International Journal of Education, Information Technology and Others (IJEIT)
https://jurnal.unibrah.ac.id/index.php/IJEIT
Vol. 3, No.2, Agustus 2020

The Usefulness Concept Of Social Arithmetics For Social Sciences Learning Outcomes

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Article Info
Article History:
Received: June 16, 2020
Revised: June 27, 2020
Published: August 1, 2020
e-ISSN: 2623-2324
p-ISSN: 2654-2528
DOI: 10.5281/zenodo.3965705

Abstract:
Social arithmetic is used in solving everyday problems such as profit and loss, interest rates, discounted prices and tax calculations and others. Students also learn PPh material contained in social sciences subjects, students are expected to be able to understand the concept of social arithmetic. Do students who have a good understanding of the concept of social arithmetic can solve problems regarding PPh to the maximum. The study was conducted at Bekasi's Citra Mandala Middle School. The method that used in this study is a quantitative descriptive method with survey techniques through the correlation approach. Based on the calculation of the correlation index numbers of variables X and Y, the correlation index obtained = 0.90. rxy or r count is consulted with rtable with a significance level of 0.05 with the number of respondents 30 (n = 30) is 0.361, then r count is greater than rtable that is 0.90> 0.361 therefore Ho is rejected and Hi accepted. In other words the application of the mastery of the concept of social arithmetic to social sciences subjects gives positive results. The conclusion from the results of the study is that there is a significant positive relationship between the mastery of the concept of social arithmetic to social sciences learning outcomes.

Keywords: Mathematical Concepts, Social Sciences Subjects, Social Arithmetic.

INTRODUCTION

Understanding concepts is an important part in learning mathematics. In learning mathematics students must first understand mathematical concepts in order to be able to solve problems and be able to apply the learning in the real world. Students who will later contribute to the further development of mathematics or to apply mathematics in everyday life.

In addition, by connecting mathematical concepts with real life will make the process of learning mathematics will become more interesting, more real and useful. Therefore, it is expected to further increase interest and increase students' curiosity about mathematics.

Therefore, it is natural that even at the level of subject matter in school mathematical concepts are attached to various lessons. One of the sciences or subjects that have a connection with mathematics one of which is Social Sciences (IPS). Social sciences is a subject that studies various social science disciplines and basic human activities that are scientifically packaged.

One of the teaching materials available in social sciences that requires an understanding of mathematics is income tax (PPh). In solving problems related to income tax, the supporting concept that needed is social arithmetic. We know that social arithmetic is very useful in solving everyday problems such as profit and loss, interest rates, discounted prices and tax calculations and others. Therefore, before students receive PPh material in social sciences subjects, students are expected to be able to reach the concept of social arithmetic.

Therefore, if students have a good understanding of the concept of social arithmetic, students are expected to be able to solve problems regarding PPh can be resolved optimally. So with this mindset, mathematics and social sciences subjects have a special relationship in solving problems, especially in the calculation of income tax that uses the concept of social arithmetic.

Based on the description above, this research focuses on the usefulness concept of social arithmetic to social sciences learning outcomes.

Understanding is the ability that requires students to understand or understand about the subject matter delivered by the teacher (Arifin, 2009) Sudijono (2011), said that understanding is a person's ability to understand or understand something after something is known and remembered. Students can be said to understand if they can provide explanations or give a more detailed description of things by using their own words.

Meanwhile, according to Sudjana (2010), understanding is interpreted as the ability to connect relationships between elements of the whole message of an essay, including understanding comprehension. So if someone wants to understand something, then they must be able to connect something with what is already known. Understanding can be divided into three categories: the lowest level is understanding comprehension, the second level is understanding interpretation, third level understanding or the highest level is extrapolation understanding.

From some of the explanations above it can be concluded that understanding is the ability possessed by someone to explain or define information in their own words. Understanding is not just knowing, which is usually limited to recalling experience and producing what has been learned.

Concepts are defined as ideas or thoughts that are formed from special experiences. L. Bagus (2015), defines concepts as mental impressions, ideas used in thought. With the concept

someone is able to distinguish one object from another object and distinguish one idea from another idea.

Understanding the concept is very important, because the mastery of the concept will facilitate students in learning mathematics. In each learning effort is emphasized more on mastery of concepts so that students have a good basic stock to achieve other basic abilities such as reasoning, communication, connections and problem solving.

