

THE INFLUENCE OF MEANS ENDS ANALYSIS (MEA) MODEL ON GRAMMAR ACHIEVEMENT

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Abstract: The objective of this study was to find out the influence of MEA learning model on students' grammar learning achievements. The participants were the third semester students of English study program, UM Palembang in academic year 2019/2020 which amounted to 40 students. This study was a quantitative research. This study used pre-experimental method. The research design used two groups pretest post-test design. The researcher conducted several steps to analyze the data; first, data from pre- and post-test results were analyzed to find averages obtained from the control and experimental group. Second, the data obtained by the control and experimental group were compared statistically to determine differences in grammar test scores between the two groups using paired sample tests. Third, the data obtained from the second step were compared statistically to find the significant differences in the grammar values between the two groups by using paired sample t-tests. Based on the results of the study, it can be concluded that the experimental group before the treatment was carried out in the learning process based on the pretest value was still not good, but when the treatment has been carried out, the student post-test results showed a very good improvement. For the control group, there were no favorable changes (significant) between the pre- and post-test result scores, because both of them showed the same results, which were not good.

Keywords: *Means Ends Analysis (MEA) model; advanced grammar; English education study program students.*

INTRODUCTION

English is a language that is closely related to many aspects of life today. Almost all aspects such as technology, education, business, and others use English as a medium for communication. Therefore, it is very important for us to learn English language. However, there are various aspects that the learners need to comprehend in order to master English language. Thus, grammar is included as one of the important aspects of learning English as it is seen as the language framework to support the context and

message in any form of language to be conveyed smoothly. This is in line with Ganjoe & Narafshan (2016) who explained that grammar is like a vehicle that enables the students to communicate effectively. According to Bastone (1994, p.3), "Language without grammar would certainly leave us seriously handicapped". Inferring from Bastone, we know that grammar is an integrated part of language used by the learners in daily communication. To be an effective language user, learners should study grammar because grammar

skills help learners to organize words and messages and make them meaningful. This is in accordance with the opinion of Mafisa and Walt (2003), stating that mastering grammar will affect someone in achieving their language competence. Thus, knowing more about grammar enables the learners to arrange better sentences in speaking and writing performances. A good knowledge of grammar helps learners to make sentences clear enough to be understood. The statement is supported by Huegle (2008) which stated that the purpose of learning grammar is to organize words and messages so their meaning is clear and can be understood.

As Nunan (1998) stated that the function of grammar is not only to form words into sentences, grammar also gives an overview of language structure so it will be easier to form sentences. Moreover, improper use of grammar will not convey meaningful messages. Tabbert (1984) stressed the importance of grammar simply as it frequently points out students' confusion in word choice; *lie* and *lay*, *who* and *whom*, saying *infer* instead of *imply*, mismatch of subjects and verbs, mixing up pronoun reference, using double negatives, etc. These mistakes are evidences of their need to study grammar. Language acquisition without grammar is confusing as it will be a failure to use the language correctly without grammar skills. People now agree that grammar is too important to be ignored, and without a good knowledge of grammar, learners' language development will be severely constrained (Richards & Renandya, 2002).

Although most of the English learners are aware of grammar essential role in conveying the form of language, they also believe that grammar can be the most complicated aspect to be learned due to the difficulties of understanding the use of tenses and the word arrangement. In addition, learners often feel uncomfortable in learning such kind of materials due to the boredom caused by the monotone and traditional teaching model in classroom. As the result, learners tend to be passive recipients in the learning process which leads to the lack of understanding about the grammar material that is being taught by the teacher. Students tend to take examples that are already exist often that they cannot apply their knowledge on consistent and appropriate contexts. Moreover, learners often feel that by learning grammar in traditional model, the

grammar they learned are not able to be used in real life communication (Hashemi & Daneshfar, 2018). This greatly affects the outcome and the process of writing the thesis later. On the other side, the problems faced by the learners also become the teachers' concern. Due to the fact that a good teachers in grammar learning process should assist the learners to reach the three goals of learning that are stated by Thao (2019): students should be able to communicate both in spoken and written English language; students should acquire basic knowledge as well as the advanced one in grammar field; and students should attain their goals for studying. It is an obstacle for the teachers to discover the teaching model that fit those three goals in order to teach grammar without making the students bored.

Based on the observation and interview conducted to the third semester students of 2017-2018, this problem arises due to the lack of creative teaching/learning model. The teachers tend to use deductive strategy in which they start the lessons by giving the rules of grammar accompanied with examples of rule application in sentences. Thus, the teachers tend to lecture a lot during the learning process that leads to the problem of students' perspective toward grammar. According to Flight (2003), a lecture is an oral presentation intended to present information or teaches people about a particular subject, for example by a university or college teacher. This kind of routine instruction may cause students' boredom which gradually dishearten them.

