

**A Comparative Study on Math-Science and Social Students Concerning Their
Passive Voice Mastery: A Comparative Study at the Second Year Students of State
Senior High School 6 of Palembang**

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Abstract: The main problem of this study was “Is there any significant difference in passive voice mastery between the eleventh grade students in math-science and social major of State Senior High School 6 of Palembang?” Thus, the main objective of this study was to find out whether or not there is significant difference in passive voice mastery between the eleventh grade students in math-science and social major. In conducting the study, the writer used causal-comparative analysis. To obtain the data, the writer used two instruments; passive voice test and questionnaire. The data of passive voice test was analyzed through Standard Deviation (SD) finding which is combined to the Degree of Freedom finding (DF), and used the T-Test formula with Separated Variance Pattern. In analyzing the questionnaire, the writer calculated the percentage of each item. Based on the analysis, the average score of passive voice test obtained by math-science students was 88.2 while social students got 80.9. Furthermore, the result of questionnaire showed that math-science students gave 75% of positive perceptions toward English class, on the other hand, social students only gave 25%. The calculation of comparative analysis showed that $t_{\text{observation}}$ was lower than t_{table} ($0.184 < 1.995$). It indicates that H_0 was accepted and H_a was rejected. In other words, there was no significant difference in passive voice mastery between the eleventh grade students in math-science and social major of State Senior High School 6 of Palembang.

Keywords: *Comparative Study, Math-Science Students, Social Students, Passive Voice Mastery*

I. BACKGROUND

Nowadays, from all languages exist in this world, English is one of the languages that is used spreadly all over the world. No matter where the people come from and either these people use English as the second

or foreign language, they usually use English as the tool of communication.

In Indonesia, English is taught as the first foreign language. It is learned by the students start from elementary school

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to university level. Therefore, every school and college provide English subject as the lesson. Indonesian students have realized how important of having good ability in English is. By having good English ability, automatically the students will also gain good score in English subject. Moreover, it can be used for their better future to enter the university, to get a job, and so on.

English is divided into four basic skills; listening, speaking, reading, and writing. Besides, English has some aspects such as vocabulary, pronunciation, and grammar. Especially for grammar, it is one the most important aspects of English. According to Alderson and Bahman (as cited in Purpura, 2004), "Grammar, the structural glue, the "code" of language, is arguably at the heart of language use, whether this involves speaking, listening, reading or writing". Uluc (2013 : 1740) states that it is a system of rules in a language. Another definition of grammar in which grammar is the rules in English for changing the form of words and joining them into sentences (Hornby, 2010 : 651). Students should learn grammar because it is included every time they learn four basic skills of English at school; listening, speaking, reading, and writing. Because grammar always appears every time students learn English four basic skills, grammar seems become the product of them.

Further, grammar is important because it can help people especially language learners perform English better. In other words, those who have good grammar ability are also usually good at performing English four basic skills. It means, having grammar ability influences the success of other English skills. Mastering grammar is not just a necessary thing; it is crucial. Undoubtly, grammar is completely important to be mastered.

Grammar discussion is wide. One of them is about tense. Tense can be defined as the grammatical contrast between present and past forms of the finite verb (Leech, 2006 : 111). Therefore, it is the forms of a verb that may be used to show the time of the action or state expressed by the verb. Passive voice includes into one of English tenses. Generally, passive voice is used when the object seems to be more important than the subject. As stated by Wang (2010), passive voice describes the whole process of certain event from the patient's point of view. It is a market

form of voice. There are three markers of passive voice, be, -ed, and by, which has its meaning and significance respectively. Passive voice, however, is harder to be learned rather than active voice. Hinkel (2002) has shown that the passive is harder to understand than the active. Accordingly, even the students that use English as the first language (L1s) appear to have difficulty with passive constructions. Thus, mastering the English passive voice & knowing how it is used are very important. Based on the interview with the teacher of English at State Senior High School 6 of Palembang, the eleventh grade students have learned passive voice when they were on the tenth grade. The students can use passive voice to create a letter, an announcement, and a dialogue. Besides, it makes their speaking and writing ability become better and more varied. In comparing Educational achievements, the research must be done as fair as possible. There should not be so many differences among what or whom to be compared. According to what Bereday explains (as cited in Leung and Park, 2014), a researcher should not compare students' educational achievement if there are too many differences and have very less similarities or even one similarity only. It is not fair and valid. This is what made the writer concerned on deeply.

