
The Effectiveness of Mind Mapping Phonetic Symbol Media to Eliminate The Confusion of Pronunciation

M. Hilmy Hidayatullah ¹⁾, Annisa Kurnia Asri ²⁾ Ismil Asiffin ³⁾, Sirrul Bari ⁴⁾

^{1, 2, 3, 4} English of Department, Social and Humanity Science Faculty, University of Ibrahimy

Email Correspondence. hilmyzulhil@gmail.com, : Annisakurniaasri@gmail.com,
fifinismil@gmail.com, sirrulbari1992@gmail.com.

ARTICLE INFO

*Keywords: Mind Mapping
Phonetic Symbol, Confusion of
Pronunciation*

Article History:

Received : 12 August 2022
Revised : 13 August 2022
Accepted : 13 August 2022
Published : 16 August 2022

ABSTRACT

Pronunciation was one of difficult skill, it made many people confused. This research aimed to determine a solution by using mind mapping phonetic symbol media to eliminate the confusion of pronunciation. The content of mind mapping showed the part of phonetic symbol to study the sound of words. It has helped the understanding of some difference sounds. This research used quantitative true-experimental method by pre-posttest control group design. The tests carried out are validity, reliability, descriptive analysis, and t-test. Subject of this research is 30, it was divided 15 students for experiment group and 15 control group. The sample was taken by using random sampling and applied Slovin formula. While, the data was obtained by using reading test. The value of descriptive analysis there was a raising value which can be seen from mean post-test experiment group 72 it was higher than control group 36.6. And also, the quarrel of normal gain between experiment group and control group showed $75% > 28.57%$, 3 students from experiment group than a student of control group. Furthermore, the value of t-test was there was an influence to eliminate the confusion of pronunciation by using mind mapping phonetic symbol, it can be seen from the trials that have been tested in SPSS obtaining a t-count value of $8,290 > 1,7$, it can be said that H_0 is rejected and H_a accepted which it means that There were an influence of mind mapping phonetic symbol media (X) to eliminate the confusion of pronunciation (Y).

1. Introduction

Pronunciation is an important part of English language when someone is transferring knowledge to other people (Chan, 2018, p. 2). Pronunciation spelling is a placement pronunciation in which syllables of certain commonly used words, word groups, clauses, or even sentences are accustomed together to create a reduction in the structure of words (Demerzen, 2019, p. 276). The pronunciation is included in one of the English language components besides grammar and vocabulary. They need to pronounce some words clearly enough to understand in order to avoid misunderstanding. This refers to an important part of pronunciation. This refers to an important part of pronunciation.

Pronunciation spelling is a placement pronunciation in which syllables of certain commonly used words, word groups, clauses, or even sentences are accustomed together to create a reduction in the structure of words. Pronunciation is considered one of the most difficult skills in English language teaching and learning requires a great deal of work and effort (Haghighi & Rahimy, 2017, p. 42). Furthermore, teachers can improve pronunciation skills by deepening phonetics symbols understanding. The term pronunciation spelling which is also called relaxed pronunciation refers to a phonetic symbol pronounce (phonetic symbols respelling) of a word that does not have a standard spelling (Demerzen, 2019, p. 313). It can help to understand and to pronounce some words and it can eliminate the confusion of pronunciation. The teacher can make a new media such as unification between phonetic symbols and mind mapping so that students interest to study pronunciation and they are easy to understand.

The phonetic symbol is some describe or produce sounds, it is necessary to know the pronunciation of the individual word and how some sounds differ from all others (Dolnicat et al., 1997). The efficiency of phonetic symbols incorporated into multimedia-based pronunciation learning management system on the acquisition of English pronunciation among the non-native English speakers have not been extensively investigated (Qiu & Hewitt, 2005, p. 45). Pronunciation instruction is how some words neglected the linguistic system in foreign language education due to teacher's attitudes, inadequate teacher training, and lack of appropriate materials in textbooks (Haghighi & Rahimy, 2017, p. 43).

If we study phonetic symbols in the English language, it will be related to IPA (International Phonetic Alphabet). IPA is a symbol system to use in pronouncing words which use in the world. The first version of the International Phonetic Alphabet (IPA) symbols applicable to all languages was successfully devised in 1888.(Fried & Hisrich, 1994, p. 74). Pronunciation instruction is how some words neglected the linguistic system in foreign language education due to teacher's attitudes, inadequate teacher training, and lack of appropriate materials in textbooks (Pokrivčáková, 2015).

