AGRICULTURAL EDUCATION OF PRIMARY SCHOOL STUDENTS IN EFFORT TO REGENERATE FARMERS IN BAYONGBONG, GARUT

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Abstract. The farmer crisis is a problem that must be resolved immediately. Several reasons have been identified regarding the young generation's low interest in becoming farmers due to negative stigma, including: that farming is seen as a less promising job, poor, dirty, etc. It is hoped that this research can find factors that can encourage farmer regeneration, specifically aiming to: find out the factors that support agricultural education for the younger generation, especially elementary school students, find the right strategy for educating the younger generation. The research was carried out during 3 (three) March-June 2022 in Bayongbong District, on a sample of 70 people from 204 elementary school (SD) students, who were determined using the Slovin formula with a 10 percent gallat. The research method is quantitative supported by qualitative data. The data analysis used is descriptive analysis and multiple linear regression analysis. Data collection uses observation and direct interviews using questionnaires whose validity and reliability have been tested. Research results: (1) the agricultural education carried out was still considered unsatisfactory by respondents (58.6% in the medium category); (2) influencing factors, namely; enjoyment ($p<0.05$), interest ($p<0.01$), agricultural related material ($p<0.1$), and parental role ($p<0.1$).
Keywords: *agricultural education, farmer regeneration, multiple linear regression, elementary school students*

Introduction

The difficulty of regenerating young farmers is a problem that occurs everywhere. There are many reasons why the younger generation is reluctant to enter the agricultural sector, one of which is the younger generation's view of the farming profession which has resulted in a decrease in the younger generation's interest in the agricultural sector. Farming is still seen as a profession that is unpromising and offers no hope. Farmers often experience losses and struggle with poverty (Wiyono et al., 2015). Bayongbong District is one of the regions in Garut Regency. The potential of natural resources and human resources in Bayongbong District is very supportive of agricultural development. With a land area of 5,061 ha consisting of 3,711 ha of land and 1,350 ha of rice fields, and a population of 106,122 people, consisting of 54,468 men and 51,654 women. Judging from age, the largest population in Bayongbong District is in the 0-15 year age group, namely 35,481 people (34.40%). Thus, the population in Bayongbong District is included in the young population category. The young population can be an anticipation so that the agricultural sector continues to grow and exist. The young population can also be a hope that the regeneration process of young farmers will continue in sustainable agricultural development. One way to speed up the regeneration process of farmers is through early agricultural education so that it can attract children's interest. In accordance with Saputro and Saputro (2020) who explained that agricultural education

from an early age is considered very appropriate to attract children's interest and is tailored to the needs, abilities and enjoyment of each child so that the impact can minimize the impact of the younger generation's disinterest in the agricultural sector. Based on the explanation above, to change the views of the younger generation and to foster the younger generation's interest in the agricultural sector and to utilize the potential of the young population, counseling and research regarding agricultural education for elementary school students is needed in the context of agricultural regeneration in Bayongbong District.

Based on the description in the background, the problem formulation in the Final Project research is as follows: (1) What is the level of agricultural education for elementary school students in the context of regenerating farmers in Bayongbong District? (2) What factors influence agricultural education for elementary school students in the context of farmer regeneration? (3) What strategies are needed to improve agricultural education for elementary school students in the context of farmer regeneration? Referring to the problem formulation above, the objectives to be achieved in this research are as follows: (1) Describe the level of agricultural education for elementary school students in the context of regenerating farmers in Bayongbong District, (2) Analyze the factors that influence agricultural education for elementary school students in the context of farmer regeneration in Bayongbong District, (3) Formulate appropriate strategies to improve agricultural education for elementary school students in the context of regenerating farmers in Bayongbong District.

Framework of thinking

In this research, agricultural education is a variable (Y) which includes knowledge, attitudes and skills in accordance with Bloom's Theory. Interest in learning (X1) includes enjoyment, interest and involvement referring to research by Effendy et al. (2020), as well as agricultural material as an indicator that is thought to influence agricultural education referring to research by Roidah (2014) as well as Engkos and Kuncoro (2012). External factors (X2) include, the role of parents referring to research by Ranzez et al. (2020), social support referring to research by Sepfitri (2011), and counseling activities referring to several studies, namely Effendy and Krisnawati (2020), and Effendy et al. (2020) (*Figure 1*).

