

## **Reading Comprehension: A Study on the Correlation between Grammar and Logic**

Marina Udin

English Education Program, STKIP Kie Raha Ternate

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### **Abstract**

This study aims to correlate the correlation between grammar and logic in reading ability. This research is a quantitative research using ex-post facto design. The population and samples are taken from the second semester English language study program, amounting to 15 people. Data was collected using tests; there were two tests, namely grammar tests and logic tests, and questionnaires. Data were analyzed using statistics (SPSS) version 16.0. The test results show that their grammar and logic correlation coefficients are -0,028 at a significant level of 0.922. This means that the two variables have a negative correlation, because the value of the result of the correlation between grammar and logic is -0.028 which means  $<0.05$ . There is a correlation between grammar and logic, but the negative correlation means that the student's grammar value is higher than the logic value.

Keywords: *grammar, logic, reading comprehension*

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### **1. Background**

Language is not directly mastered by people because they were not born with a language, people have to learn how to understand and use it, and so they can to get meaning and communicate with others to express their thought and feelings. One of the purposes in learning language is to communicate each other and live together. Language is bridge; people use it to define who they are and to shape their place in life.

According Sheridan (1981) Reading comprehension is interpreted by the authors and writers of basal readers and literature anthologies. Reading comprehension is the process of making sense of text- is a complex, multifaceted activity that calls on the reader's thinking and problem-solving skills. Students monitor their own reading: they know when they understand what they are reading and when they do not and they recognize why comprehension breaks down (Keene and Zimmerman 1997: 22). Comprehension begins before reading as readers make prediction and anticipate the text, and continues after reading as they use their experience and extend it. (Fountas and Pinnell, 1996: 156).

### **2. Theoretical Basis**

According to Rand (Reading Study Group, 2002), comprehension is the process of eliciting and making meaning through interaction and involvement with written language. Duke (2003) stated that comprehension is a process in which readers make meaning by interacting with text through the

combination of prior knowledge and previous experience, information in the text, and the views of readers related to the text.

### **2.1. Reading Comprehension: Process Strategies**

Beginning and developing readers are learning the processes of knowing how to read. As they develop control over the processes, they learn to use and integrate a range of information. This information includes their knowledge and experience of the text topic and content, their knowledge and experience of print conversation, letters, sounds and words, and their knowledge and ability to use semantic, syntactic, and visual and graph phonetic information.

According to Ur (2001: 4), grammar may be roughly defined as the way language manipulates and combines words (or bits of words) in order to form longer units of meaning.

According to Harmer (1987:4) grammatical rules are essential for the mastery of language. People cannot use words unless they know how the words should be put together. Besides, the grammatical aspect of a language specifies the way in which sentences in that language are constructed. For English learners, many students still confuse about grammar and they sometimes find it difficult to express things they want to say. On the other hand, they confuse when they find English in reading form, especially dealing with sentence structure, because they do not understand or even do not know the form used in English. Therefore, they have to pay more attention to the rules in constructing correct sentences.

According to Leech and Svartvik (1973: 21) in St Nurhayati: 1993: 34); “To use a language properly we of course have to know the grammatical structure of the language and their meaning”.

The study of grammar by itself will not necessarily make someone a better reader. But by gaining a clearer understanding of how a language works, should also gain greater control over the way shape words into sentences and sentences into paragraphs. In short, studying grammar may help us to become a more effective reader.

### **2.2. Logic**

The students use their brain to think that real thinking, thinking that calls logic. Logical becomes from word “logic” its’ means that the truth in thinking. Logical thinker can observe and analyze phenomena, reactions, and feedback and then draw conclusion based on that input.

The paramount reason why we need logic in the study of language is that logic in the formal theory of consistency and that consistency is an all-pervasive and essential semantic aspect of human linguistic interaction. This is true not only of single sentences but also, and in a much bigger way, of texts and discourses consistent and since they are induced by the tens of thousands of lexical predicates in any language, it should be obvious that the logic of presuppositions (and its logical counterpart, presupposition trivalent logic).

Logical capability is ability in research about process of drawing a conclusion in general. An systematic explain concerning how the conclusions that relegated of all short of kind verification can said it is logical. (Brennan, 1995).

A further reason why logic is important for the study language lies in the fact syntax of the formulae of the various predicate-logic systems considered is essentially the same as that of the semantic analysis that underlie sentences (Seuren, 2010:1).