However, Nurusus, Samad, Rahman, Noordin, & Rashid (2015) believed that the teachers' effectiveness in delivering the grammar lessons may be affected by their beliefs on how to teach grammar. This leads to a conclusion that students need an interesting method. This model meets the researcher's perspective as the researcher believes that the interesting method is a method which will emphasizes on the context of how grammar is used and support the students to be more active in learning process. As a result of analyzing the grammar teaching phenomenon, the researcher wants to solve the problem in handling the grammar lessons by applying the Means-End-Analysis (MEA) model.

According to Simon (1981), Means-ends analysis (MEA) is a problem solving technique used commonly in artificial intelligence (AI) for

limiting search in AI programs. Kaciak & Cullen (2006) added that it is also a technique used at least since the 1950s as a creativity tool, most frequently mentioned in engineering books on design methods. MEA is also related to means-ends chain approach used commonly in consumer behaviour analysis. Efuansyah and Wahyuni (2019) believed that means ends analysis is a learning model that can give the students opportunities to be active and give a contribution in mathematics. This is in line with Prihatiningtyas and Nurhayati (2017) that stated Means-Ends Analysis (MEA) can facilitate students' problem-solving ability. However, this has been proved in previous studies; in Ratnasari (2018) research result, as the students' activeness in the classroom increased from 24% on circle 1 into 60% on circle 2; in Lestari, Mahayukti, & Mertasari (2020) research finding as MEA model successfully increased the students' activeness in learning and problem-solving ability; in Mulasari, Wulandari, & Putra (2020) research as Means Ends Analysis has a positive effect on students' learning outcome.

Aside from that, the model also can optimize the problem-solving activity through heuristic approach by questions sequence which can be clues to help students in problem-solving. Moreover, Supendi, Jamiah, & Ahmad (2017) showed that the students' problem-solving with Means Ends Analysis model is better than in Direct Instruction model. Similarly, Palupi, Suyitno, Prabowo (2016) also showed that MEA model is more effective than expository model. Besides, Means-Ends Analysis also has a privilege of students becoming familiar with problem-solving questions which makes them easier in solving the problems (Shoimin, 2016).

As stated by Huda (2014), means ends analysis separates the problem and goal that needs to be achieved. As a whole, Means-Ends Analysis (MEA) is a strategy to analyze a problem through various ways in order to achieve the needed goal (Qusyairi & Watoni, 2017). Juniyarti (2014) also added that means end analysis is seen as learning strategies to enhance analytical skill. Moreover, a good analytical skill is intertwined with problem-solving skill needed by people nowadays. This statement is in line with what Suherman (2010) argued that means end analysis is a mix of learning method and problem-solving method. Pratama, Sariyatun, & Joebagio (2017) also believed that mean ends analysis is needed to be the solution for innovative

learning model in the current teaching process that is expected to help the teachers by combining with the value approach. Căprioară & Daniela as cited in Aras (2020) believed that learning process in classroom depends on the learning model differences which effect the students' problem-solving ability.

Thus, by using means ends analysis model, it is expected to improve the ability of high-order thinking that leads to the ability of identifying problems, analyzing problems, finding conclusions from a problem and, being able to design a way to solve the problem. Moreover, means ends analysis is proved to be effective in improving the ability of high-order thinking of students in IPS learning in Riana, Jupri, and Abdulkarim (2017) research. Similarly, the result in Solikah and Himmah (2019) research also showed that Means Ends Analysis learning model with a heuristic learning strategy is effective in enhancing the mathematical problem-solving ability of students of class VII SMP N 2 Bringin. Furthermore, Heryani & Aptiani (2016) also showed that students' learning motivation of learning with Means Ends Analysis (MEA) model are in high level.

From the description above, the researcher is interested in conducting the research by using MEA learning model in advance grammar courses with the aim that the material given will be truly understood by students. The research problem in this study is "was it effective to use MEA learning model to improve learning achievements of the third semester students of English education study program, *Universitas Muhammadiyah Palembang*?"

Based on the research problem above, the objective of this study is to find whether there is an increase in grammar learning achievements of the third semester students, English education study program, *Universitas Muhammadiyah Palembang* by using MEA learning model.

