IMPROVING STUDENTS' ABILTY
IN PLACING ENGLISH WORD STRESS
THROUGH HAND GESTURE TECHNIQUE

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Abstract

This research was aimed at proving the use of hand gesture technique which can improve the students' ability in placing English word stress. Quasi-experimental with pre-test post-test non-equivalent group design was applied in this research. The research samples were the students in class VIIIA as the experimental group and VIIIC as the control group. The researcher selected the sample by using convenience sampling technique. The techniques of data collection were structured observation which was administered eight times and test which was conducted twice, those were pre-test and post-test. The data were analyzed statistically in order to know the significance of the achievement of the students in pre-test and post-test. By selecting the 0.05 level of significance and 37 as the degree of freedom (d.f. 20-1+19-1 = 37), the researcher computed the data and discovered that the observed t-value (9.02) was greater than the critical t-value (2.026). Due to this result, it has proved that the use of hand gesture technique can improve the students' ability in placing English word stress.

Keywords: Pronunciation; English Word Stress; Hand Gesture Technique

INTRODUCTION

Considering the communicative competence in mastering English spoken language, pronunciation plays important role rather than other sub-skills in order to be understood by the interlocutors. A speaker with good pronunciation is intelligible although other sub-skills errors–grammar & vocabulary–occurred; otherwise, it is very difficult to understand despite accuracy in other areas (Fraser, 2000). As exemplified in this following sentences, '*The boy play basketball every morning.*' which has grammar error; '*The boy basketball every morning.*' that is lack of vocabulary; '*The boy (pronounced as /beɪ/) plays basketball every morning.*' that occurs pronunciation error. By looking at these examples, it can be concluded that pronunciation error makes the speech not understandable.

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In order to avoid pronunciation errors, learners should learn some features of English pronunciation, such as phonemes in segmental features; also linking, intonation, and stress in suprasegmental features. However, the elements of suprasegmental features are important to be concerned more than phonemes (segmental features) because the sound of productions of linking, intonation, and stress (suprasegmental features) determine whether the speech is understandable or not. In line with what Nunan (1991:103) says: "It has been argued that these so-called suprasegmental features of the language are more important for comprehensible production than the individual sounds." Therefore, achieving intelligible pronunciation is got by mastering suprasegmental features.

Stress is divided into two parts, those are word stress and sentence stress. However, this article only focused on word stress. According to Cruttenden (2008:237), the term 'stress' refers to 'accent and promincence' which agree that loudness in accented syllable is produced by greater breath effort and muscular energy of vocal fold. Thus, the sound of the syllable produced is louder than the others syllable.

Dealing with English word stress, if the stress is put on the wrong syllable, it will affect the meaning and class of word. For example, "record /rɪˈkɔːd/" and "record /ˈrek.əd/" are the same word but have different stress placement. The first one is classified as verb which means to store voice and videos by using a tool or keep information by writing it down, whereas the later is noun that means the product from storing voice and video. Another factor why word stress is important to be learnt is because of different word stress pattern between BI and English. This factor becomes a problem for Indonesian learners who learn English. Most Indonesian linguists believe that stress in BI tends to fall on the penultimate syllable (Dardjowidjojo, 2009), for example: ˈbaca-memˈbaca-membaˈcakan. However, the stress in English is more complex. It can fall on any syllable of a word, for example: believe /bɪˈliːv/ which falls on ultimate syllable (final), potato /pəˈteɪ.təʊ/ which falls on penultimate syllable, or /ˈsɪ.nə.mə/ which falls on antepenultimate syllable. Due to the fact, English dictionary provides the transcription of each word. It shows that an English word must be learnt along with how it is pronounced. Placing the correct stress on a syllable of an English word, there are only few techniques which also may be unknown to English teachers.

