

THE EFFECT OF FLIPPED CLASSROOM ON THE STUDENTS' READING COMPREHENSION OF DESCRIPTIVE TEXT AT GRADE X OF MAS TELADAN UJUNG KUBU IN 2022/2023 ACADEMIC YEAR.**Muhammad Alfariz¹ Putri Lidiana Permata Sari²**^{1,2}Pendidikan Bahasa Inggris, Universitas Asahan*email:* alfarizanggawijaya@gmail.com**Abstract**

This research was intended to find out the empirical evidence of the students' achievement in reading comprehension on descriptive text by using flipped classroom at the X grade of MAS Teladan Ujung Kubu. This research was quantitative research. The population of this research was all the students of Grade X of MAS Teladan Ujung Kubu. Samples of this research were taken from 30 students of experimental group (class X IPA 1) and 30 students of control group (class X IPA 2). The instrument for collecting data was a test. After analyzing the data, the writer got; (1) The students' achievement in reading comprehension on descriptive text by using flipped classroom got the mean 81,33 and standard deviation was 5,04; (2) The students' achievement in reading comprehension on descriptive text by using conventional method got the mean 78 and standard deviation was 4,51. The value of t-observed was 2,729 and that of t-table was 2,009. So, the value of t-observed was higher than that of t-table, it means that there was significant effect of using flipped classroom on students' achievement in reading comprehension on descriptive text.

Keywords: Effect, Flipped Classroom, Descriptive Text**INTRODUCTION**

Reading is often part of a series of activities, including locating texts and presenting material orally and in writing. It means, it is a process that is done by reader to analyze and recognize words from a text. In other word, that is all activities includes a process of understanding written form to gain information. It is also a way to communicate between reader and author. The text can be a bridge of readers to know the information that the research wants to tell them. For that, readers should have expertise to understand it. Especially, the learners should possess reading ability because it was useful when they read. From the definition, it can be concluded that reading is a process done by the reader to build the meaning of a message delivered through writing.

Besides that, reading is primarily as a perceptual and cognitive process, and research on reading focused on the individual and what happens inside his or her head while reading. It means that reading is conceptual that processing the content of the text by our brain. In addition, understanding the contents of the reading required the thought process to digest what the authors write in his writing. The cognitive process means something that doing on head. It is a related to the

process of thinking in order to know or understand something. The person's cognitive abilities can be show from his ability to use language. If we reads the book, it can help him to improve his knowledge about language. There is related between readings and cognitive. In short, the role of reading is very important in developing cognitive.

Moreover, reading is said to be an example of how discrete language abilities can affect a student's academic progress, since formal reading instruction is usually not sufficient to create a reader. Independent reading, or practice, must also be present in order for a student to become a good reader. It means reading requires awareness to build habit of reading. Even though reading is important ability to increasing the language ability but it still need instruction to push students to read. It would be better if teacher can persuade or make them interested with the material. Perhaps they will decide to read more because if they want to be a good reader should the existence of a strong desire and determination. In short, the teachers need to be able to read the conditions and interests of your students before you give instruction in reading.

According to curriculum of senior high school, there are many kinds of text such as descriptive, narrative, recount, procedure, exposition, discussion, etc. Based on the syllabus and relevant book in the second semester of the tenth grade of senior high school at MAS Teladan Ujung Kubu, there is descriptive text. Thus, the research chooses descriptive text for this research.

Based on interviewing an English teacher and some students at the tenth grade of MAS Teladan Ujung Kubu, the research found that the students had difficulties in learning English. For example, the students can expect how to pronounce the words but they do not really understand what the meaning of the sentence because they are lack of vocabulary. They only translate the difficult words one by one using the dictionary. It is not effective because it was spent a lot of time. They also have difficulty in interpreting a text especially descriptive text. Then, it makes them lazy to read a long text. By interviewing an English teacher, the research found that teacher did not used various model class. The problem arises when the teacher only uses one model class. It is traditional classroom which requires students to translate word by word using a dictionary in the classroom. Even though teacher has mastered in material but they were still confused and bored.

In this research, the research was used Flipped classroom in teaching reading because it can be effectively to help their reading comprehension. According to Bergman and Sams state that Flipped Classroom is a discussion about the video from the night before, which is traditionally done in class is now done at home. It is a way that teacher use to teach students at home with a video. In the class the students just asking about what they do not understand on video's material. Next, teacher explained it clearly. Later they were done the exercise by them self. In short, the students learn first at home by a video before asking to teacher and do the exercise

In short, the research was concern to identify the effect of flipped classroom on the students' reading comprehension of descriptive text at grade X of MAS Teladan Ujung Kubu in 2022/2023 academic year.