Hypothesis

- H₀: There is no significant influence of MEA learning model on the grammar learning achievements of the third semester students of English education study program, *Universitas Muhammadiyah Palembang*
- H_a: There is a significant influence of MEA learning model on the grammar learning achievements of the third semester students

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The scope and research limitation are written below:

- a. The subjects of this study are the third semester students of the English education study program, FKIP UM Palembang in academic year of 2019/2020, amounting to 40 students.
- b. This research is conducted in an advanced grammar course with TOEFL material.
- c. The learning model used in this study is the Means-Ends Analysis (MEA) learning model.

The operational definitions in this study are as follows:

- 1. Learning models can be interpreted as a systematic procedure in organizing learning experiences to achieve learning goals.
- 2. Learning achievements are the results that have been achieved or obtained by students from the experiences and exercises which include knowledge (cognitive), attitude (affective), and psychomotor during the learning process takes place.
- 3. Means Ends Analysis (MEA) is a learning model that requires planning to achieve overall goals and problem-solving by using syntax or steps in the concept.

METHOD

This research is a quantitative research which used a pre-experimental method design and this design is "two groups pretest posttest design". There are two variables in this study, namely the independent and the dependent variable. The independent variable is the MEA learning model and the dependent variable is students' learning achievements.

In this study, researchers used pre-test and post-test for the control group with no special treatment, while for the experimental group, the researchers used pre-test and post-test with special treatment which used the MEA learning model. For more details, see Table 1 below:

Table 1. *Treatment for experimental group using MEA learning model*

Subject	Pretest	Treatment	Posttest
SK	O ₁		O ₂
SE	O ₁	X	O ₂

Remarks:

- S : Research subject (S control / S experiment)
- X : Treatment
- O1 : Giving pretest
- O2 : Giving post-test

Technique for collecting the data

Test

The test used by researchers is to include students' learning achievements, while the form of the test is multiple choices questions which amounts to 50 questions which are used to find out how far the students' understanding of the material that has been learned.

Non-test

Observation

The direct observation of an activity carried out in order to find out the condition or a condition that would be observed.

Documentation

The documentation used to obtain data directly from the research site, the teaching material used and the class learning process before the study, photographs during the research, and videos where all of this data is relevant to the research.

Technique for analyzing the data

To analyze the data of this study, researchers conducted several stages. First, data from the pre-test and post-test results were analyzed to find averages obtained from the control and experimental group. Second, the data obtained by the control and experimental group were compared statistically to determine differences in the results of grammar test scores between the two groups using paired sample tests. Third, the data obtained from the second step, were compared statistically to find out the significant differences in the results of grammar values between the two groups using paired sample t-tests; to find significant differences from each criterion measured from the value of the test results obtained by each group and to find which criteria that affects the achievement of understanding of grammar by using paired sample t-tests. The last step taken by the researcher was to find a significant difference from the results obtained by each group using paired sample t-test in order to prove how significant the difference is and

whether the difference is caused by the given treatment. All calculations were analyzed by using SPSS 21.0 for windows.

In this study, researchers used t-test statistical procedures. This t-test formula was used to prove the hypothesis in this study, to find out whether there is a significant increase between the pre-test and post-test students' scores.

RESULTS AND DISCUSSION

Description of the score pretest and posttest of the experimental group

This is described as a statistical result regarding to the score of students' learning result before treatment (pre-test) in the experimental group. The class was treated in the form of the application of Means-Ends Analysis (MEA) learning model and the value of students' learning result after the treatment (post-test) can be seen in the following table below:

Table 2. *Description of the score pretest and posttest student learning achievements of the experimental group*

No.	Total Scores		Gain
	Pretest	Posttest	
1	8	15	7
2	8	18	10
3	10	20	10
4	10	19	9
5	10	24	14
6	13	28	15
7	13	32	19
8	16	35	19
9	18	38	20
10	18	39	12
11	18	35	17
12	20	35	15
13	20	30	10
14	20	38	18
15	24	41	17
16	24	43	19
17	26	40	14
18	28	45	17
19	31	40	9
20	34	45	11
Total	369	651	282
Mean	18.45	32.55	14.10

Based on the table above, it can be concluded that out of the 20 students in the experimental group, the average pretest score is 18.45, the lowest value is 8 and the highest value was 34. After applying MEA learning model, it can be seen that the results of the post-test is increased with the average value is 32.55, while the lowest value is 15 and the highest value is 45. It showed the advance grammar learning using the MEA learning model can affect learning achievements.