In this research, the writer focused on

measuring the eleventh grade students' passive voice mastery in three forms; present progressive tense, simple future tense, and present perfect tense. The students who had been compared were the eleventh graders in math-science and social major. They were chosen because (1) they fulfill the requirement of comparing educational achievement that these students have much more similarities rather than differences, (2) based on the data from the school in which math-science students usually have better average score in National Test, especially in English subject. Thus, the writer was going to prove this fact whether or not the students in math-science also have better passive voice mastery. Yet, as mentioned, mastering passive voice is harder than mastering active voice, so it was more challenging for the students when they were being tested.

1. Grammar

Grammar is the rules in English for changing the form of words and joining them into sentences (Hornby, 2010 : 651). Grammar involves in four basic skills of English, therefore it is important to be mastered especially for language learners. According to Hariyono and Mc. Carthy (2008), "Grammar is the study that concerns on the order of the

words that have certain form into the correct sentence". Thus, English grammar is the study of how to order the English words and joining them into a correct English sentence. Grammar, as one of the English aspects, always appears every time the students learn four basic skills of English; speaking, listening, reading, and writing.

Further, Alderson and Bahman (as cited in Purpura, 2004) explain that grammar has also been central to language teaching and assessment historically, from the Middle Ages, when "rhetoric" was a key component of a university education, to the "skills-and-components" models of the 1960s that informed both language pedagogy and language testing.

"Grammar was used to mean the analysis of a language system, and the study of grammar was not just considered an essential feature of language learning, but was thought to be sufficient for learners to actually acquire another language" Rutherford (as cited in Purpura, 2004 : 1). Additionally :

Jaya (2017) Grammar in and of itself was deemed to be worthy of study – to the extent that in the Middle Ages in Europe, it was thought to be the foundation of all knowledge and the gateway to sacred and secular understanding. Hillocks and Smith (as cited in Purpura, 2004 : 1) "L2 educators have generally defined

"grammar" as a set of structural rules, patterns, norms, or conventions that govern the construction of well-formed and meaningful utterances with respect to specific language use contexts" (Purpura, 2013 : 101).

There are three great divisions of English Grammar as proposed by Hariyono and Mc. Carthy (2008); Orthography, Etymology, and Syntax.

1) Orthography is the study of how to write and pronounce English letters correctly. Orthography includes:

- Letter. In writing, a letter is a sign of a sound. It is divided into two; small letter and capital letter. In pronunciation, A letter is a mark or character used to represent an articulate sound. Letters are divided into vowels and consonants.
- Words. A word consists of one syllable or a combination of syllables that gives meaning. For example: love, mother, a, the, kindness, etc.
- Syllable. It is parts of a word that can directly be spoken. It is divided into four kinds: monosyllable, disyllable, trisyllable, and polysyllable.

2) Etymology is the study of how to

arrange the English letters into an English word correctly. In etymology, the English words are grouped into 8 parts or can be called as the eight parts of speech. The eight parts of speech are: noun, adjective, verb, pronoun, adverb, preposition, conjunction, and interjection.

- 3) Syntax is the study of how to arrange the English words into a correct English sentence. In other words, Syntax is part of grammar that discusses about the process of forming a sentence.

From those experts' opinions, the writer can conclude that grammar concerns in the rules of how to arrange the English words and combine them into a good and correct English sentence. Grammar really helps the people, especially language learners in performing the English four basic skills; listening, speaking, reading, and writing.

1. Passive Voice

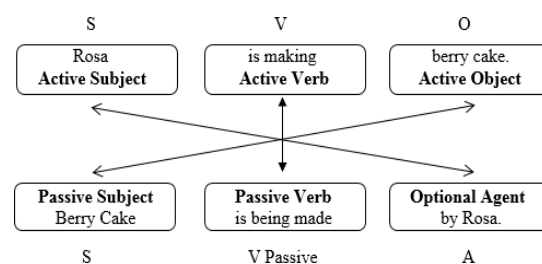
Passive voice in this study is the English grammar material going to be compared. In English grammar, there are two kinds of voice, namely the active voice and passive voice. According to Quirk et al. (as cited in Wang, 2010), voice is a grammatical category which makes it possible to view the action of a sentence in

two ways, without change in the facts reported. When a sentence is written in the active voice, the subject performs the action; in the passive voice, the subjects receive the action.