METHOD

According to (Grant et al., 2017), Quantitative research is explaining phenomena by collecting numerical data that are analyzed using mathematically based methods (in particular statistics). In addition, (Muijs, 2016) stated quantitative research is essentially about collecting numerical data to explain a particular phenomenon.

Research was conducted with experimental research. It deals with two methods which are experimental methods. The experimental method was carried out to get the average data.

In conducting experimental research, the sample was divided into two groups, the experimental group and the control group. The experimental group was taught using a Flipped Classroom and the Control group was taught conventionally. Both groups was given a pre-test and post-test. The design is as follows:

Table of the procedure of experimental in control and experimental group.

Group	Types	Experimental	Types
Experimental Group	Pre-test	X	Post-tes
Control Group	Pre-tes	Y	Post-tes

Source: (Arikunto, 2010)

Where:

X: Using Flipped Classroom

Y: Using Conventional way

(Sugiono, 2012) claims the generalizing area that the content of a subject is quantitative and the characteristics that was selected by research want to be studied and then drawn conclusions. This means that the population is not only people, but also objects and other natural objects. Population is not just a result that can be studied objects and subjects. But all traits/attitudes have a subject or object.

The population for this research was filled from all class X students of Exemplary MAS Ujung Kubu for the 2022/2023 academic year. And consists of two classes.

Table of The population af grade X in Academic Year 2022/2023

No	Class	Number of students
1	X-IPA 1	38 students
2	X-IPA 2	38 students
3	X-IPS 1	38 students
4	X-IPS 2	38 students
5	X-IPS 3	38 students

6	X-AGAMA	39 students
	Total	229 students

The sample is representative of the population. (Sugiono, 2012) states that the sample is part of the number and characteristics of the population. In talking about the sample of this research, this research will use Simple Random Sampling as a sampling technique. (Ramadhani Khija, Iudovick Uttoh, 2015) says Simple random sampling, means that as many as n samples are taken from population N and each member of the population has the same chance of being selected.

The research has been taken class X-IPA 1 and class X-IPA 2 where students from class X-IPA 1 was the experimental group and students from class X-IPA 2 was the control group.

Table of The sample of Student

X-IPA 1	30 students	Experimental Group
X-IPA 2	30 students	Control Group

(Rieder & Lauritsen, 2011) The operational definition of variable is used to describe the variables that research investigated. The operational of variable is as follows:

Flipped classroom is a class model to help the students comprehend the text by using video before students read the text to get student's comprehension on reading material.

Student's reading comprehension on descriptive text is an ability of comprehending the text about a story that aimed to entertain the readers to be involved in questions related to main idea, inference (implied detail), grammatical features, detail, excluding fact/not written, supporting idea, and vocabulary in content.

Table of Research Variable

Variable	Control group	Experiment group
Independent variable (X)		The Effect Of Flipped Classroom on the Students' Reading Comprehension Of Descriptive Text
Dependent variable (Y)	The Effect Of Flipped Classroom on the Students' Reading Comprehension Of Descriptive Text	

In teaching presentations, the sample was divided into two groups. The first group was used as a control group which was taught without using Flipped Classroom. The second group was used as an experimental group that was taught in the Flipped Classroom

Pre-test was conducted to find out the students mastery in writing skill before having experinsent. The pre-test was given to the group and their task was scored. The result of the pre-test was considered as preliminary data.

In treatment, the students was divided into 2 groups, each group was given material about simple past tense using different way. In the experimental group will applied Flipped Classroom in teaching Leaning.

After the teaching presentation, students from the experimental group and the control group was given a post-test. This post-test was used to determine the effect of the questions.

A test is a way or means of carrying out an investigation that uses problems, questions, or other assignments where the questions was questions that was scrutinized and standardized, (Ben Walgito, 1987)

The test was in the form of multiple choice questions. There are 20 questions, each question gets a score of 5.