The distribution of the pretest and post-test scores in the experimental group can be seen in table 3 below:

Table 3. *Score distribution in the experimental group*

Internal Value	Category	Pretest		Post-test	
		Frequency	Percentage (%)	Frequency	Percentage (%)
26-50	Good	4	20	15	75
16-25	Fair	9	45	4	20
5-15	Poor	7	35	1	5

Based the results of the pretest on the table above, there are 20% or 4 students in the good category, 45% or 9 students in the fair category and 35% or 7 students in the poor category. And the score results of post-test after the treatment of using

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MEA learning model, there are 75% or 15 students in good category, 20% or 4 students in the fair category and 5% or 1 student included in the poor category.

Description of the score pretest and post-test of the control group

Statistical result with regards to the value of the original test (pretest) of students in the control class where the class is not given the treatment of Means-Ends Analysis (MEA) learning model implementation and the value of students' learning results after the treatment (post-test) can be seen in the following table:

Table 2. *Description of the pretest and post-test students' learning achievement scores of the experimental group*

No	Total Scores		Gain
	Pretest	Posttest	
1	8	10	2
2	8	10	2
3	10	8	-2
4	10	14	4
5	10	10	0
6	13	15	2
7	13	16	3
8	16	16	0
9	18	19	1
10	18	20	2
11	18	20	2
12	20	24	4
13	20	21	1
14	20	20	0
15	24	23	-1
16	24	20	-4
17	26	24	-2
18	28	24	-4
19	31	32	1
20	34	34	0
Total	369	380	11
Mean	18.45	19.00	0.55

Based on the table above, it can be concluded that of the 20 students in the control group, the average pretest score is 18.45, the lowest value is 8, and the highest value is 34. After the learning process was done without the MEA learning model treatment, it can be seen that the results of the post-test have increased slightly with an average value of 19.00, the lowest value is 8, and the highest value is 34. It showed that advance grammar learning

without special treatment (without using the AEC learning model) has a very little difference or in other words the pre-test and post-test values are almost the same.

The distribution of the pretest and posttest scores in the control group can be seen in table 5 below:

Table 3. *Value distribution in the control group*

Inter val	Cate gory	Pretest		Posttest	
		Freque ncy	Percen tage (%)	Freque ncy	Percen tage (%)
26-50	Good	4	20	2	10
16-25	Fair	9	45	12	60
5-15	Poor	7	35	6	30

The table above showed the results of the pretest, there are 20% or 4 students ae in the good category, 45% or 9 students are in the fair category and 35% or 7 students are in the poor category. While, in the results of post-test without treatment, there are 10% or 2 students in good category, 60% or 12 students in the fair category and 30% or 6 students are in the poor category.

To find out whether learning by using the MEA learning model can contribute to students' grammar advance learning achievements can be seen in table 6 below this:

Table 6. *Descriptive statistics of variables based on pretest and post-test results*

	Means-Ends Analysis (MEA)			
	Experimental Group		Control Group	
	Pre-test	Post-test	Pre-test	Post-test
Mean	18.45	32.55	18.45	19.00
SD.	7.660	9.310	7.660	6.943
Df	19		19	
t-table	2.093		2.093	
t-obtained	15.467		1.078	
Significance	0.000		0.295	

The table above showed a very significant difference in student grammar. It can be seen that the acquisition for the experimental group is 15,467 with a significance level of 0,000. Because t-obtained is higher than t-table (t-obtained 15.467 > t-table 2.093) with a significance level of p <0.05, Therefore, it showed that H0 is rejected. It means that there is significant influence in student grammar

before the treatment and after the treatment of using the MEA learning model. Meanwhile, t -obtained from the control group is less than t -table = 2.093 (t -obtained 1.078 > t -table 2.093) with a significance level of 0.295 is $p > 0.05$. It showed that using the MEA learning model in advance grammar courses can improve student learning achievements so it can be said that the MEA learning model really works well for the experimental group.

CONCLUSION

From descriptive statistics, it can be seen that the experimental class with the use of Means-Ends Analysis (MEA) learning model has a higher score than the control class. The result of inferential statistics in the hypothesis test is that H_0 is rejected. The null hypothesis (H_0) which is rejected was concluded that there is an influence of the implementation of the Means-Ends Analysis (MEA) learning model on the enhancement of statistical learning as a result of third-semester students of English Study program, FKIP UMP. Also, it is expected that the implementation of the Means-Ends Analysis (MEA) learning model can enhance student statistical learning results in data interpretation material.

The suggestions that can be presented are as follows; 1) The Means-End Analysis (MEA) learning model can be used to improve advance grammar learning achievements, 2) It is expected for further research can use this learning model for other subjects, 3) For further research, it is expected that the researchers understand the concept of Means-End Analysis (MEA) learning model so the research can be carried out optimally and get more satisfying results.

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