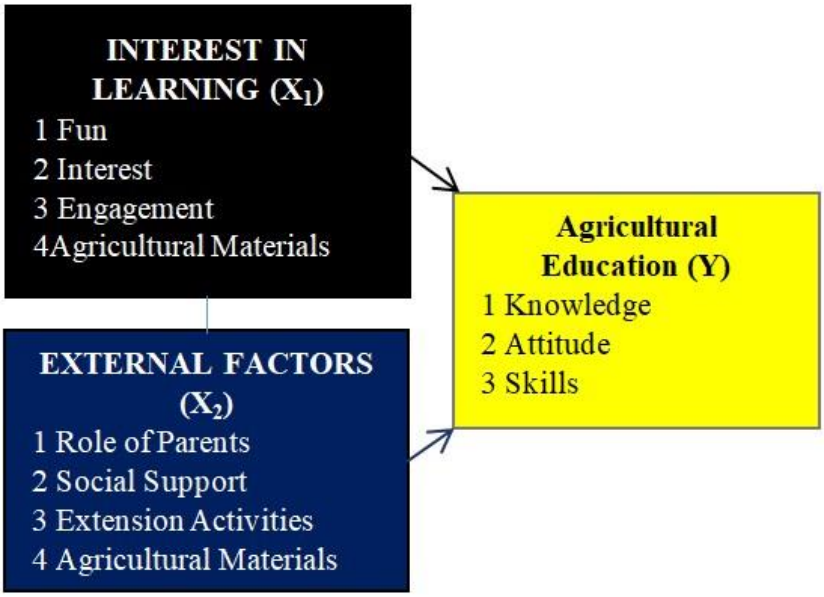

Figure 1. *Framework for agricultural education research.*

Materials and Methods

According to Sugiyono (2017), research methods are basically a scientific way to obtain data with specific purposes and uses, and research is based on rational, empirical and systematic scientific characteristics. In this research, the type of research used is a quantitative method supported by qualitative methods. The research was carried out for three months, from March 15 to June 13 2022. The research location was in Bayongbong District, Garut Regency, West Java Province. The population determined in this research activity was grade 4 elementary school (SD) students, taken from 6 schools spread across three villages, namely in Banjarsari Village, Mekarjaya Village, and Salakuray Village. The total population of the three villages is 204 people. The sample used as respondents was determined through calculations using the Slovin formula with an error rate of 10 percent, found to be 67.11 people rounded up to 70 people. The data used in this study consists of primary data and secondary data. Data collection during the implementation of this research used observation methods, distributing and filling out questionnaires and interviews.

Instrument testing is done by testing validity and reliability. According to Sugiyono (2017), a valid instrument means that the measuring instrument used to obtain data (measure) is valid. The results obtained from 50 questions, 47 questions were declared valid because the calculated r value was greater than r table and 3 questions were declared invalid because calculated r was smaller than r table. The invalid questions were numbers 13, 25 and 27 which were later corrected. According to Sugiyono (2017), an instrument is reliable if there is similar data at different times. A reliable instrument means an instrument that, when used several times to measure the same object, will produce the same data. The results of the instrument reliability test can be stated that the instrument used is reliable. This is because the Cronbach's alpha value obtained is 0.932 and is greater than 0.60 in accordance with Ghazali (2011) statement that the instrument can be declared real if the Cronbach's alpha value is ≥0.60. The data analysis used in this research is descriptive analysis and multiple linear regression analysis. Descriptive analysis is carried out to provide an overview of the data that has been collected and its

presentation in the form of tables and percentages. Meanwhile, multiple linear regression analysis was used to determine how much influence the learning interest variable (X_1), external factors (X_2) had on the dependent variable agricultural education (Y).