Using the active voice in the sentence is stronger, however, using the passive voice is more stylish & challenging, "Passive voice has been one important and difficult part of grammar" (Wang, 2010 : 945). Moreover, passive voice is considered stylistically inferior to active voice.

As proposed by Johnson-Laird (2007), the passive reverses the order of the grammatical subject and object of the active, and it also allows the active subject to be omitted altogether.

Thus, passive voice can be constructed as follow: form of "to be" + past participle + "by the..." = passive



voice.

Example:

2. Math-science and Social Major

In 2013 Curriculum, the majors or interests for senior high school are divided into two; Math-Science (MIPA) and Socials (IPS). The students can choose the major or interest start from the

first year of senior high school. It is considered by two reasons; the students' score in report book at junior high school and an interview done by the counsellor teacher.

In this study, the term major is understood as:

1. a lesson in the basic of students' interest based on the study chance in education unit; a process of choosing and deciding the interest of the students in a group of lessons or skill competence which is provided by the education unit;

2. a process of taking a choice or decision by students about the interest of a group of lesson which are based on the understanding of their own skill and chance and are implemented in education unit; (4) and a continuous process to facilitate students in achieving the success of study process, result, and optimum development in order to achieve the goal of national education. (Kementerian Pendidikan dan Kebudayaan, 2013 : 8-9)

Math-Science (MIPA) and Social (IPS) are two majors applied in 2013 curriculum. Generally, the students in these two majors learn the same subjects. The difference is only at the subjects on Group C

whereas they are based on students' interest whether the students are in math-science or social major (Kemendikbud, 2013 : 10). The explanations can be seen as follows:

- Group A (General) : Religion and Attitude (Pendidikan Agama dan Budi Pekerti), Pancasila and Citizenship Education (Pendidikan Pancasila dan Kewarganegaraan), Indonesian (Bahasa Indonesia), Mathematics (Matematika), Indonesian History (Sejarah Indonesia), English (Bahasa Inggris).
- Group B (General) : Art and Culture (Seni Budaya), Body, Sport, and Health Education (Pendidikan Jasmani, Olahraga, dan Kesehatan), Creativity and Entrepreneurship (Prakarya dan Kewirausahaan).
- Group C (Interest) for Math-science Major : Mathematics (Matematika), Biology (Biologi), Physics (Fisika), Chemistry (Kimia), Economics (Ekonomi).
- Group C (Interest) for Social Major : Geography (Geografi), History (Sejarah), Sociology (Sosiologi) , Economics (Ekonomi), Biology (Biologi).

II. RESEARCH PROCEDURE

This journal used causal-comparative research as the method of the research. This method is also known as ex post facto research. "...causal-comparative research is also referred to sometimes as ex post facto (from the Latin for "after the fact") research (Fraenkel et al., 2012 : 366).

Accordingly, in causal-comparative research, investigators attempt to determine the cause or consequences of differences that already exist between or among groups of individuals (Fraenkel et al., 2012 : 366). Further, they explain that a researcher might observe, for example, that two groups of individuals differ on some variable (such as teaching style) and then attempt to determine the reason for, or the results of, this difference. To collect the data in this research, the writer used two kinds of instrument. The first instrument was passive voice test and the second one was questionnaire. Passive voice test was used as the instrument to measure students' passive voice mastery. The materials of the given test in the form of multiple choice. There were 30 test items in which each tense consisted of 10 questions.

Questionnaire was used as significant instrument that provides the information toward students' result in passive voice test. It was also expected to give the information about students'

perceptions toward English class. It consisted of 20 items. Because the writer used dichotomous question as the type of questionnaire, there were two choices only for every question; 'yes' or 'no'. Each choice had score, 1 for 'yes' and 0 for 'no' (Sugiyono, 2015 : 96). These scores were counted and analyzed in order to give rationales toward students' passive voice test achievement and to inform the students' perceptions toward English class.