Table 3.6 the Rubric Assement of Questiins

No	Component	Variable
1.	Main Idea/topic (Identifying main idea/topic o a paragraph)	Reading Comprehension
2.	Understanding Vocabulary (Identifying various of sentence structure in descriptive text)	
3.	Identifying Reference (Identifying the noun to which pronoun or other expression express the passage)	
4.	Making Inference (This question to draw conclusion based on information the text)	
5.	Detail Information (Identifying supporting detail o the text)	

The istrument is said to be valid if the instrument is used to measure what intendts to measure (sukardi, 2010). It could be said that the test was conducted by using writing recount text measared the writing knowledge. Focus on the level of students' knowledge, especially on writing recount text.

The fomula to measure validity test (Arikunto, 2010)

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{(n\sum x^2 - (\sum x)^2)(n\sum y^2 - (\sum y)^2)}}$$

Where

R= The comrelation between two variabies

N- Total of the Data

X=the mark in the pre-test

Y=The mark in the post-tes

XY=Sum of multiplication X and Y

X= Square of X

y2= Square of Y

A research instrument was said a high reliability value, if the test were made to have a consistent outcome measure to be measured or result be produced consistently (sukardi, 2010).

The most formula to measure realibility test (the formula of spermn-brown in (Arikunto, 2010)

$$r_{11} = \frac{2 \cdot r}{1+r}$$

Where:

r_{11} = the reliability

r = Coeficient between the two test.

The obtain the reliability of the test, firstly the mean (M) and the standart deviation (SD) should be counted.

The value of the reliability as the following:

0,00-0,20 the reliability is very low

0,21-0,40 the reliability is low

0,41-0,60 the reliability is fair

0,61-0,80 the reiability is high

0,81-0,100 the reliability is very high

A test is valid if it measure what was purposed to measure. Firstly, measure the test with the validity and reliability test according the formulas above, and then measure with t-test is the most commonly used method to evaluate the differences in means between two groups. For example, the t-test could be used even if the sample size were very small, as long as the variables are normally distributed whitin each group and the variation of scores in the two groups are not reliability different.

The groups are expected through chance alone under true until hypothesis The data analyzed by applying t-test finally, the significant of the sum, the t-test and t-table was compared with the degree of freedom (df) of the test, the t-test as follow (Arikunto, 2010)

$$t = \frac{M_x - M_y}{\sqrt{\left(\frac{\sum Dx^2 + \sum Dy^2}{N_x + N_y - 2}\right) \left(\frac{1}{N_x} + \frac{1}{N_y}\right)}}$$

Note:

M_x = Means score of experimental group

M_y = Means score of the control group

Dx^2 = the deviation score of experimental group

Dy^2 = the deviation score of control group

N_x = the total sample of experimental grroup

N_y = the total sample of control group

RESULT AND DISCUSSION

This study was conducted on April until May 2023. The data were collected by giving test. In this study, the sample is divided into 30 students. The data of this study purpose to find the effect of Flipped classroom on the students' reading comprehension of descriptive text. In this study, the sample is divided into two

groups namely experimental group and control group. Experimental group and control group is given the similar test.

The data of this study purpose to find out the significant effect of Flipped classroom on students' achievement in reading comprehension of descriptive text. This study was conducted at the tenth grade of MAS Teladan Ujung Kubu. Students at tenth grade of MAS Teladan Ujung Kubu as an experimental group and control group. The sample of each group was consisted of 30 students in the tenth grade of MAS Teladan Ujung Kubu.

This tables below showed the students' scores in pre-test and post-test in experimental group and control group at the tenth grade of MAS Teladan Ujung Kubu.

Table of the Sore of Pre-test and Post-test of Experimental Group

NO	Students' Names	Score of Pre-test (X)	Score of Post-test (Y)	X ²	Y ²	XY
1.	AD	65	75	4225	5625	5625
2.	AN	70	90	4900	8100	6300
3.	DR	75	85	5625	7225	6375
4.	ES	70	80	4900	6400	5600
5.	FR	65	75	4225	5625	4875
6.	GN	75	85	5625	7225	6375
7.	HT	70	80	4900	6400	5600
8.	IS	75	80	5625	6400	8000
9.	IM	75	80	5625	6400	6000
10.	INS	70	85	4900	7225	5950
11.	JM	65	75	4225	5625	4875
12.	LS	60	80	3600	6400	4800
13.	MT	80	95	6400	9025	7600
14.	MF	65	75	4225	5625	4875
15.	MM	60	75	3600	5625	4500
16.	MA	70	85	4900	7225	5950
17.	NM	70	80	4900	6400	5600
18.	NS	80	90	6400	8100	7200
19.	NH	70	75	4900	5625	5250
20.	NI	75	80	5625	6400	6000
21.	PC	75	85	5625	7225	6375
22.	SH	75	80	5625	6400	6000
23.	SN	75	85	5625	7225	6375
24.	SF	75	85	5625	7225	6375
25.	ST	70	85	4900	7225	5950
26.	RA	75	85	5625	7225	6375
27.	TS	65	75	4225	5625	4875
28.	TL	75	85	5625	7225	6375
29.	UH	65	80	4225	6400	5200