Results and Discussion

General condition of the region

Bayongbong District is one of the sub-districts in Garut Regency which is located south of the capital city of Garut Regency, and its area is divided into 18 villages. The area of Bayongbong District is 5,061 ha, consisting of 3,711 ha of land and 1,350 ha of rice fields. In general, the characteristics of the Bayongbong District area are that it is a mountainous area with hilly natural conditions which has the lowest sea level at 720 meters above sea level and most of the land surface has a relatively steep slope. The total population in Bayongbong District in December 2020 was 103,142 people, consisting of 53,000 men and 50,142 women. The number of family heads is 30,081 families. Based on reference data from the Ministry of Education and Culture, the number of elementary schools (SD) in Bayongbong District is 55 schools spread across 17 villages.

Respondent characteristics

It is known that the majority of research respondents come from families whose parents' work is not in agriculture and is female, as shown in *Figure 2*. Based on the results of data processing, the number of student respondents spread across 3 villages and from 6 elementary schools (SD), namely 70 people, consisting of 34 male students (49%) and 36 female students (51%). Most of the students' parents work in the non-agricultural sector, as many as 54 people (77%), while those who work in the agricultural sector are 16 people (23%).

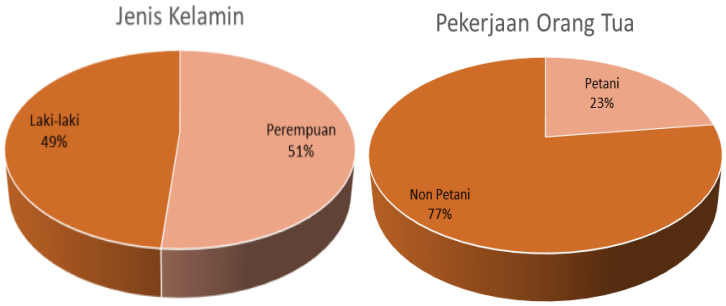

Figure 2. *Characteristics of respondents study.*

Variable description

The description of learning interest is used to determine the level of learning interest possessed by the respondent. Interest in learning, which is variable X1, has four indicators, namely enjoyment, interest, involvement and agricultural material. *Table 1* shows that the majority of students rated their enjoyment of farmer work and agricultural activities as being in the medium category, namely 51 students (72%). Then students assessed their interest in agriculture as being in the medium category, namely

45 students (64.3%). So socialization about agriculture both in schools and in the surrounding environment still needs to be done. Some students also assessed that their involvement or participation in the agricultural sector was in the medium category, namely 48 students (68.6%). So it can be interpreted that student involvement is quite good, student involvement in agricultural activities is usually influenced by family background. Students who are often involved in agricultural activities usually have parents who are farmers or have parents who often plant plants in their yard. A total of 45 students (64.3%) thought that their mastery of agricultural material in the field of agriculture was in the medium category. So it can be interpreted that students already know some material about agriculture because they observe the surrounding environment and get material in certain lessons and from the people around them.

Table 1. *Interest in learning.*

No	Indicator	Percentage (%)		
		Low	Moderate	High
1	Pleasure	7.1	72.9	20.0
2	Interest	11.4	64.3	24.3
3	Involvement	7.1	68.6	24.3
4	Agricultural Materials	10.0	64.3	25.7
	Total	8.9	67.5	23.6

External factors are factors that come from outside that can increase the interest of millennial farmers as successors to family farming. There are several indicators in the external factor variable, including the role of parents, social support and counseling activities (*Table 2*). A total of 47 students thought that the role of parents in agricultural education was in the medium category (67.1%), meaning that the role of parents was quite good. This can be seen from the answers to the questionnaire filled out by students, stating that some parents have introduced basic agriculture. Most students assessed that the social support they received was in the medium category, namely 49 students (70%). So it can be interpreted that the social support provided by those closest to students regarding agriculture is quite good. A total of 45 students (64.3%) assessed that the counseling activities they received were also in the medium category. So it can be interpreted that extension activities are classified as moderate, this is because until now there has been no special extension program given to elementary school students to educate them about agriculture. In this research, agricultural education is a fixed variable whose influence is examined on the two previous variables so that it can be seen how much influence it will have. The indicator assessment to measure the level of agricultural education for elementary school students in the context of farmer regeneration consists of knowledge, attitudes and skills (*Table* 3).