III. FINDINGS AND INTERPRETATION

1. Findings

The total score of passive voice test obtained by math-science students were 3,088, while social students got 2,832. Then, by using percentage analysis, the writer found that the average score of math-science students was 88.2, and the average score of social students was 80.9.

In classifying the score, there were three classifications; high, middle, and low score. It can be described that in high score classification, math-science students get 85.7% and social students get 57.14%. In middle score classification, math-science students get 14.3% and social students get 37.14%. In low score classification, math-science students get 0% and social

students get 5.714%.

Analyzing passive voice test were done through two formulas; Standard Deviation finding (SD) which is combined to the Degree of Freedom finding (DF) and the T-Test Calculation.

The result of S^2 was 27,566.33. It was needed to assist the next calculation in filling the main calculation in T-test formulation. The result of the first T-test itself was 39.6. The first T-test calculation was used to complete the final pattern to answer the t_{table} , whether the $t_{observation}$ or t_o is equal or higher than the t_{table} or t_t .

It has been counted that the value of $t_{observation}$ was 0.184, while the t_{table} 1.995 at significance level 5% or 0.05 and the t_{table} 2.650 at significance level 1% or 0.01. It means $t_{observation}$ was lower than t_{table} .

In analyzing the questionnaire, the writer analyzed each questionnaire item answered by both students in math-science and social major by using percentage analysis. Questionnaire analysis can give the information about the students' perception toward English class.

From the analysis, it was found that math-science students' perception toward English class was good. It is proven from the the data which showed 75% of math-science students gave positive perception. Meanwhile, social students' perception toward English

class was not as good as math-science students' perception that there were only 25% of them gave positive perception.

3. Interpretation

The interpretation is divided into two parts: (1) the better passive voice mastery, and (2) the hypothesis interpretation.

The Better Passive Voice Mastery

Students in math-science major were assumed to have more ability in mastering passive voice. In this research, their score of passive voice test was 88.2 in average. However, students in social major do not achieve the score as well as math-science students, the average score of social students in passive voice test was 80.9.

The data obtained from questionnaire showed the reasons why math-science students had better passive voice mastery compared to social students. Math-science students got 15 per 20 statements (75%) of questionnaire which showed positive perception toward English class. Meanwhile, social students' perception toward English class was not as positive as math-science students' perception that was only 5 per 20 statements (25%).

The Hypotheses Interpretation

The hypotheses of the research were:

(Ho) : There is no significant difference in passive voice mastery between the eleventh grade students in math-science

and social major of State Senior High School 6 of Palembang.

(Ha) : There is significant difference in passive voice mastery between the eleventh grade students in math-science and social major of State Senior High School 6 of Palembang.

$$2.650 > 0.184 < 1.995$$

That means,

The Null Hypotheses (Ho) was **accepted**.

The Alternative Hypotheses (Ha) was **rejected**. The hypotheses which was tested by T-

Test of comparative analysis from independent sample showed that there was no significant difference in passive voice mastery between the eleventh grade students in math-science and social major of State Senior High School 6 of Palembang.

IV. CONCLUSION

Through sequence of calculation, it is concluded that there was no significant difference in passive voice mastery between the eleventh grade students in math-science and social major of State Senior

High School 6 of Palembang. The average score of math-science students in passive voice test was 88.2, while social students obtained 80.9. Based on the data from questionnaire, 15 per 20 statements (75%) which were answered by math-science students showed how positive their perceptions were toward English class that means their perception toward English class was very good. However, social students only obtained 5 per 20 statements (25%) which means their perception toward English class was not as good as math-science students' perception.

As shown on the result of the research, $t_{\text{observation}}$ was lower than t_{table} . The result of the research was 0.184. In fact, it was lower than 1.995 with the degree of freedom (df) of 68 as its critical value. Because $t_{\text{observation}}$ was lower than t_{table} , Ho was accepted and Ha was rejected. It means, passive voice mastery between the eleventh grade students in math-science and social major of State Senior High School 6 of Palembang had no significant differences.

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