30.	VA	70	80	4900	6400	5600
	Total	Σx = 2125	Σy = 2440	Σx² = 151325	Σy² = 200850	ΣXY = 176850

Based on the table above, it showed that:

$$M = \frac{\sum X}{N}$$

M: Mean of pre-test of experimental group

N: 30

ΣX: 2125

ΣY: 2440

Then, the measure is:

$$M = \frac{2125}{30} = 70,83$$

$$M = \frac{\sum Y}{N}$$

$$M = \frac{2440}{30} = 81,33$$

From the data above, it shows that the students' scores in pre-test is lower than post-test. The mean of students' scores in pre-test was 70,83. After giving treatment by using Flipped Classroom, it increase 11,5% and the score mean is being 81,33 in post-test.

Table 4.2.2. The Sore of Pre-test and Post-test of Control Group

NO	Students' Names	Score of Pre-test (X)	Score of Post-test (Y)	X ²	Y ²	XY
1.	AF	55	70	3025	4900	3850
2.	AS	75	90	5625	8100	6750
3.	AS	70	80	4900	6400	5600
4.	DR	60	75	3600	5625	4500
5.	DA	65	80	4225	6400	5200
6.	EY	70	80	4900	6400	5600
7.	FF	65	75	4225	5625	4875
8.	IAS	65	75	4225	5625	4875
9.	IH	75	85	5625	7225	6375
10.	JF	70	80	4900	6400	5600
11.	MI	50	75	2500	5625	3750
12.	MF	75	80	5625	6400	6000
13.	MA	65	70	4225	4900	4550
14.	MY	75	85	5625	7225	6375
15.	MN	65	75	4225	5625	4875
16.	MT	50	70	2500	4900	3500
17.	MK	70	75	4900	5625	5250
18.	MS	70	75	4900	5625	5250

19.	NA	75	80	5625	6400	6000
20.	MI	60	75	3600	5625	4500
21.	NZ	75	80	5625	6400	6000
22.	NO	70	85	4900	7225	5950
23.	NM	70	80	4900	6400	5600
24.	RR	75	85	5625	7225	6375
25.	RP	70	80	4900	6400	5600
26.	SA	65	75	4225	5625	4875
27.	SP	65	80	4225	6400	5200
28.	WF	70	75	4900	5625	5250
29.	YP	55	75	3025	5625	4125
30.	RH	65	75	4225	5625	4875
Total		Σx = 2005	Σy = 2340	Σx²= 135525	Σy²= 183200	ΣXY= 157125

Based on the table above, it showed that:

$$M = \frac{\sum X}{N}$$

Where:

M : Mean of pre-test of control group

N : 30

ΣX : 2005

ΣY : 2340

Then, the measure is:

$$M = \frac{2005}{30} = 66,83$$

$$M = \frac{\sum Y}{N}$$

$$M = \frac{2340}{30} = 78$$

From the data above, it shows that students' scores in pre-test is lower than post-test. The mean of students' scores in pre-test is 66,83. After giving treatment by using conventional way, it just increased 11,17% and scores in post-test is 78.

Hypothesis testing is done determine whether the hypothesis can be accepted or rejected. To determine the hypothesis, the independent sample t-test was used. With the basis of decision making in the independent sample t-test, as follow: compare t count (t_h) with t table (t_t)

1. If $t_h \geq t_t$ with a significance level of 0.05, then H_0 is rejected and H_a is accepted.
2. If $t_h \leq t_t$ with a significance level of 0.05, then H_0 is accepted and H_a is rejected.

After analysing the data into t-test, it was found that the value of t count (t_h)= 2.729. If this was adjusted to the critical score of the product moment of degree of freedom (df) $n_1 + n_2 - 2$ or $30 + 30 - 2 = 58$, the value of t table with the significant 0.05 (t_t)= 2.002. Therefore, the calculated t count (t_h) value the greater than t table (t_t) value= ($2.729 \geq 2.002$). Than H_0 is rejected and H_a is accepted.