In this research, the researcher applied the mind mapping phonetic symbol to eliminate the confusion of pronunciation by spelling activities, drilling, minimal pairs, and related activities, and taping students' pronunciation. To acquire a goal to eliminate the confusion of pronunciation, the teacher can also drill with to pay attention to some symbols of words, then students can listen and imitate every phonetic symbol that has been taught.

One teaching and learning strategy that recently emerged in higher education as a means to support student critical thinking is the nonlinear learning technique of Mind Mapping (Pudelko et al., 2012, p. 46).³ A Mind Map is visual diagram used to record and organize information in a way which the brain finds captivating and easy to process (Arulsevi, 2017, p. 14). Mind mapping in visuals is able to help a person to discriminate words, often with symbols and colours. Mind mapping is one of the media that be able to use for teaching pronunciation. Using mind mapping for lesson planning can help teachers or trainers identify a logical plan or teaching route and increase recall of the subject matter (Boyson, 2009, p. 12). By using mind mapping media students can discriminate words and the sounds which become a symbol of the words. The draft of mind mapping can have variations with arranged sounds of the words. It is able to facilitate students to eliminate the confusion of pronunciation. Students perceived mind mapping media as an interesting media, fun, motivating approach to learning some lesson, they are able to learn with fun when looking the design of mind mapping which a great deal of choice in symbols, keywords, and some colours (Goodnough & Long, 2002).

In addition, the phonetic symbol also some sounds for use in the English language then we use in speaking the teacher can make a new method and a new media such as unification between phonetic symbols and mind mapping so that students can be interesting to study pronunciation and be easy to understand. Mind mapping can help the process of the human brain which is divisible by two divisions. Finally, students can be easy to understand and practice. When mind mapping combines with the phonetic symbol can give a new strategy for learning pronunciation. Students can know the position of words and they can easily practice it. Then the confusion of pronunciation can eliminate. Based on the observation that was executed by the researcher in the Ninth Grade A at SMP Ibrahim 3 Sukorejo in The Academic Year of 2021/2022, on 05 of June 2020. It was found that the student's pronunciation was poor because often there are some confusions and wrong pronunciation when reading English text or speak English by E-mail.

2. Methods

The Research design is plan and the procedures for research to get detailed methods of data collection and analysis by the researcher (Creswell, 2014, p. 20). The design of this research applied an experiment method. The experiment method is one of the kinds of quantitative approach. Experiment method constitutes research which can be trade on the scientific because is made by firm controlling to intruder variable (Borg, 1983, p. 27). The researcher applied true experimental design with chose one-way pre-test and post-test control group method. The group receiving the treatment is called the experimental group and the other group is the control group. Therefore, the researcher conducted two groups, they are experimental group and control group. The experimental group is the group that will accept the treatment of mind mapping phonetic symbol media, while the control group will not be exposed to the experimental treatment. This research is utilized into two groups. The experimental group, receives a treatment (x) while the control group does not. Each group were given a pre-test and a post-test. The pre-test and post-test control group design.

The population in this research will take from the ninth grade A of SMP Ibrahimy 3 Sukorejo Situbondo academic year 2021/2022. Population in the ninth grade A is 33 students. The researcher took the sample by using Random Sampling. A sample is a small subgroup chosen

from the larger population (Bordens & Abbott, 2014, p. 49). Experimental research design is research design that does not provide for full control of potential confounding variables (Johnson & Christensen, 2019, p. 19). The formula is taken by using the Slovin.

The researcher has divided 30 samples into two classes, namely group A with 15 students and group B with 15 students. The researcher took the sample with random technique to determine which class will be the experiment class and which will be control class. Sample random technique is the interpretation of sampling method from a population with using random style without observer a level in the population (Gunawan, 2015, p. 49) The researcher chose the participant with made small pieces of rolled paper. If the name come out, it became a sample for treatment from A group as an experimental group or B group as a control group.

In this research, the researcher used a pre-test conducted before the treatment to the experimental class and also control class with reading aloud English text. Then the writer applied the mind mapping phonetic symbol only to the experimental class. After that, the experimental class and control class conducted the post-test with reading aloud English text.