Social Sciences is the science that studies various social science and humonior disciplines as well as basic human activities that are scientifically packaged in order to provide insight and deep understanding to students. The breadth of social sciences covers a variety of social, economic, psychological, cultural, historical and political life, all of which are studied in this social science (Susanto, 2013).

Whereas Buchari (2013), defines IPS as an educational program which is a whole which primarily concerns people in the physical natural environment, as well as in their social environment.

Understanding social sciences according to Wikipedia is a group of academic disciplines that study aspects related to humans and their social environment. The purpose of social sciences learning is so that students can obtain knowledge, skills and examples of attitudes as provisions to face life with all its challenges. In addition, it is hoped that through social sciences learning, students will be able to develop logical and critical thinking skills in solving problems that occur in the community.

From the several social sciences mentioned above, it can be concluded that social sciences is an integrated study of social sciences and human sciences and basic human activities that are presented scientifically covering history, geography, sociology, anthropology, politics and economics. organized for learning purposes. Basically, social sciences is the study of all aspects of life and its interactions in society.

Buying and selling activities in the economic field will be directly related to the rules and calculations that emphasize and the solution requires mathematics. In trading there are two possibilities that will be experienced by traders, such as Traders will get a profit, or Traders will experience a loss. This is useful to help solve questions about income tax. That way what is expected by the teacher and students will be achieved with satisfying results.

RESEARCH METHODS

The research was conducted at the Citra Mandala Junior High School in Bekasi, Research Time In the 2019/2020 school year. The variables contained in this reseaech are: Variable X (Independent Variable): Understanding the Concept of Social Arithmetic. Variable Y (Bound Variable): Social Sciences Learning Outcomes PPh material. The method that used in this study is a quantitative descriptive method with survey techniques through the correlation approach. a. The target population in this research is all students of Citra Mandala Junior High School Bekasi. Affordable population is class VIII students of Citra Mandala Junior High School Bekasi. Sampling is done randomly by selecting one class using random sampling. The instruments that used in this study were in the form of multiple choice tests for Mathematics as many as 30 questions, and Social Sciences as many as 30 questions.

RESULTS AND DISCUSSION

For the research mastery instrument of the concept of social arithmetic (variable X) that has been tested were 30 multiple choice questions, with 4 items selected such as A, B, C and D. After being tested for validity with the help of facilities in Ms Excel, the 25 items were stated valid, while 5 items were declared invalid, such as items 3,11,17,18 and 28.

For income tax research instruments on social sciences subject (variable Y) that has been tested were 30 multiple choice questions, with 4 item choices, A, B, C and D. After being tested for validity with the help of facilities in Ms Excel, the 25 items were declared valid, while 5 items were declared invalid such as item number 5,6,19,27 and 28.

For the reliability test results of the 25 items of arithmetic concept mastery (X) obtained 0.855 with a very high level of reliability for the instrument of understanding social income tax material (variable Y), with the same number of items, then the results obtained reliability number is 0.878. Based on the data from the test results, then 25 items of variable X and variable Y can be used again for further tests to 30 sample students.

Understanding the Concept of Social Arithmetic Of 30 students obtained the lowest value of 40 and the highest value of 92. With a range (R) = 52, many class intervals (K) = 6, the length of the class interval (i) = 9. From the calculation of the frequency distribution obtained an average count (Mean) = 64.7; Median = 65.6; Mode = 67.31; Standard Deviation (SD) = 11.61; and Variance (S) = 134.91. From the data obtained social sciences learning outcomes lowest value 48 and the highest value 92 with a range (R) = 44, many class intervals (K) = 6, length of class intervals (I) = 7. From the calculation of the frequency distribution obtained an average (Mean) = 66.87; Mode = 64.3; Median = 65.7; Standard Deviation (SD) = 11.02; and Variance (S) = 121.43.

a. Data Normality Test For the mastery of the concept of social arithmetic (variable X), the average value is 64.7 and the standard deviation is = 11.61. Calculate each default value with the formula $Z_i = x_ (i - \bar{X}) / S = (40-64.7) / 11.61 = -2.13$, then find the price of each f (Z) by looking at the table area under the normal curve. Look for the price of S (Z), is the frequency of each score divided by the amount of data (n = 30). Specified prices | f (zi) -S (Zi) | and price | f (zi) -S (Zi) | maximum is L_count. From the calculation L_count = 0.123 while the L_table for n = 30 with a significance level of 0.05 is 0.161. L_count <L_table then it can be concluded that variable X data is normally distributed.