Therefore, the research was successfully, Ha accepted and revealed that there is significant effect of using Flipped classroom on students' reading comprehension of descriptive text of MAS Teladan Ujung Kubu in 2022/2023 Academic Year. Because students learning outcomes used Flipped classroom got a higher score than without the Flipped Classroom.

CONCLUSION

This study used quantitative research methods, including the total sample approach for sampling such as pre-test and post-test for data collecting which students had been given the test multiple choices. In their achievement on their task papers, show that the students feel enjoyable when they are reading the text in this case especially reading comprehension of descriptive text and this technique can provide encouragement in the teaching and learning process. Based on the result of the previous chapter's data analysis, it shows that Ha is approved, and Ho is refused which suggest that the Flipped classroom significantly effects on students achievement in reading comprehension of descriptive text at the tenth grade of MAS Teladan Ujung Kubu. The study's findings support the Flipped classroom effectiveness improve the student's achievement in reading comprehension of descriptive text. This study concludes that the Flipped classroom can make teaching and learning process exciting more that it bases on the data analysis. The learning process will be enjoyable for the students and students do not feel bored. Students become interactive and enthusiastic more as a result of this technique.

After doing this study, the data can be calculated that the score of experimental group is higher than control group, so the students have an ability to reading comprehension of descriptive text with using Flipped Classroom. It is means that Flipped classroom is effective to students' achievement in reading comprehension of descriptive text. There are several affected the successful of students as following below:

1. The Students' motivation to study is high
2. The students are interesting come to school
3. The students are interactive in the class
- 4, The students always study again at home by using Flipped Classroom vidio
5. The students more focused in the class
6. The students give attention and listen the advice from the teacher

REFERENCES

- Abaeian, H., & Samadi, L. (2016). *The Effect of Flipped Classroom on Iranian EFL Learners ' L2 Reading Comprehension : Focusing on Different Proficiency Levels*. 3(6), 295–304.
- Almania, E. (2022). *The Effectiveness of Using Flipped Classroom in Teaching Writing Descriptive Text*. 6(2), 1759–1766.
- Anderson. (2003). *Anderson_2003* (2) (p. 26).
- Anderson, E., Guthrie, J. T., Van Meter, P., Hancock, G. R., Alao, S., & McCann, A. (1998). Does concept-oriented reading instruction increase strategy use and conceptual learning from text? *Journal of Educational Psychology*, 90(2), 261–278. <https://doi.org/10.1037/0022-0663.90.2.261>
- Arikunto. (2010a). *Metode Penelitian Pendekatan Kuantitatif Kualitatif*. 37–52.