An instrument is anything used to collect data (Schreiber & Asner-Self, 2011, p. 20). A research instrument is a tool used to collect data in research. This study used a pre-test in the first meeting and a post-test in the last meeting. The instrument of the pre-test in this research was reading aloud narrative text that has to pronounce clearly and correctly to know students' pronunciation of particular words. This research focuses on the pronunciation of the particular words and not observing reading comprehension, in order to know the confusion of students' pronunciation.

A data scale is an agreement of reference to determine an interval of a measuring instrument. This research has used a Rating Scale. A Rating scale is incomplete data that was gotten from a value that was translated to qualitative, so the respondent without answer question qualitative but only answer one question quantitatively (Sugiyono, 2008). The important is the researcher must be able to interpret every value of the quantitative to the interpretation of qualitative. The validity is an instrument that indicates the function of some test when it works to measure data (Purwanto, 2008, p. 85). It is the extent to which the questions on the instrument than the scores from these questions are representative of the questions that could be asked about the content or skill. It is used to determine how much these instruments have reflected the result. he validity was helped by using the criteria of an instrument that was used for the foundation (Sugiyono, 2013). The researcher used a reading test with some indicators of criteria. To examine the instrument, the researcher correlates the item score with the total score by correlating Product Moment. The indicator is valid or not can be seen by using a significant 5% ($\alpha=0,05$), if r count $\geq r$ table. To determine r count use SPSS application by looking at the value of item correct total correlation. Based on the table 4.4, it was known that value of variable X r count $> r$ table, than the standard of balance = $n-15 = 15-2=13$ for alpha 5% is 0,441. So, it can be concluded the item instrument of variable X_1 and Y is valid. Those are (1).0.704; (2). 0.789; (3). 0.632; (4).0.790; (5).0.689; (6).0.705; (8).0.789; (9). 0.623;

The reliability indicated the levels refer to the consistency or stability of the test scores (Sugiyono, 2013, p. 184). It means that scores from an instrument are stable and consistent. For this study, the researcher used test-retest reliability to measure the reliability of the instrument.

Test-retest reliability is a test that gives twice for the participant to get two scores. The researcher used a correlation coefficient among two scores (Interclass Correlation), it obtained test-retest reliability. For this reliability analysis, the researcher used the SPSS application, by sig. level value 5% ($\alpha=0,05$). If the value of Alpha Cronbach $> 0,6$ so the instrument is reliable. it was indicated that all the variable has result reliability more than *Cronbach Alpha* 0,60 ($a = 0,60$), Variable X= 0.884 > 0.600 , Variable Y = 0.662 > 0.600 . So, the all variable is reliable

The researcher used a pre-test conducting before data the treatment to the experimental class and also control class with reading aloud English text. Then the writer applied the mind mapping phonetic symbol only to the experimental class. After that, the experimental class and control class conducted the post-test with reading aloud English text.

Descriptive analysis is statistics used to summarize data (Hatch & Farhady, 1982). The research delivered some data which was analysed in order to get the summarized data. This research used the SPSS application program to know the summarize data. Descriptive data is used to get the conclusion of data value by mean, median, modus, and standard deviation. This test is used to know the difference result between pre- test and post-test. So, it can be seen the data will be influenceor not. The researcher used the SPSS application to get the result.

The researcher used the SPSS application to get analysis data of Normality test. This test is used to know the difference result between pre- test and post-test. So, it can be seen the data will be influenceor not. Then normality is used to know the normality of data and to find out the distribution of data. It is used to measure whether the data in the experimental class and control class are normally distributed or not (Isnawati et al., 2020, p. 13). The researcher used the SPSS statistic program with the *Kolmogorov Smirnov formulation*. The interpretation of the test of normality can be concluded as follows: If the value of Asymp. Sig. (2-tailed) is grate than the rate of 5% Alpha (Asymp. Sig (2-tailed) $> 0,005$) it can be concluded that the data derived from populations that are normally distributed. It is used to determine whether the sample taken from the population have the same variance or do not show any significant differences from each other. Interpretation of the result of the homogeneity test is by looking at the value of Sig. (2-tailed). The test of homogeneity used SPSS statistic program. The hypotheses for the homogeneity test are If the significance is less than 0,05 (Sig. (2-tailed). $<0,05$), the variants differ significantly (not homogeneous).