To social sciences understanding income tax (variable Y) obtained an average value = 66.87, standard deviation = 11.02. Calculate each default value with the formula $Z_i = x_ (i - \bar{X}) / S = (48-66.87) / 11.02 = -1.71$, Looking for the price of each f (Z) by looking at the area table under the normal curve. Look for the price of S (Z), which is the cumulative frequency of each score divided by the amount of data (n = 30), then determine the price | f (zi) -S (Zi) | and price | f (zi) -S (Zi) | maximum is L_count. From the calculation L_count = 0.0935 while the L_table for n = 30 with a significance level of 0.05 is 0.161. L_count <L_table then it can be concluded that Y variable data is normally distributed.

From the results of the significance of the regression test obtained F_ (count) <F_ (Table) (1.52 <2.43) at a significant level $\alpha = 0.05$ with n = 30; k = 10; dk numerator = 9 and dk denominator = 19, then the null hypothesis (Ho) is accepted which means linear regression means that there is a linear relationship between the two variables.

Furthermore, the linearity relationship between variable X and Y can be visualized in the image below:

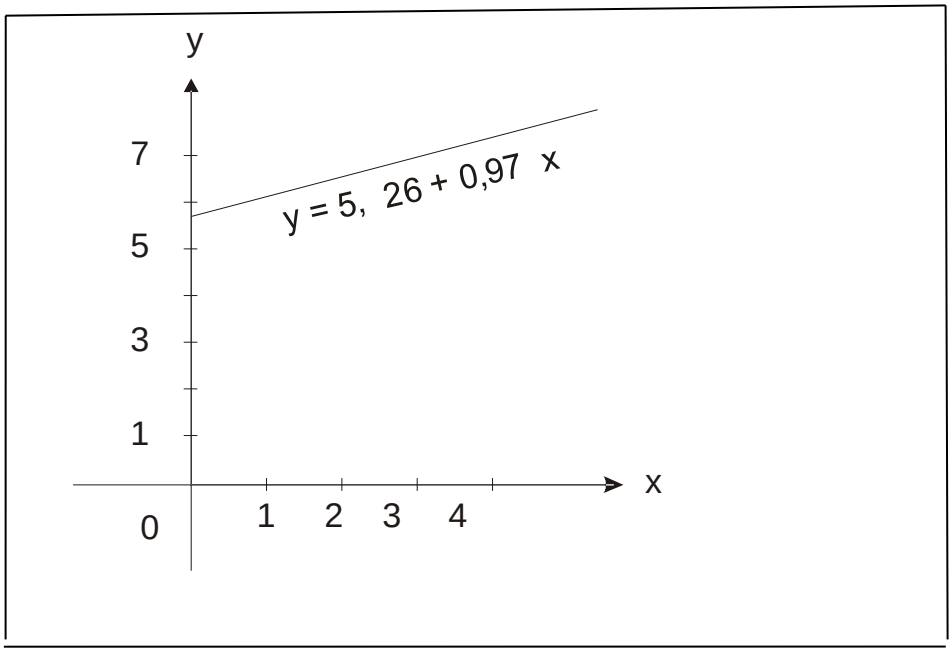
Note: Value a = 5.26

Value of b = 0.97

$\ddot{Y} = a + bX$

$\ddot{Y} = 5.26 + 0.97X$

Picture 1. Linearity relationship between variable X and Y



Based on the calculation of the correlation index numbers of variables X and Y, the correlation index obtained = 0.90. rxy or r count is consulted with rtable with a significance level of 0.05 with the number of respondents 30 (n = 30) is 0.361, then r count is greater than rtable that is 0.90> 0.361 therefore Ho is rejected Hi accepted. In other words the mastery application of the concept of social arithmetic to the material income tax social sciences gives positive results.

To determine the significance level of the results of the correlation test held hypothesis testing the correlation coefficient by using the t test, it turns out that from the calculation results obtained t_count = 10.9 while t_table at a significant level of 5% is 2.042. Then it can be concluded t_count (10.9)> t_ (table) (2.042) means the correlation coefficient is significant.

CONCLUSIONS AND SUGGESTION

The conclusion from the results of the research is that there is a significant positive relationship between the mastery of the concept of social arithmetic to social sciences learning outcomes, so that the success of teaching and learning can be achieved well, the teacher is expected to master and have professional teacher skills both in the classroom and outside the classroom. Teachers are expected to carry out learning mathematics, should further explain the usefulness of mathematics to other subjects, by giving many examples of applications of

mathematics to other subjects so that they can motivate students to be more active in learning mathematics.

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