### ***2.3. Logic and Grammar***

Based on discussion above we know that there is correlate between grammars and logical. Students know about grammar of course can do logical. Seuren (2010) in his book that title is“Logical in language”, the researcher know that in reading comprehension there are no correlation between grammar and logic.

In the advantage of grammar said that Logic and reasoning: understanding and using grammar properly will help people think logically. Without logic and organization, reading (and all communication skills) will be much disorganized. The more understand grammar, the more clearly, meaningfully, and freely we will be able to organize and communicate the ideas as well as comprehend the ideas of others.

Its’ means that the researcher take this title for this research, according this title, there are no correlation between grammar control and logical capability in reading comprehension.

## **3. Method**

### ***3.1. Research Design***

This type of research is quantitative research of correlation type, using exposed facto. This research is conducted by using inferential descriptive research procedure to test the influence of independent variable to dependent variable. The independent variables are grammar, while the dependent variable is logical.

### ***3.2. Population and Sample of Research***

This research uses population and sample from English study program at STKIP Kie Raha Ternate. Determination of population and sample will be explained as follows:

Population is a generalization region consisting of objects / subjects that have certain qualities and characteristics that are set to be studied and drawn conclusions. Population in this research is all students of English education program at STKIP Kie Raha Ternate academic years 2017/2018 which amounts to 130 people from every semester. Of the population has been taken samples from 2<sup>nd</sup> semester that the number of students is 15 people.

### ***3.3. Technique of Data Collection***

The research instrument is a tool used to measure natural or social phenomena observed (Sugiyono, 2011: 148).

Data collection techniques are the measuring tools needed in conducting a study. The data to be collected can be in the form of numbers, written information, oral information and various facts related to the research focus being studied. With regard to the understanding of data collection techniques and data forms to be collected, in this case the study used two main techniques of data collection, namely questioner and written test.

#### ***3.3.1. Questionnaire***

The selection of data collection techniques by questionnaire is based on the reason that: the respondent has enough time to answer the questions; each respondent faces the same set and mode of filling of the question; respondents have freedom of reply; and can be used to collect data or information from many respondents in a fast time. Through this questionnaire technique will be collected data in the form of written answers from some respondents on a number of questions asked in the questionnaire, indicators in the form of translation of the specified variables.

Questionnaires in this study using Likert scale with four choices of answers, namely:

1 = Strongly Disagree (STS)

2 = Disagree (TS)

3 = Agree (S)

4 = Strongly Agree (SS)

Questionnaires have 10 questions, each of them have easy question and then hard question.

#### ***3.3.2. Test***

The test as a data collection instrument is a series of questions or exercises used to measure the skills of knowledge, intelligence, abilities, or talents possessed by individuals or groups in general. Test is defined as a tool used to measure the knowledge or mastery of a measuring object against a particular set of content or material (Sudaryono, 2013: 40). According Sudaryono (2003), the test is a measuring instrument or procedure used in the framework of measurement and assessment. The test can also be interpreted as a measuring tool that has objective standards, so it can test can also be interpreted as a measuring tool that has objective standards, so it can be widely used, and can really be used to measure and compare the psychological state or individual behavior. So in other words, the test is a systematic procedure to observe or describe one or more characteristics of a person by using a standard numeric or system category.

### **3.4. Technique of Data Analysis**

Data analysis is intended to test the truth of the hypothesis. Data analysis technique used in this research is correlation analysis.

#### **3.4.1. Correlation Analysis**

Correlation analysis by using correlation coefficient test is to know the degree of relationship between independent variable that is grammar with dependent variable logic. Look for correlation coefficient between independent variable with dependent variable by using Pearson Correlation in program SPSS 16.0.

Identify the high correlation level used interpretation criteria in the table below:

Table 3.1 Correlation coefficient interval

<b>Coefficient interval</b>	<b>Correlation</b>
1	2
0,000 – 0,199	Very Weak
0,200 – 0,399	Weak
0,400 – 0,599	Average
0,600 – 0,799	Strong
0,800 – 1,000	Very Strong

## **4. Finding and Discussion**

### **4.1. Presentation of Research Data**

The data presented in this study, obtained from questionnaires and tests of students reading comprehension at second semester. The variables in this study are grammar (denoted by X) and logic (denoted by Y). Grammar is a independent variable and logic is dependent variable. To know the presentation of data from each variable in detail can be seen in the following description:

#### **4.1.1. Grammar Test Result**

Result data about grammar of second semester student of STKIP KieRaha Ternate got from answer and also grammar test given to 15 respondents and there are 5 questions related to grammar. The result of respondent's answer can be seen in table 4.1:

**Table 4.1 Results of Respondents' Answers About Grammar Test Results**

No	Name	Items Question					result	Total
		1	2	3	4	5		
1	Mintesya Kofau	1	1	1	1	0	4	80
2	Ridhatul Fajriumasugi	0	0	0	0	0	0	0
3	Larika Sidik	1	0	1	0	1	3	60
4	Bellarifira Bhasri	1	0	1	0	1	3	60
5	Darwan La Nasia	1	1	1	1	0	4	80
6	Nurul Fitriyani	1	1	1	1	0	4	80
7	Bustam Safar	1	1	1	1	1	5	100
8	WaYati La Iroji	1	0	0	1	1	3	60
9	Ita Umanailo	0	0	1	0	1	2	40
10	Lilis Undrayati M. S	1	0	0	1	0	2	40
11	Afni Anri	1	0	0	0	0	1	20
12	Putri Fatima BSA	1	1	1	1	1	5	100
13	Nurwani Jaelan	1	0	1	1	0	3	60
14	Rina Jamil	1	1	1	1	1	5	100
15	Ruce Wise Heluku	1	0	0	1	1	3	60
		Total						940
		Average						62.67

From the results of the data above that has been processed using the manual method and Microsoft Excel produces the data listed in the table above. Researchers found the results of the average value of grammar, 62.67. The highest value of grammar is 100 and the lowest value is 20.

#### 4.1.2. Logic Test Result

Researchers analyze student logic results as well as analyzing grammar results. Students consisting of 15 people and logic questions contain 5 questions, each of which has an A-E option. The following is a table describing the results of semester 2 English language students:

**Table 4.2. Results of Logical Test Result**

No	Name	Items question					Result	Total
		1	2	3	4	5		
1	Mintesya Kofau	0	0	0	1	0	1	40
2	Ridhatul FajriUmasugi	0	0	0	0	0	0	0
3	Larika Sidik	0	1	0	0	0	1	20
4	Bellarifira Bhasri	0	1	1	0	0	2	60
5	Darwan La Nasia	1	0	0	0	0	1	20
6	Nurul	0	0	0	0	0	0	0
7	Bustam Safar	0	0	0	0	0	0	0
8	WaYati La Iroji	0	0	0	0	0	0	0
9	Ita Umanailo	0	1	0	1	0	2	20
10	Lilis Undrayati M. S	0	1	0	1	0	2	40
11	Afni Anri	1	1	0	1	0	3	60
12	Putri Fatimah BSA	0	1	0	1	0	2	40
13	Nurwani Jaelan	0	0	0	0	0	0	0
14	Rina Jamil	0	0	0	1	0	1	40
15	Ruce Wise Heluku	1	0	0	1	1	3	60
		Total						240
		Average						26.67

From the table above, the average student score is 26.67, the highest value is 60 and the lowest value is 0.

#### 4.1.3. Questionnaire Result

In presenting this data researchers provide questions that must be answered by students of English education. In the questionnaire there are 10 questions concerning the relationship between grammar and logic in reading comprehension. This question is in the form of an option that must be crossed if it corresponds to what they have ever obtained before. The results of the questionnaire given to students are as follows:

**Table 4.3 Questionnaire Results**

No.	Statements			
	Very good	Good	Not good	Very bad
1	12	3	0	0
2	4	11	0	0
3	4	8	2	0
4	4	9	2	0
5	2	7	6	0
6	3	9	3	0
7	3	10	1	1
8	8	6	1	0
9	6	8	1	0
10	4	8	2	0
%	50%	79%	18%	1%

From the table above shows that many students who answered were very good and good. Students who answered very well were 50%, many students who answered well were 79%, less good was 18% and those who answered very poorly were 1%. So the answer from each English student STKIP KieRaha Ternate covers very good is 50% and good is 79%. The researchers concluded that there was a correlation between grammar and logic in reading comprehension. Of the number of students who answered very well and well as stated in the table above, the correlation between grammar and logic is true. There is a relationship between grammar and logic in reading comprehension.