The researcher used T-test to know the influence of media for sample which can be used to population. So, it will give a result of the effect of media. The media can give an influence or not.

3. Result

3.1 The The Description of Research Data

The aim of this research eliminated the confusion of pronunciation taught by using a mind mapping phonetic symbol. This research applied for 15 students of group A as an experimental group, and 15 students of group B as a control group. The experimental group was conducted treatment by using mind mapping phonetic symbol media, while the control group was without using mind mapping phonetic symbol media. The data of this research include a score before treatment (pretest) and a score after treatment (posttest).

Tabel.1 Data Description of Pre-test Group Control and Group Experiment

No	DESCRIPTION	CONTROL	EXPERIMENT
1	MINIMUM SCORE	10	10
2	MAXIMAL SCORE	60	60
3	MEAN	32,667	34
4	MEDIAN	30	30
5	MODUS	20	30
6	STANDARD DEVIATION	13.87	13,52

Based on table.1 the mean of a pre-test control group is lower than the experiment group (32,667 ex.groups < 34 cont.group), the median of a control group and experiment group is similar 30. While the modus of the experiment group is higher than control group (30 ex.group>20 cont. group). For the standard deviation, the experiment group 13,52 was closer to the central point, but the control group was 13.87 it is far from the central point. So, the conclusion is experiment group is higher than the control group.

Tabel. 2 Data Description of a Post-test Group Control and Group Experiment

No	DESCRIPTION	CONTROL	EXPERIMENT
1	MINIMUM SCORE	20	60
2	MAXIMAL SCORE	60	90
3	MEAN	36,6	72,667
4	MEDIAN	40	70
5	MODUS	37	70
6	STANDARD DEVIATION	12,3	8,83

Based on table. 2 the mean of the experiment group is higher than the control group (72,667 ex.group < 36,6 cont.group), the median of an experiment group is higher than control group (70 ex.group > 40 cont.group). While the modus of experiment group is higher than the control group (70 ex. groups>37 cont. group). For the standard deviation, the experiment group 8,83 was closer to central point, but the control group is 12,3 it is far from the central point. So, the conclusion is a post-test experiment group is higher than the control group.

Tabel.3 Result Test of NG Post-test Group Control and Group Experiment

Category	Control	Experiment
LOW	0.00%	42.86%
MEDIUM	11.11%	50.00%
HIGH	28.57%	75.00%
AVERAGE	12.50%	60.00%

Based on table. 3, it showed that the result of normality gain percentage of experiment group is higher than control group $75\% > 28.57\%$, there are 3 students of experiment group which got the higher value. While only a student from control got the higher value.

For experiment group which got a low value, 42.86% are 3 students. There are 10 students of in the control group got low value (0.00%). While 3 students of the experiment group got medium value. Then only a person of the control group got the medium value. For mean, there are 5 students of experiment group, and 3 students control group. It determined the difference value between experiment group and central group.

3.2 Normality Test

This test was conducted to determine whether the distribution of score data is normally distributed or not. It is useful to determine data that had been collected is normal distribution or taken from a normal population. The researcher used the SPSS application to get the result.

Tabel. 4 Test of Normality Experimental Group

group	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
pretest experiment	.150	15	.200*	.960	15	.692

*. This is a lower bound of the true significance.

Based on the table above can be concluded that Experiment group sig = $.692 > 0,05$, so H_a accepted and H_0 is rejected. It means data that had been collected is normally distributed.

Tabel. 5 Tests of Normality Control Group

Group	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Control	.166	15	.200*	.942	15	.409

*. This is a lower bound of the true significance.

Based on the table above can be concluded that: Control $.409 > 0,05$, so H_a accepted and H_0 is rejected. It means data that had been collected is normally distributed.

3.3 Homogeneity Test

The homogeneity test is a test of the equal or not the variances of two or more distributions. The researcher used the SPSS application to get the data of homogeneity test. The homogeneity test is a test of the equal or not the variances of two or more distributions. The researcher used the SPSS application to get the data of homogeneity test..