Hand gesture is one of the techniques in placing English word stress. It refers to the technique that shows hand signals or movement (e.g. clapping, clicking, and making fist) (AMEP, 2002) which are derived from the hand gestures to convey meaning. When we speak, unconsciously, we use hand gesture to make the utterance easy to understand. The use of hand gesture technique also does not take long time in the learning process. Moreover,

students do not feel bored, yet exciting because the use of hand gesture involves physical movement during learning English pronunciation class. Hence, the researcher believes that the use of hand gesture technique is very effective, efficient, and enjoyable for students which can improve students' ability in placing English word stress.

According to the statements explained above, the researcher then designed research problem as follows: *Can the use of hand gesture technique improve the ability of the eighth grade students of SMP Negeri 19 Palu in placing English word stress?* Therefore, the objective of the research was to find out whether the use of hand gesture technique could improve the ability of the eighth grade students of SMP Negeri 19 Palu in placing English words stress. The researcher limited the research by teaching English word stress of verbs and nouns. In relation to the stress levels, the researcher only covered primary stress in this research. Dealing with the morphological properties, the English words which were taught were included mono-morphemic, bi-morphemic, and poly-morphemic words, for example 'photo–photograph–photographer'.

METHODOLOGY

Conducting this research, the researcher used quasi-experimental with the pre-test post-test non-equivalent group design. In this research design, there were two groups: experimental and control groups. Both groups were not equated by randomization so that it was called non-equivalent group design. Experimental and control group were given pre-test and post-test, but only the experimental group was given the treatment. The research design is represented as follow (Cohen, Manion, & Morrison, 2007:283) :

	pre-test	**treatment**	**post-test**
experimental	O1	X	O2
control	O3		O4

Where:
- O1 : pre-test for experimental group
- O2 : post-test for experimental group
- O3 : pre-test for control group
- O4 : post-test for control group
- X : treatment

The population selected was the eighth grade students of SMP Negeri 19 Palu academic year 2014/2015. There are four classes at the eighth grade students consisting of 20

students in each class –8A and 8B; and 19 students in each class – 8C and 8D. Thus, the total population was 78 students.

Due to quasi-experimental with the pre-test post-test non-equivalent group design, the control and experimental groups were chosen and assigned out of convenience rather than through randomization. Hence, the researcher used convenience sampling technique to choose the samples. Convenience sampling involves the required samples who happen to be available and accessible at the time (Cohen, Manion, & Morrison, 2007). Choosing the samples, the researcher selected class 8A as the experimental group and class 8C as the control group.

As stated on the title, the researcher used two research variables in this research. They are dependent and independent variables. Hatch and Farhady (1982:15) state, "Independent variable is the major variable which you hope to investigate; on the other hand, dependent variable is the variable which you observe and measure to determine the effect of the independent variable." Therefore, the independent variable of this research was the use of hand gesture technique and the dependent variable was the students' ability in placing English word stress.

To collect data in this research, the researcher used structured observation and test as the techniques of data collection. The observation was conducted eight times during the treatment. The students language behaviors observed were pronouncing a word both with wrong phonemes (sounds) and stress placement; and pronouncing a word with wrong stress placement. These behaviors were considered as pronunciation errors. When the errors occurred, then the researcher marked a tick in the observation schedule provided. The observation data from the eight meetings were compiled and presented in table and figure. Another technique was test consisting pre-test and post-test. Before giving the treatment – that was the use of hand gesture in placing English word stress – to experimental group, the researcher administered the pre-test to both experimental and control groups. After that, the post-test was given also to both groups in order to get data about the effect of the treatment.