Table 2. *External factor*.

No	Indicator	Percentage (%)		
		Low	Moderate	High
1	The Role of Parents	10.0	67.1	22.9
2	Social Support	10.0	70.0	20.0
3	Extension Activities	18.6	64.3	17.1
	Total	12.9	67.1	20.0

Table 3. *Agricultural education.*

No	Indicator	Percentage (%)		
		Low	Moderate	High
1	Knowledge	15.7	58.6	25.7
2	Attitude	15.7	51.4	32.9
3	Skills	12.9	65.7	21.4
	Average	14.8	58.6	26.7

Students' knowledge in this study was measured in the form of statements where the statements were related to basic agricultural material. The basic aim is to test students to what extent they know the field of agriculture. *Table 3* shows that the majority of students think that the knowledge they have about agriculture is in the medium category, namely 41 students (58.6%). Students have a fairly good level of knowledge regarding basic agriculture, but they still need to be given further understanding through extension activities so that students' level of knowledge can increase and increase. Students' attitudes in this study were measured in the form of statements where the statements were related to students' willingness to apply the agricultural knowledge they had. The research results showed that 30 students (51.4%) thought they had a medium level of attitude. Students have a sufficient level of willingness to apply agricultural knowledge, so it is necessary to carry out extension activities that can improve student attitudes. The level of student skills in this study was measured in the form of statements or questions related to students' skills in implementation or practice related to agriculture. The results of research on student skills show that the majority of students, 46 students (65.7%) assess their skill level as being in the medium category. Students have a sufficient level of skill in agricultural activities, but this needs to be improved through extension activities, method demonstrations or pilot plots.

Classic assumption test

The classical assumption test is the initial stage used before carrying out multiple linear regression analysis. According to Sujarweni (2014), a multiple linear regression model can be called a good model (has accuracy in estimation, is unbiased and consistent) if the model meets the assumptions of normality and is free from the classic assumptions of multicollinearity, heteroscedasticity and autocorrelation (time series data). Based on the results obtained, the plotting data (dots) follow a diagonal line, so the regression model can be said to have a normal distribution. The tolerance value obtained from all indicators is greater than 0.100 and the VIF value for all indicators is less than 10.00, so it can be interpreted that there are no symptoms of multicollinearity in the data used. In the scatterplot image, the dots spread above and below the number 0 on the Y axis and there is no clear pattern, so it can be interpreted that the data has no symptoms of heteroscedasticity. The data used has no symptoms of autocorrelation, because the Durbin Watson value lies between du and (4-du) (Formula=du(1.8375)<Durbin Watson(1.872)<4-du(2.1625).

Regression analysis results

The results of the regression analysis (*Table 4*) show that enjoyment, interest, agricultural material and the role of parents have a significant influence ($p<0.1$) on agricultural education for elementary school students in the context of farmer regeneration with a coefficient of 0.815. Based on the SPSS output on the Unstandardized Coefficient (beta column) the regression equation can be formulated as

follows: $\acute{Y}=0.815+0.152X_{1.1}+0.326X_{1.2}+0.171X_{1.4}+0.151$. This equation can explain that the constant value is 0.815 and is positive. A positive sign means that it shows a unidirectional influence between the independent variable and the dependent variable. This shows that if all independent variables consisting of several indicators have a value of zero (0) percent or have not changed, then the value of education or the dependent variable is 0.815. The magnitude of the independent indicators influencing the education variable is quite large, as can be seen from the determinant coefficient (R-Square) value of 0.556. This can be interpreted that the ability of independent indicators to influence fixed variables has a contribution of 0.556 (55.6%) in other words, there are still other indicators and variables outside research that can influence fixed variables by 0.444 (44.4%).