Tabel .6 Test of Homogeneity of Variance of Experiment Group

		Levene Statistic	df1	df2	Sig.
Pretest	Based on Mean	.009	1	28	.923
	Based on Median	.000	1	28	1.000
	Based on Median and with adjusted df	.000	1	28.000	1.000
	Based on trimmed mean	.006	1	28	.936

Based on the result of the pre-test of experimental group which thought by using mind mapping phonetic symbol, and the control group which without thought by using mind mapping phonetic symbol the sig. of experiment group is $0.923 > 0,05$, which means the data is homogeneous The sig. of control group is $0.151 > 0,05$, it means the data is homogenous.

Tabel 7 Test of Homogeneity of Variance of Control Group

		Levene Statistic	df1	df2	Sig.
Pretest	Based on Mean	2.176	1	28	.151
	Based on Median	1.750	1	28	.197
	Based on Median and with adjusted df	1.750	1	26.923	.197
	Based on trimmed mean	2.270	1	28	.143

Based on the result of SPSS the pre-test of experimental group which thought by using mind mapping phonetic symbol, and the control group which without thought by using mind mapping phonetic symbol the sig. of experiment group is $0.923 > 0,05$, which means the data is homogeneous The sig. of control group is $0.151 > 0,05$, it means the data is homogenous.

3.4 T-Test

It used to know the influence of media for sample which can be used to population. So, it will give a result of the effect of media. The media can give an influence or not. The result of t-test by using SPSS:

Tabel.8 Paired Samples Test of T-Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
Pair					Lower	Upper			
1	experime nt - control	36. 00000	16.81 836	4.342 48	26.68 630	45.31 370	8.2 90	15	.000

Because $t_{count} 8,290 > t_{table} 1,7709$ or $sig. t = 0,00 < 0,05$, so H_0 rejected and H_a accepted. It means the mind mapping phonetic symbol (X) gave an influence significant to eliminate the confusion of pronunciation (Y).

4. Discussion

a. The Effect of Learning Phonetic Symbol to Eliminate the Confusion of Pronunciation

Based on result of control group and experiment group in table 4.1, that the mean of pre-test control group is lower than experiment group (32,667 ex.group < 34 cont.group), the median of control group and experiment group is similar 30. While the modus of experiment group is higher than control group (30 ex. group > 20 cont. group). For the standard deviation, the experiment group 13,52 was closer to central point, but the control group is 13.87 it is far from the central point. So, the conclusion is experiment group is higher than control group.

While the result of the mean of post-test experiment group is higher than control group (72,667 ex.group < 36,6 cont.group), the median of experiment group is higher than control group (70 ex.group > 40 cont.group). While the modus of experiment group is higher than control group (70 ex. group > 37 cont. group). For the standard deviation, the experiment group 8,83 was closer to the central point, but the control group is 12,3 it is far from the central point. So, the conclusion is the post-test experiment group is higher than the control group.

The result is in accordance with the result of research by M. Qiu & J. Hewitt by the title "Integrating Computer-based Multimedia Instructional design into Teaching English Phonetic Symbols", That determined an influence for English pronunciation is influenced by learning phonetic symbol for non-native English.

Based on result and theory above, it can conclude that learning phonetic symbols with mind mapping be able to eliminate of pronunciation. Because the phonetic symbol showed the different sound between words.

b. The Effectiveness of Mind Mapping Phonetic Symbol Media to Eliminate the Confusion of Pronunciation

Based on the result of table 4.12 that the result of t-test $t_{count} 8,290 > t_{table} 1,7709$ or $sig. t = 0,00 < 0,05$, so H_0 rejected and H_a accepted. It means the mind mapping phonetic symbol (X) gave an influence significant to eliminate the confusion of pronunciation (Y).

The result is in accordance with the result of research by Y. Lam & G. Lawrence by title "Teacher-student role redefinition during a computer-based second language project", It showed that mind mapping was a technique which was able to improve the understanding of student's pronunciation.

Based on the result and theory above, it can conclude that mind mapping phonetic symbol media be able to eliminate pronunciation. Because the mind mapping media be able to help the understanding of the brain by creative structure, color, and shape.