The result of the data got from the test was analyzed statistically. At first, the researcher calculated the individual score by using the formula proposed by Arikunto (2006:308) as follow:

$$\Sigma = \frac{x}{N} \text{ X } 100$$

Where: $\quad\Sigma\quad$ = standard score

x = students score

n = maximum score
100 = constant number

Then, the researcher computed mean score of both experimental and control groups by using formula proposed by Hatch and Farhady (1982:56) as follow:

$$\bar{x} = \frac{\sum X}{N}$$

Where:
$\bar{x}$ = mean
$\sum X$ = sum of students' scores
N = total number of the students

Next, the researcher calculated the difference between each pair of scores–pre-test and post-test scores–in the experimental and control groups by using the formula proposed by Hatch and Farhady (1982:115) as follow:

$$D = X_2 - X_1$$

Where :
D = difference
X_2 = student's post-test individual score
X_1 = student's pre-test individual score

After calculating the difference of the scores, the researcher calculated the standard deviation of differences of each group–experimental and control groups. The researcher applied the following formula stated by Hatch and Farhady (1982:116):

$$S_D = \sqrt{\frac{\sum D^2 - \left(\frac{1}{n}\right)(\sum D)^2}{n-1}}$$

Where:
S_D = standard deviation of differences
$\sum D$ = sum of the deviation scores
n = total number of students

The next step was computing the standard error of differences of both groups. The researcher used the formula proposed by Hatch and Farhady (1982:105) as shown below:

$$S\bar{D} = \sqrt{\left(\frac{S_1^2}{n_1}\right) + \left(\frac{S_2^2}{n_2}\right)}$$

Where: $S\overline{D}$ = standard error of differences
S_1 = standard deviation of the experimental group
S_2 = standard deviation of the control group
n_1 = the numbers of students in the experimental group
n_2 = the numbers of students in the control group

Lastly, the researcher counted the observed t-value by using the following formula proposed by Hatch and Farhady (1982:117):

$$t = \frac{\overline{X}_1 - \overline{X}_2}{S\overline{D}}$$

Where: t = observed t-value
$\overline{X}_1$ = mean of deviation scores of experimental group
$\overline{X}_2$ = mean of deviation scores of control group
$S\overline{D}$ = standard error of differences

FINDINGS

First, the researcher conducted the structured observation of the students' pronunciation errors in every meeting, therefore there were eight times in total. After doing the observations in the treatment process, the researcher compiled the data by using the observation schedules and analyzed them.

Based on the table 1 and figure 1 below, the students' pronunciation errors got decreased in every meeting. The data showing 'students pronounce a word with wrong phonemes (sounds) and stress placement' were decreased in which the errors occurred were 18 to 2 times; while 'students pronounce words with wrong stress placement' were from 16 times to one time. Hence, it means that the use of hand gesture during learning activities improved the students' pronunciation and ability in placing English word stress. The following is the table and chart which show the result of the observation:

Table 1: The Table Description of Phenomenon and its Frequencies in the Observation

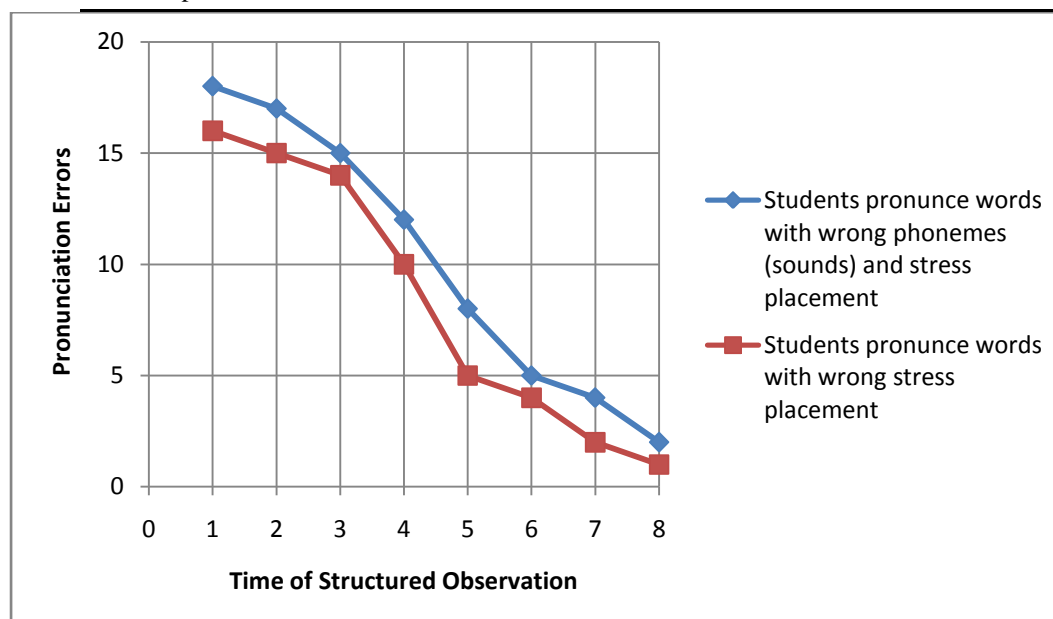| Phenomenon	Total of Frequencies							
	1st	2nd	3rd	4th	5th	6th	7th	8th
Students pronounce a word with wrong phonemes (sounds) and stress placement	18	17	15	12	8	5	4	2
Students pronounce words with wrong stress placement.	16	15	14	8	5	4	2	1