***Table 4**. Regression analysis results.*

No	Category	Unstandardized coefficient B	t	Sig.	Information
1	R2	.556			
2	Constant	.815	2.773	.007	
3	Pleasure (X1.1)	.152	2.272	.027	Have a real impact*)
4	Interest (X1.2)	.326	3.293	.002	Very real impact**)
5	Involvement (X1.3)	-.059	-.762	.449	Unreal influence
6	Agricultural Materials (X1.4)	.171	1.740	.087	Have a real impact*)
7	The role of parents (X2.1)	.151	1.829	.072	Have a real impact*)
8	Social Support (X2.2)	.018	.320	.750	Unreal influence
9	Extension Activities (X2.3)	.010	.194	.847	Unreal influence

Influence on agricultural education

Based on the results of the regression analysis, fun has a significance value of 0.027, meaning that fun has a significant or real effect on agricultural education because it has a significance value that is smaller than 0.05 (0.027<0.05). The regression coefficient value of pleasure is 0.152 and has a positive sign, meaning that pleasure is directly proportional towards increasing agricultural education in the context of farmer regeneration. If enjoyment increases by one unit, it will increase the agricultural education variable by 0.152 assuming the other independent variables remain constant. The results obtained are in line with the opinion of Gie (1995) in Indrawaty et al. (2018) that the pleasure of learning creates immediate attention, the pleasure of learning can make concentration easier, the pleasure can prevent external distractions, the pleasure can also strengthen the attachment of learning material in memory, and the pleasure can reduce the boredom of learning within oneself. Interest has a significance value of 0.002, meaning that interest has a significant or real effect on agricultural education because it has a significance value that is smaller than 0.01 (0.002<0.01). The regression coefficient value of interest is 0.326 and has a positive sign, meaning that interest is directly proportional to increasing agricultural education in the context of farmer regeneration. If interest increases by one unit, the agricultural education variable will increase by 0.326, assuming the other independent variables remain constant. The results obtained are in line with research by Hakim and Amir (2018) which states that students' interest in learning has a direct and significant influence.

Agricultural material has a significance value of 0.087, meaning that agricultural material has a significant or real effect on agricultural education because it has a significance value that is smaller than 0.1 (0.087<0.1). The regression coefficient value of agricultural material is 0.171 and has a positive sign, meaning that agricultural material is directly proportional to increasing agricultural education in the context of farmer regeneration. If agricultural material increases by one unit, it will increase the

agricultural education variable by 0.171 assuming the other independent variables remain constant. The role of parents has a significance value of 0.072, meaning that the role of parents has a significant or real influence on agricultural education because it has a significance value that is smaller than 0.1 (0.072<0.1). The regression coefficient value of the role of parents is 0.151 and has a positive sign, meaning that the role of parents is directly proportional to increasing agricultural education in the context of farmer regeneration. If the role of parents increases by one unit, the agricultural education variable will increase by 0.151, assuming the other independent variables remain constant. These results are in line with Rumbewas et al. (2018) who said that the role of parents has a huge influence on students' success in learning.

Simultaneously influence

Below are presented the results of a simultaneous analysis of independent variables on agricultural education for elementary school students (*Table 5*). Simultaneous influence is the amount of ability of all independent variables/indicators together to influence a fixed variable. To determine the simultaneous effect, you can use two methods, namely the simultaneous F test based on significance values and the simultaneous F test based on calculated values and tables. The simultaneous F test is based on the significance value according to Ghozali (2011), namely if the significance value is smaller than 0.05 (5%) then it means that the independent variable (X) simultaneously influences the dependent variable (Y). Meanwhile, the F test is based on calculated values and tables according to Sujarweni (2014), namely if the calculated F value is greater than F table, it means that the independent variable (X) simultaneously influences the dependent variable (Y). Based on the results obtained from the seven independent indicators, namely pleasure ($X_{1.1}$), interest ($X_{1.2}$), involvement ($X_{1.3}$), agricultural material ($X_{1.4}$), role of parents ($X_{2.1}$), social support*).

