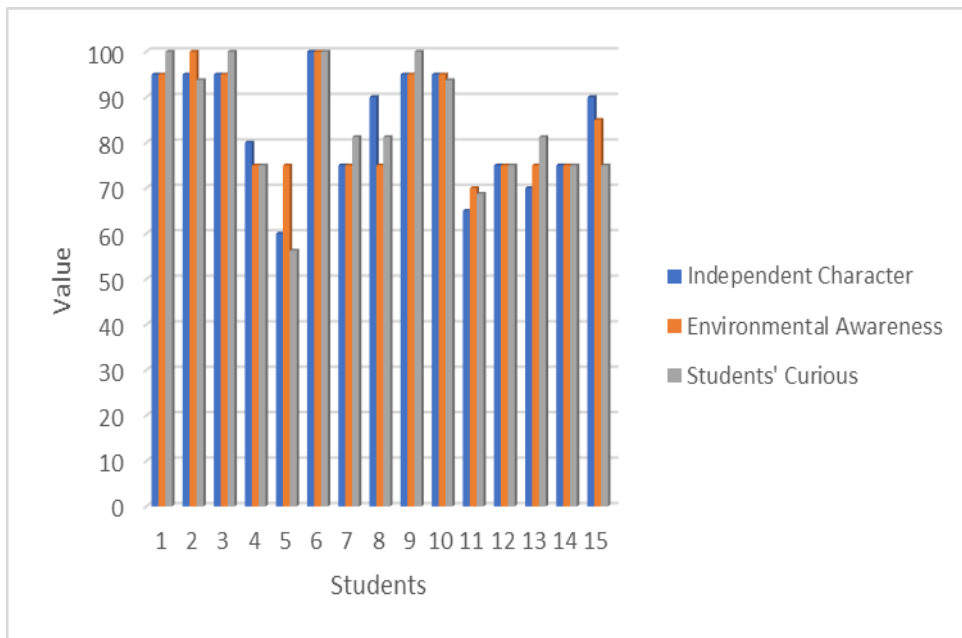


Figure 2 shows that in the aspect of independent character, only one student received the highest score of 100. Whereas in the aspect of character the environmental awareness, two students got the highest score. Different in the aspect of the curiosity character, 4 students get the highest score. As a student's score on each question, in each aspect of the character measured there were no students who scored below 50. The results of the percentage calculation at student character scores as a whole can be seen in Figure 3.



Figure 3: Percentage of Student Character in Every Aspect

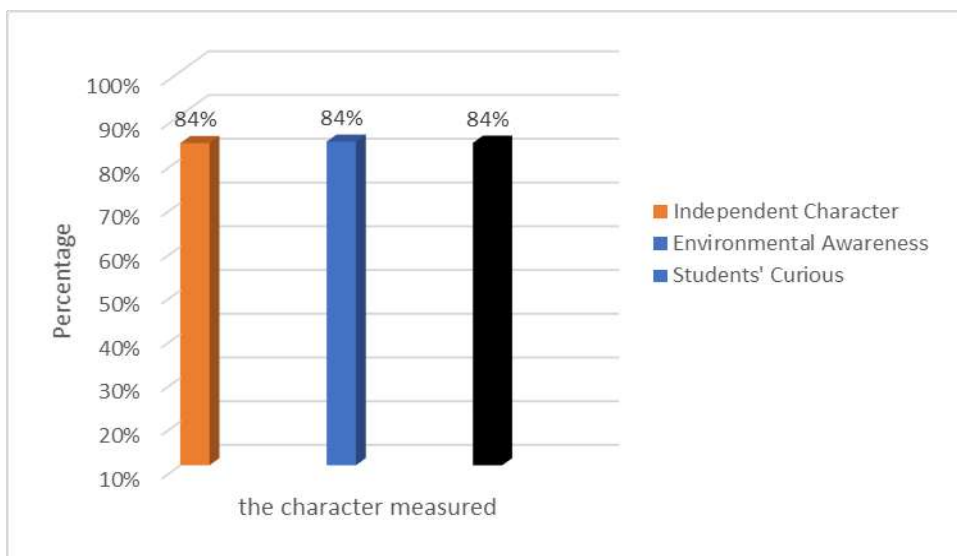


Figure 3 shows the percentage of overall student character, which is 84%. Percentage values obtained are the same for every aspect of the character being measured. The description of the student character values after the use of the lab module secondary metabolites utilization was statistically calculated with the help of SPSS. The hypothesis proposed is that the student's character score is at most 80 than expected (H_a).

Table 2. Test results for one sample test

One-Sample Test						
	Test Value = 0					
	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Character value	27,458	14	,000	83,73333	77,1927	90,2739

The results of the one-sample t-test in Table 2 show that t count = 27.458. T table is obtained with df = 15, sig 5% (1 tailed) = 1.761. Because t table <from t count (1.761 <27.458), then H_0 is accepted, meaning that the highest student character value of 80 than expected is not proven, even more than expected that is equal to 90.2739.



Table 3. Normality Test Results for Student Character Value

One-Sample Kolmogorov-Smirnov Test		Nilai Karakter
N		15
Normal Parameters ^b	Mean	83,7333
	Std. Deviation	11,81081
Most Extreme Differences	Absolute	,230
	Positive	,182
	Negative	-,230
Test Statistic		,230
Asymp. Sig. (2-tailed)		,032 ^c

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

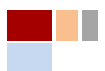
The normality test results showed the Kol-Smirnov value of 0.230 and Asymp. sig is equal to 0.032 (<0.05), so it can be concluded that the data are normally distributed.

2. Discussion

Character education has a very important role in building student character. Students who have the character of faith and devotion, care, independence, tenacity, curiosity, ability, and high motivation are believed to do the best (Supriyadi, 2011). Therefore, character education needs to be integrated into learning, in the form of learning activities, learning materials, and teaching materials used.

The character education values that are integrated into operational learning are religion, honest, tolerance, discipline, hard work, creativity, independence, democratic, curiosity, national spirit, love of the motherland, respect for achievement, friendship/communicative, peace-loving, likes to read, environmental awareness, social awareness, and responsibility (Judiani, 2010).

This study describes the value of independent character, environmental awareness, and curiosity of students after the use of the lab module. Lab modules can help students develop character values. For each material, the steps of the practicum activities arranged in the lab module require students to show their character values. As the results of



research on the study of aspects character values in science textbooks, it is known that through activities in science textbooks students are required to carry out activities with a disciplined attitude, communicate in working activities, mutual tolerance in expressing opinions and discussions, working hard to obtain the results of activities for answer questions, and be honest and responsible in carrying out faithful commands in student activities (Nurhafidhah, et al., 2018).

Based on Figure 3, the value of independent character, environmental awareness, and student curiosity on average is 84. It is statistically proven that the student character value in the use of lab modules is above 50. Supported by the results of interviews, students state that the lab module that applied gives stimulus to students to grow the character of environmental awareness because every practicum activity involves material from the surrounding environment. Likewise, independent character and curiosity appear in every practical activity.

Student character is an important aspect in the development of education in Indonesia. The formation of student character will determine the character of the nation's generation in the future. The active role of all parties is needed, namely universities, as a place for students to study at the highest level; government and society (Manurung and Rahmadi, 2017).

D. Conclusion

The application of the lab module secondary metabolites utilization showed an average value of independent character, environmental awareness, and student curiosity of 84% in the very good category. Based on the results of statistical tests, sig. 0.00 shows that the character values of students in the use of lab modules are on average above 50. So, it can be concluded that the lab modules secondary metabolites utilization has integrated the value of independent characters, the environmental awareness, and curiosity.



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