Figure 1: The Students' Pronunciation Errors in Experimental Group

Next is the result of the tests. The researcher calculated the mean score on pre-test and post-test using the data represented in table 2. Not only was the mean score counted, but also the difference or deviation was. The experimental and control groups' difference on pre-test and post-test also was shown in table 2.

Mean score of experimental group on pre-test

$$\bar{x} = \frac{\sum X}{N} = \frac{660}{20} = 33$$

Mean score of control group on pre-test

$$\bar{x} = \frac{\sum X}{N} = \frac{725}{19} = 38.15$$

Mean score of experimental group on post-test

$$\bar{x} = \frac{\sum X}{N} = \frac{1550}{20} = 77.5$$

Mean score of control group on post-test

$$\bar{x} = \frac{\sum X}{N} = \frac{822.5}{19} = 43.28$$

In relation to the scope of the research, the researcher calculated the percentage of the error rate of nouns and verbs occurred on the pre-test and post-test of both groups. There were 30 numbers consisted of nouns and verbs on the pre-test and post-test. The error rate data were represented in table 3.

Table 2: Differences of Pre-test and Post-test in Experimental and Control Groups

No	Initial Names	Experimental Group Students' Scores Posttest	Pretest	D	D^2	Initial Names	Control Group Students' Scores Posttest	Pretest	D	D^2
1	AAS	92.5	62.5	30	900	AAR	47.5	62.5	-15	225
2	ARD	75	30	45	2025	AHJ	37.5	17.5	20	400
3	ASZ	50	25	25	625	AKU	5	15	-10	100
4	AWU	65	20	45	2025	APD	40	45	-5	25
5	AZS	87.5	15	72.5	5256.25	ASN	30	27.5	2.5	6.25
6	MAB	67.5	30	37.5	1406.25	ARW	45	32.5	12.5	156.25
7	MAL	80	50	30	900	CAF	55	42.5	12.5	156.25
8	MRA	90	30	60	3600	CPL	47.5	45	2.5	6.25
9	MSR	90	17.5	72.5	5256.25	HSN	15	15	0	0
10	MWA	100	82.5	17.5	306.25	MAN	50	32.5	17.5	306.25
11	MZZ	62.5	25	37.5	1406.25	MCH	67.5	47.5	20	400
12	NAI	77.5	35	42.5	1806.25	MIS	55	60	-5	25
13	NFA	82.5	42.5	40	1600	MRH	57.5	47.5	10	100
14	MRW	75	40	35	1225	MSO	35	30	5	25
15	RDP	85	45	40	1600	PAA	47.5	60	-12.5	156.25
16	RKU	60	27.5	32.5	1056.25	PRI	50	50	0	0
17	RRA	85	27.5	57.5	3306.25	SLM	47.5	22.5	25	625
18	RWU	77.5	27.5	50	2500	TPW	35	27.5	7.5	56.25
19	SAD	62.5	12.5	50	2500	TRR	55	45	10	100
20	SDE	85	15	70	4900					
TOTAL		**1550**	**662.5**	**890**	**44200**		**822.5**	**725**	**97.5**	**2868.75**