***Table 5**. Simultaneous analysis results.*

Model	Sum of square	Df	Mean square	F	Sig.
Regression	4.258	7	.608	11.086	.000[b]
Residual	3.401	62	.055	-	-
Total	7.659	69	-	-	-

Improvement strategy in agricultural education

The formulation of the priority scale in determining the extension design model is based on the Unstandardized Coefficients B value (*Figure 3*), namely interest with a value of 0.326 and is in the medium category, agricultural material with a value of 0.171, pleasure with a value of 0.152 and is in the category medium and the role of parents with a value of 0.151. So the strategy implemented is to increase agricultural education by increasing students' interest in new things in the field of agriculture, expanding the scope of agricultural material that is not yet known to students, taking advantage of students' enjoyment of playing to learn about agriculture, and involving the role of parents in encouraging, guiding, motivating and facilitating agricultural education for students. Based on the strategy that has been formulated, counseling is carried out in a participatory manner where students play the main role and participate in activities. The extension material is selected based on the priority of the measurement results, namely material that can invite students' interest and enjoyment during the extension. Extension materials also tend to be easy for students to understand and easy

to do or practice. The extension material in this final assignment activity is about agriculture in general and verticulture systems and planting methods. The extension media used are Extension Preparation Sheets (LPM), synopsis and extension materials in the form of printed media such as leaflets and electronic media such as PowerPoint and video/audio-visual shows. The methods used in this extension activity are lectures, discussions and method demonstrations. Extension activities were carried out in 6 elementary schools (SD) in 3 villages in Bayongbong District so that students could understand and understand agriculture and verticulture and could carry out and apply simple cultivation methods using used goods and utilizing narrow land.

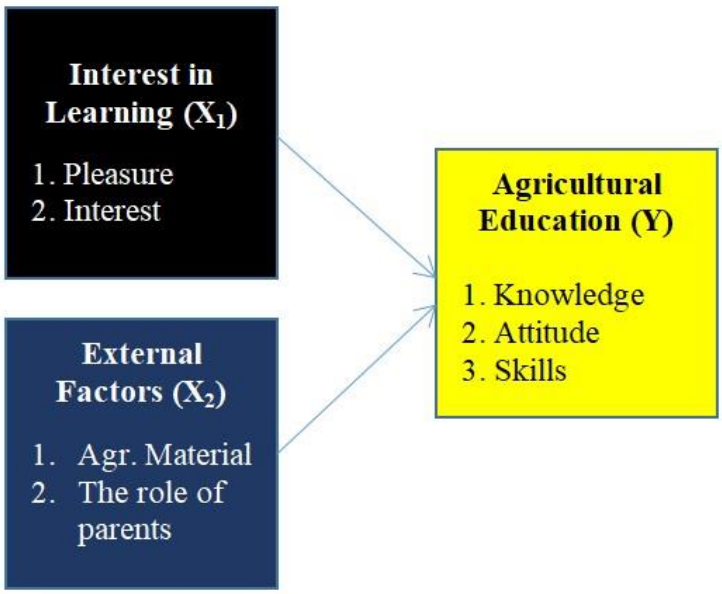

Figure 3. *Extension strategy model.*

Conclusion

The level of agricultural education for elementary school students, especially aspects of knowledge, skills and attitudes, is considered by the majority of students (58.6%) to be quite adequate. Interest in studying agriculture was assessed by most students (67.5%) depending on the enjoyment, attractiveness of agriculture, and involvement in agricultural programs. Most students (67.1%) agreed that interest in agriculture is determined by the role of parents, social support, and the existence of extension activities. Factors that influence agricultural education in elementary school (SD) students are a favorable attitude towards agriculture ($p<0.05$), while the attractiveness of agriculture, agricultural material presented, and the role of parents have an influence at the $p<0.1$ level. Strategies to increase elementary school students' interest can be carried out by socializing agricultural programs with interesting materials and programs, and parents need to be involved in motivating and guiding their children to be happy with agricultural activities.

Acknowledgement

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Conflict of interest

Carrying out this research was motivated solely by a sense of concern over the crisis of enthusiasm for young people to become farmers, so there is no conflict of interest related to the results of this research.

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