Vol. 2 No. 1, January 2024, p. 20 – 31

Available online <http://jurnal.una.ac.id/index.php/jeeli/index>

- Arikunto, S. (2010b). *Prosedur Penelitian Suatu Pendekatan Praktik-Revisi Ke X*.
- Bamford, J., & Day, R. R. (1998). Teaching Reading. *Annual Review of Applied Linguistics*, 18, 124–141. <https://doi.org/10.1017/s0267190500003512>
- Barbar, D., Alsumait, L., Domeniconi, C., & Va, F. (2004). *On-Line LDA : Adaptive Topic Models for Mining Text Streams with Applications to Topic Detection and Tracking*. 124.
- Ben Walgito. (1987). *collecting data*. 87(3).
- Bergmann. (2013). The Flipped Classroom: An Opportunity To Engage Millennial Students Through Active Learning Strategies. *Journal of Family & Consumer Sciences*, 105(2), 44–49. <https://doi.org/10.14307/jfcs105.2.12>
- brown, Harste, J. ., Burke, C. ., & Woodward, V. A. (1982). Children’s language and world: Initial encounters with print. In *Bridging the gap: Reader meets author* (Issue 8).
- Cunningham, A. (2001). *What Reading Does for the Mind*.
- Drake, E., & Yelamarthi, K. (2015). A Flipped First-Year Digital Circuits Cour for Engineering and Technology Students. *IEEE Transactions on Educatic* 58(3), 179–186. <https://doi.org/10.1109/TE.2014.2356174>
- Drake, W. M., Howdhury, T. A., Khan, H., Druce, M. R., Rajakariar, R., Thuraisingham, R., Dobbie, H., Parvanta, L., Chinegwundoh, F., Almushatat, A., Warrens, A., & Alstead, E. M. (2019). Flipped learning: Turning medical education upside down. *Future Healthcare Journal*, 6(3), 192–195. <https://doi.org/10.7861/fhj.2018-0017>
- Febriani. (2011). *the Effectiveness of Cooperative Integrated Reading*.
- Fuentes. (2010). Flipped Classroom In Reading Class (An Experimental Study). *Tilton Brunner*, 14(1), 14–29. <http://doi.org/10.24042/ee-jtbi.v14i1.9211>
- Grant, T., Linguistics, F., Clark, U., Language, E., Reershemius, G., & Contact, L. (2017). *Methods for Linguists*.
- Jain, P. and. (1955). English language. In *Year’s Work in English Studies* (Vol. 36, Issue 1). <https://doi.org/10.1093/ywes/XXXVI.1.44>
- Kane. (2000). Descriptive text. *PREMISE JOURNAL:ISSN Online: 2442-482x, ISSN Printed: 2089-3345*, 352(1). <https://doi.org/10.24127/pj.v4i1.286>
- Karimi, M., & Hamzavi, R. (2017). The Effect of Flipped Model of Instruction on EFL Learners’ Reading Comprehension: Learners’ Attitudes in Focus. *Advances in Language and Literary Studies*, 8(1), 95. <https://doi.org/10.7575/aiac.all.v.8n.1p.95>
- Linda Gerot and Peter Wignell. (1995). The Correlation Between Students’ Imperative Sentence Mastery And Their Ability In Writing Procedure Text At MTs Sriwijaya East Lampung. *Social Science Studies*, 1(1), 013–022. <https://doi.org/10.47153/sss11.1042021>
- Lubis, W. I., Hasibuan, A., & Rizwan, M. (2021). *THE EFFECT OF USING SEQUENCE PICTURE ON STUDENTS’ WRITING DESCRIPTIVE TEXT AT THE XI STUDENTS OF SMA SWASTA KAMPUS PADANGSIDIMPUAN* Writing is definitely a skill that the language teacher must teach to their students . Although it is a complicated skill , . 4(2), 13–26.
- Milman, Natalie, B. (2012). The Flipped Classroom Strategy. *Distance Learning*, 9(3), 85. <http://lib->

Vol. 2 No. 1, January 2024, p. 20 – 31

Available online <http://jurnal.una.ac.id/index.php/jeeli/index>

ezproxy.tamu.edu:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eft&AN=99397256&site=ehost-live

Muijs, D. (2016). Advanced Quantitative Data Analysis. *Research Methods in Educational Leadership & Management*, 363–366. <https://doi.org/10.4135/9781473957695.n24>

Mukarto, Delatu, T. A., Wowor, D. J., & Kamagi, S. (2007). *E-Clue Journal of English, Culture, Language, Literature, and Education published by English Education Department Faculty of Languages and Arts, Universitas Negeri Manado, Vol. 8 No. 2, pp. 88-96. 8(2), 88–96.*

Oktaviani, R. (2019). *Text At the Second Semester of the Eighth.*

Pardiyono. (2007). *IMPROVING STUDENTS ' ACHIEVEMENT ON WRITING DESCRIPTIVE TEXT THROUGH THINK PAIR.* 34(July), 30–43.

Pikulski, J. J., & Chard, D. J. (n.d.). *Current Research READING / LANGUAGE ARTS FLUENCY: THE BRIDGE FROM DECODING TO READING COMPREHENSION.*

Ramadhani Khija, Ludovick Uttoh, M. K. T. (2015). Teknik Pengambilan Sampel. *Ekp*, 13(3), 1576–1580.

Rieder, H. L., & Lauritsen, J. M. (2011). *STATE OF THE ART Operational Research , Edited by Donald A. Enarson Quality assurance of data : ensuring that numbers reflect operational definitions and contain real measurements.* 15(3), 296–304.

Sams, B. and. (2014). Flipping the Classroom: A Case Study of a Mathematics Methods Class. *Eric*, 485–492. <https://eric.ed.gov/?id=ED572650>

Sugiono. (2012). metode penelitian. In (Vol. 4, Issue 1).

sukardi. (2010). *lesson study.* 1–129.