After computing the mean deviation of the experimental and control groups, the researcher also computed the standard deviation of the differences of both groups. The researcher applied the formula proposed by Hatch and Farhady (1982:116). The following is the computation:

$$S_1 = \sqrt{\frac{\sum D^2 - \left(\frac{1}{n}\right)\left(\sum D\right)^2}{n-1}}$$

$$S_1 = \sqrt{\frac{44200 - \left(\frac{1}{20}\right)(890)^2}{20-1}}$$

$$S_1 = \sqrt{\dfrac{44200 - \left(\dfrac{1}{20}\right)(792100)}{19}}$$

$$S_1 = \sqrt{\dfrac{44200 - 39605}{19}}$$

$$S_1 = \sqrt{\dfrac{4595}{19}}$$

$$S_1 = \sqrt{241.84}$$

$$S_1 = 15.55$$

Table 3: Error Rate of Nouns and Verbs on the Pre-test and Post-test

No	Initial Names	Experimental Group				Initial Names	Control Group			
		Pre-test (%)		Post-test (%)			Pre-test (%)		Post-test (%)	
		Nouns	Verbs	Nouns	Verbs		Nouns	Verbs	Nouns	Verbs
1	AAS	14	22	5	0	AAR	33	22	62	22
2	ARD	67	67	19	33	AHJ	86	56	57	44
3	ASZ	67	67	38	56	AKU	95	67	100	78
4	AWU	86	67	29	22	APD	48	67	57	67
5	AZS	90	67	0	11	ASN	71	56	71	56
6	MAB	81	22	33	33	ARW	71	33	62	33
7	MAL	52	22	19	11	CAF	62	33	43	33
8	MRA	62	44	5	0	CPL	48	33	43	44
9	MSR	81	67	5	0	HSN	76	78	95	56
10	MWA	10	11	0	0	MAN	67	56	43	44
11	MZZ	81	44	29	22	MCH	48	22	24	11
12	NAI	67	33	19	11	MIS	38	33	43	11
13	NFA	38	67	10	11	MRH	62	22	52	22
14	MRW	52	56	33	11	MSO	67	56	67	44
15	RDP	62	11	10	0	PAA	52	11	62	22
16	RKU	71	56	57	22	PRI	48	22	62	11
17	RRA	67	44	14	0	SLM	76	67	48	33
18	RWU	52	67	19	22	TPW	76	67	81	22
19	SAD	86	89	38	11	TRR	67	22	48	11
20	SDE	90	56	14	11					
	TOTAL	425	140	132	41		397	117	373	95

The standard deviation of the differences of the experimental group's score was 15.55

$$S_2 = \sqrt{\dfrac{\sum D^2 - \left(\dfrac{1}{n}\right)(\sum D)^2}{n-1}}$$

$$S_2 = \sqrt{\frac{2868.75 - \left(\frac{1}{19}\right)(97.5)^2}{19-1}}$$

$$S_2 = \sqrt{\frac{2868.75 - \left(\frac{1}{19}\right)(9506.25)}{18}}$$

$$S_2 = \sqrt{\frac{2868.75 - 500.32}{18}}$$

$$S_2 = \sqrt{\frac{2368.43}{18}}$$

$$S_2 = \sqrt{131.57}$$

$$S_2 = 11.47$$

The standard deviation of the differences of the experimental group's score was 11.47