5. Conclusion

a. Provide Based on analysis and discussion, it was concluded that the first hypothesis that mind mapping phonetic symbol media be able to eliminate the confusion of pronunciation. Based on

descriptive data mean pre-test experiment group was higher 32,667, then control group 34, and modus 30>20. For post-test experiment group was higher 72.667, then control group was lower 36.6. The modus experiment is higher than control 70>37. Further, the result of normality gain of experiment was higher than control group 75%>28.57%, 3 students of experiment and a student of control group. It can conclude that learning phonetic symbols with mind mapping be able to eliminate of pronunciation. Because the phonetic symbol showed the different sound between words.

b. The result of t-test $t_{count} 8,290 > t_{table} 1,7709$ or $sig. t = 0,00 < 0,05$, so H_0 rejected and H_a accepted. It means the mind mapping phonetic symbol (X) gave an influence significant to eliminate the confusion of pronunciation (Y). It determined that the effectiveness of mind mapping phonetic symbol be able to eliminate the confusion of pronunciation among the ninth A in SMP Ibrahimy 3 Sukorejo.

References .

- Arulselvi, E. (2017). Mind Maps in Classroom Teaching and Learning. *Excellence in Education Journal*, 6(2), 50–65.
- Bordens, K., & Abbott, B. B. (2014). *Ebook: Research Design and Methods: A Process Approach*. McGraw Hill.
- Borg, W. R. (1983). *Meredith D. Gall Educational Research: An Introduction New Yor*. Longman.
- Boyson, G. (2009). The use of mind mapping in teaching and learning. *The Learning Institute, Assignment*, 3(8), 123–145.
- Chan, M. J. (2018). Embodied Pronunciation Learning: Research and Practice. *Catesol Journal*, 30(1), 47–68.
- Creswell, J. W. (2014). *Qualitative, quantitative and mixed methods approaches*. Sage.
- Demerzen, M. (2019). The place of pronunciation spelling in foreign language teacher education. *5th Eurasian Conference on Language and Social Sciences Letoonia Golf Resort Belek*, 277.
- Fried, & Hisrich. (1994). Scholar (6). In *Annals of Tourism Research*.
<http://www.sciencedirect.com/science/article/pii/S0160738315000444>
- Goodnough, K., & Long, R. (2002). Mind Mapping: A Graphic Organizer for the Pedagogical Toolbox. *Science Scope*, 25(8), 20–24.
- Gunawan, M. A. (2015). *Statistik Penelitian bidang pendidikan, psikologi dan sosial*. Yogyakarta: Parama Publishing.
- Haghighi, M., & Rahimy, R. (2017). The effect of L2 minimal pairs practice on Iranian intermediate EFL learners' pronunciation accuracy. *International Journal of Research in English Education*, 2(1), 42–48.
- Hatch, E., & Farhady, H. (1982). *Research design and statistics for applied linguistics*.
- Isnawati, N., Harjono, A., & Gunada, I. W. (2020). Hasil Belajar Fisika Dengan Model Discovery Learning. *Penelitian Dan Pembelajaran Fisika Indonesia*, 2(1), 11–15.
- Johnson, R. B., & Christensen, L. (2019). *Educational research: Quantitative, qualitative, and mixed approaches*. Sage publications.
- Pokrivčáková, S. (2015). 2.2 CALL and teaching pronunciation. *CALL and Foreign Language Education: E-Textbook for Foreign Language Teachers*, 110(CALL,d teaching pronunciation), 29–37. https://www.researchgate.net/profile/Silvia-Pokrivcakova/publication/285592902_CALL_and_teaching_pronunciation/links/587551d708aebf17d3b3f712/CALL-and-teaching-pronunciation.pdf

- Pudelko, B., Young, M., Vincent-Lamarre, P., & Charlin, B. (2012). Mapping as a learning strategy in health professions education: a critical analysis. *Medical Education*, 46(12), 1215–1225.
- Purwanto, E. (2008). Metodologi penelitian kuantitatif. *Yogyakarta: Pustaka Pelajar*.
- Qiu, M., & Hewitt, J. (2005). Integrating computer-based multimedia instructional design into teaching international English phonetic symbols. *EdMedia+ Innovate Learning*, 4365–4372.
- Schreiber, J. B., & Asner-Self, K. (2011). The interrelationship of questions, sampling, design, and analysis. *Southern Illinois University*.
- Sugiyono. (2008). Sugiyono, Metode Penelitian Kuantitatif Kualitatif dan R&D. *CV. Alfabeta, Bandung*, 25.
- Sugiyono, D. (2013). *Metode penelitian pendidikan pendekatan kuantitatif, kualitatif dan R&D*.