#### 4.1.4. Data Analysis Using SPSS

Researchers used the SPSS 16.0 program to analyze the results of descriptive statistics and correlation analysis between grammar and logic. The results of descriptive statistics are listed as follows:

#### Descriptive Statistics

	N	Min	Max	Mean	Std. Deviation
Grammar	15	0	100	62.67	29.147
Logical	15	0	60	26.67	23.503
Valid N (list wise)	15				

The researcher found that the minimum value is 0 from both variables. The maximum value of grammar is 100 and the value of logic is 60. The mean value of grammar is 62.67 and the value of



logic is 26.67. Finally the value of the standard deviation of grammar is 29.147 and the value of logic is 23.503.

In Bivariate models, the commonly used correlations are Person, Kendall, and Rank Spearman. In this study used Pearson Correlation using SPSS 16.0 program.

Researchers used the SPSS 16.0 program to get the results of the correlation between grammar and logic. In the program there are three stages carried out to produce the final results of this study. First, the researcher analyzes the results of the data by including the values achieved by students as mentioned above on the results of grammar tests and student logic. Second, analysis of the results of descriptive statistics to see the maximum, minimum, middle value and standard deviation. Finally, analyze the results of the correlations produced by grammar and logic.

#### Correlation

		Grammar	Logical
Grammar	Pearson Correlation	1	-.028
	Sig. (2-tailed)		.922
	N	15	15
Logical	Pearson Correlation	-.028	1
	Sig. (2-tailed)	.922	
	N	15	15

From the results above, the researcher uses Pearson correlation to find the results of the correlation relationship between grammar and logic. The value generated from grammar and logic is -0.028 while the value of the 2 tailed significance between grammar and logic is 0.922. the value of symbol N is the number of students who were sampled in this study.

For statistical decision making, it can use 2 methods, namely, first, the correlation coefficient is compared with the value of the correlation. If the correlation coefficient > correlation value then there is a significant correlation ( $H_a$  acceptable), whereas if the correlation coefficients < value correlation then give no significant correlation ( $H_o$  accepted). Second, see the value of significant. If the significant value is < 0.05, there is a significant correlation ( $H_a$  is accepted) while if the significant value > 0.05, there is no significant correlation ( $H_o$  is accepted).

The first method looks at the results of the correlation coefficient and the researcher uses the second method to answer the research question.

Here the researcher has got an answer from the first research question contained in Chapter I. The research question is whether there is a correlation between grammar and logic or not. Researchers used statistical methods to answer research questions. The second method states that if a significant value is < 0.05, there is a correlation between grammar and logic. From the table above can be seen the value of significant 2 tailed shows the value of 0.922 and the value shows that the number can answer

the first research question that there is a correlation between grammar and logic in reading comprehension.

From the discussion above, the researcher presents an explanation in the form of statistics or more precisely in quantitative terms. The discussion this time the researcher describes the data that has been found and has been described in the table above to answer research questions.

The first research question is whether there is a correlation between grammar and logic. To answer this research researchers found data that had been processed into the SPSS 16.0 program and had a Pearson correlation value of -0.028 while the significance value of 2 tailed had a value of 0.922 from that number all pointed to a value of  $<0.05$  so it can be said that there is a correlation between grammar and logic .

The second research question is how the relationship between grammar and logic is. The relationship between grammar and logic is negative because the number generated by the Pearson correlation is -0.028. There is a sign (-) and the value achieved by students regarding grammar is higher and the logic value is low.

## **5. Conclusion**

### **5.1. Conclusion**

There is a correlation between grammar and logic in the second semester of the English language program at STKIP Kie Raha Ternate. It can be chosen on the results of the data that has been analyzed above, the value found is  $-0.028 < 0.05$  with a significant value of 2 tailed is 0.922. This proves that there is a correlation between grammar and logic in reading comprehension.

There is a negative correlation between grammar and logic in reading comprehension. This can be seen from the symbol produced by the Pearson correlation, which is -0.028. The results of the students show their grammar value is higher than the value of their logic.

### **5.2. Suggestion**

Based on the conclusion of the research, the writer puts forward some suggestions, they are:

- The English language teacher must provide a lot of explanation and attention when explaining grammar to the beginning semester students.
- English language teachers must provide specific understanding of logic. Because logic learns how to control how students think to get the truth in reading a text.
- English language teachers must provide specific understanding of logic. Because logic learns how to control how students think to get the truth in reading a text.

From the above suggestions researchers expect a good response for readers of this research later.

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