After computing the standard of the differences of both groups, the researcher needed to calculate the standard error of differences which she would apply to the formula of observed t-value. The computation can be seen as follow:

$$S\overline{D} = \sqrt{\left(\frac{S_1^2}{n_1}\right) + \left(\frac{S_2^2}{n_2}\right)}$$

$$S\overline{D} = \sqrt{\left(\frac{15.55^2}{20}\right) + \left(\frac{11.47^2}{19}\right)}$$

$$S\overline{D} = \sqrt{\left(\frac{241.80}{20}\right) + \left(\frac{131.56}{19}\right)}$$

$$S\overline{D} = \sqrt{12.09 + 6.92}$$

$$S\overline{D} = \sqrt{19.01}$$

$$S\overline{D} = 4.36$$

Therefore, the standard error of differences was 4.36

Next, the researcher calculated the observed t-value of the experimental and control groups by using the data got above. The observed t-value was calculated by using the formula in the following way:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{s\overline{D}}$$

$$t = \frac{44.5 - 5.13}{4.36}$$

Therefore, the observed t-value was 9.02.

$$t = \frac{39.37}{4.36}$$

$$t = 9.02$$

After getting the observed t-value, the researcher tested the research hypothesis whether it was accepted or rejected. However, before deciding whether the research hypothesis was accepted or rejected, the researcher had to find the degrees of freedom of the sample by using the formula proposed by Hatch and Farhady (1982:112) where (d.f.) n_1-1+n-1, (d.f.) 20-1+19-1 was 37. Since the 37 degrees of freedom value is not listed in the t-distribution table, the researcher computed the critical t-value by applying the interpolation computation shown below:

a : $37 - 30 = 7$

b : $40 - 30 = 10$

c : $30 \Longrightarrow 2.04$

       $40 \Longrightarrow 2.02$

       $2.04 - 2.02 = 0.02$

       $\frac{a}{b} \, x \, c$

       $\frac{7}{10} \, x \, 0.02 = 0.014$

Therefore, to get the critical t-value, the computation was $2.04 - 0.014 = 2.02$

DISCUSSION

The researcher entitled this research: "Improving Students' Ability in Placing English Word Stress through Hand Gesture Technique". The objective of this research was to find

out whether the use of hand gesture technique could improve the ability of the eighth grade students of SMP Negeri 19 Palu in placing English word stress. The researcher limited this research on placing English word stress in verbs and nouns through hand gesture technique.

At the first step, before the treatment given, the researcher conducted pre-test for the students. This pre-test was aimed to test their ability in placing English word stress. The pre-test was given to the both groups, namely experimental group and control group. Dealing with the scope of this research, the researcher calculated the error rate of nouns and verbs occurred on the pre-test in which it is represented in table 3. According to the data showed in table 3, there were 60% of the students in the experimental group that had greater nouns' error rate, 30% of them having greater verbs' error rate, and 10% of them who had the same error rate of both nouns and verbs. However, in the control group, there were 89.47% of the students having greater nouns' error rate and 10% of them that had greater verbs' error rate. In short, the data shows that most students of both the experimental and control groups on pre-test had problem in placing English word stress in nouns.

Next, in order to solve students' problem in placing English word stress, the researcher gave treatment to the students of the experimental group. They were treated by using hand gesture technique in eight meetings. However, at the first meeting, the researcher explained briefly what syllable and stress are. After that, the researcher taught how to place English word stress by doing hand gesture, such as clapping hands, making fist, clicking, and moving hand up and down. Then, the students were asked to repeat and to model after the researcher. Most students tended to use clapping hands and moving hand up and down while they were pronouncing English words because they thought those hand gestures made them easier to understand in placing English word stress. They also showed a lot of attention and enjoyed the learning activities so much because they learnt English by doing physical activities, those were hand gestures. Moreover, during the treatment, the researcher did structured observation to find out how many times the students made pronunciation errors in the learning activities. The learning activities were related to the students' performance while they were pronouncing the English words by doing hand gesture in the pronunciation games. Due to the results of observation (table 1 and figure 1), the frequency of the first phenomenon –students pronounce a word with wrong phonemes (sounds) and stress placement– was 18 times on first meeting and 2 times at last meeting, the frequency of the second phenomenon –students pronounce words with wrong stress placement– was 16 times on first meeting and 1 time in the last meeting. Hence, it means

that the students' pronunciation errors were getting decreased in every meeting. This fact showed that the use of hand gesture technique in placing English word stress was effective.

In order to know students' improvement after getting the treatment, the researcher conducted post-test for the students. Then, the researcher calculated the error rate of nouns and verbs occurred on the post-test. Based on the error rate data showed in table 3, there were 65% of the students in the experimental group that had greater nouns' error rate, 25% of them having greater verbs' error rate, 5% of them who had the same error rate of both nouns and verbs, and 5% of them having no error rate of nouns and verbs. However, there were 78.94% of the students in control group having greater nouns' error rate and 21.05% of them that had greater verbs' error rate. Hence, the data shows that most students of the experimental and control groups in post-test had problem in placing English word stress in nouns as well.

By looking at the results of the error rate on pre-test and post-test, the researcher concluded that most students in experimental and control groups had problem in placing English word stress on nouns rather than verbs. Moreover, the researcher also drew conclusion that the students' ability in placing English word stress in the experimental group were improved. Although the nouns' error rate on the post-test was greater than that on the pre-test, the individual value of each students nouns' and verbs' error rate was decreased significantly. As the example, the student 'MSR' had 81% nouns' error rate and 67% verbs' error rate on pre-test, while he only had 5% nouns' error rate and no verbs' error rate on post-test. Another example is the student 'MWA' had 10% nouns' error rate and 11% verbs' error rate on pre-test, whereas on post-test she had no error rate of both nouns and verbs. Therefore, it was proved that the use of hand gesture technique in placing English word stress was very effective. The use of hand gesture can make the students understand easily to place the appropriate stress placement.

Hence, there are two points concluded from this research which are in line with the experts' theories. First, most students in experimental and control groups had problems in placing English word stress in nouns rather than that in verbs. For the students, stress in nouns is more complicated to predict rather than in verbs. This result is supported by the examples given by Basri (2004), those are stress in nouns can fall on any syllables (ultimate, penultimate, ante-penultimate, pre-antepenultimate, pre-pre-ante-penultimate), while stress in nouns is not. Second, the use of hand gesture technique was effective for the students in placing English word stress. This statement is in line with the theory stated by Kelly, Manning, & Rodak (2008:1), that is "The combination between gesture and speech

reveals meaning of the words, phrases, or sentences." This theory relates to this research. Moreover, it also supports that the result of this research which is the students' ability in placing English word stress got improved by applying hand gesture technique. By doing hand gesture while pronouncing English word, the students can easy to understand where the stress is placed.

CONCLUSION AND SUGGESTIONS

After collecting and analyzing the data, the research problem stated in the introduction can be solved. According to the result of the data analysis, the researcher computed and found that the observed t-value was 9.02 and critical t-value was 2.026 by selected the 0.05 level of significances with 37 degrees of freedom as the indicators. These results showed than the observed t-value was higher than the critical t-value which means that the research hypothesis was accepted. By all means, it answered the research problem and also proved that the use of hand gesture technique can improve the ability of the eighth grade students of SMP Negeri 19 Palu in placing English word stress.

The researcher would like to offer some suggestions for students, teachers, and other researchers. The first one is for the students. Students as the English learners should not be afraid and ashamed to make mistakes in practicing English. If the students follow this suggestion, their English pronunciation surely can be improved. Next, the teachers should speak more English than Indonesian in classroom, so that the students will be accustomed with the general English instructions during the learning activities. The last, the researcher suggests the other researchers to conduct another research which is related to–e.g.: the use of hand gesture technique in placing English sentence stress. This suggestion is highly recommended because the effectiveness of this technique was proved.

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