

The Art Of Investigation Technique To Enhance Students' Achievement In Writing

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ABSTRACT

This study entitled “The Art of Investigation Technique to Enhance Students’ Achievement in Writing”. This study intend to seek an answer to the questions “ Is there a significant difference in the enhancement of writing skills between the students who are taught using the Group Investigation technique and those who are taught through the conventional method?” This is an experimental study using classroom action research. The subject of this research were Grade VIII Students of SMP Negeri 1 Parongpong, Bandung. There were 75 students. To collect the data the pre-test was administered at the start of the program and the post-test at the end of the three months program. Based on the data analysis it was found that there was a significance difference among the experimental and the control groups. Another finding the students were interested in writing through Group Investigation Technique. Therefore it is concluded that teaching writing through Group Investigation Technique could improve students' writing skills. This study suggest that teachers of English should be trained to use this technique.

INTRODUCTION

In the teaching-learning process of English, students are taught the four skills, namely; listening, speaking, reading, and writing. Listening and speaking are conducted through oral expression while reading and writing use written expression. The four language skills are important to be mastered. But, among them, writing seems to be difficult for most students, Crystal (2004). Katemba (2019, p.88) stated that “Indonesian students are

having problems in English due to its structure and pronunciation differs from Bahasa Indonesia”. It was also found out that many teachers still practice the old way of teaching that is giving descriptive text and immediately students are given the task of descriptive writing as stated by Hami (2011). In teaching writing, it is an art where the teacher involve and creating strategies or methods of teaching it that provoke the interest of the students to write. Many English teachers say that most of the

students could not write English well. They assume that writing was a difficult task because they cannot transfer their ideas, feelings in written using English. In other words, teaching writing in the class is quite a hard task for the teachers. The researchers have found that students are facing difficulties in writing a text-based on genres. If the teacher asked them to write a text, they were still confused about what they wanted to write.

At present, the implementation of the learning revolution in the teaching-learning process shows that the instructional process is no longer centered on the teacher but should be student-centered. On the other hand, the teacher does not need to teach their students by lecturing. It will make them bored. The teacher has to be creative in inventing the best way for teaching so it will be fun and enjoyable.

Solving the problems in teaching writing to the students, the researcher proposes a suitable strategy that can be applied in the teaching-learning process. That is the Group Investigation technique, Sugandy (2002) stated that by using Group Investigation, the students will expect to learn the materials easier. Group investigation harness students' interests and gives them even more control over their learning than other cooperative learning methods do. Yael (1990). In group investigation, students' take an active part in planning and persuading their fellow members what they will study and how they form a cooperative group based on their common

interest in a topic. As Katemba (2020) stated that "Persuasion is found wherever you find people communicating", communication is an art where people need to interact with one another expressing their ideas and concerns, and therefore all the members in the group help plan how to research their topic. After which, they divide the work among themselves, and each group member carries out his or her part of the investigation. finally, the group synthesizes and summarizes its work and presents these findings to the class (Joyce and Weil, 1972).

Group Investigation is one type of cooperative learning model where students work on learning topics by helping each other. While cooperative learning is learning together, help each other to learn and make sure that every student was directed to learn in group and work on their goals and tasks that have been predetermined, (Sugandy, 2002).

Group Investigation is a medium organization to encourage and guide student involvement in learning. Students actively share in influencing the nature of the incident in their classrooms. By communicating freely and work together in planning and implementing their chosen topics of inquiry, they can achieve a deeper knowledge despite of learning individually. The final results of the groups reflect the contribution of each member in a group. The teacher evaluated every process that took place from start to the end of their task. (Zingaro, 2008).

In Indonesia, there have been several studies done on this, First, a study on “Improving Students’ writing Narrative Text Through Investigation Group” by Jannatun Nisfah (2011), She did this study because based on the teacher experience in teaching English it was assumed that most of the students were able to express their thoughts well especially in written language. They made some errors in spelling grammar and the choice of appropriate words, which had to be used in expressing their ideas, and develop their English through writing. The Second researcher is Siti Ulinnikmah (2008). She conducted a study about "The Use of Cooperative Learning of Teams Games Tournaments, and the third researcher is on "The Ability to write Recount Text of the 10th Grade Students of SMA Muhammadiyah, Using Group Investigation Approach. Education Faculty of Muria Kudus University, (2009). The fourth is “Improving Mathematics Communication Using Investigation Group Method” Boike (2014). Another study was conducted using group investigation by Hutabart (2020), The effect of group investigation technique on students achievement in writing analytical exposition text in grade XI found that this technique is very effective where the experimental group outperformed the control group in their posttest result, and a study conducted by Sari & Susiani (2021) found the same result too.

Stages of Implementing Group Investigation

In planning and carrying out group investigation, students’ progress through six consecutive stages Slavin (1995) and Maesaroh (2005).

1. Stage of Grouping.

A stage is to identify the topics that will be investigated as well as form a heterogeneous group with members of each group of 4 to 5 people. (i). Students observe the source, choose a topic, and define the categories of issues. (ii). Students join the study groups based on their chosen topic or interest to be investigated. (iii). Teacher limit the number of members of each group of 4 to 5 people based on skills and heterogeneity: (a) Teachers provide opportunities for students to choose a topic that interest to investigated. (b) Teachers divide members of group 4 to 5 people (Hartzell, 2010).

2 Stage of Planning.

The students pay their attention to the subtopic: i). What they wanted to learned. This is a realm of what is becoming the focus of learning, contains things that become their discussion. ii). How they learn. The process of how teachers and students assemble a learning process. iii). Who and what to do. The investigation or students is monitored by the teacher. iv). For what purpose they investigate the topic. Speaking of goals, needs teacher presents a motivation to the students. (Kagan,2009).

3. Stage of Investigation

Students apply the plan that they have developed the appropriate stage in which students formulate a variety of ways and angles to take to conduct the investigation. This learning activity involving a variety of activities and wide-ranging skills and should lead students to the types of different learning resources both inside or outside of school. Teachers are strictly follow the progress of each group and offer assistance when needed. At this stage, students undertake the following activities: i). Students gather information, analyze the data and make conclusions related to the issues under investigation. ii). Each member of the group to provide input on each activity group. iii). Student exchange, discuss, clarify, and unify ideas and opinions. (Kemmis, 1988).

4. Stage of Organizing.

Students analyze and evaluate the information obtained in the third stage and plan how the information is summarized and presented in an attractive manner as the material to be presented to the whole class. At this stage of the student activities as follows: i). Members of the group determines the important messages in their own projects. ii). Members Group plan what they report and how to present it. iii). Representative from each group to form a committee in the class discussion presentation investigation (Latief, 2009).

5. Stage of Presenting.

Some or all of the groups present the results of their investigations in a way that is attractive to all classes, with the mutual goal of the other students involved with each other in their work. Learning activities in the classroom at this stage are follows: (i). Presentation of the group on the whole class in a variety of forms of presentation (ii). Groups that are not as actively involved as a presenter listener. (iii). Listeners evaluate, clarify and submit questions or comments to the topics presented (Hopkins, 2009).

6. Stage of Evaluating.

In the case of groups dealing with different aspects of the same topic, students and teachers evaluate each group work contributions to the whole class. Evaluation can be either individual or group assessment. At this stage, the teacher or student activities in learning as follows:

- i). Students combine the inputs on the topic,
- ii). Teachers and students are collaborated.
- iii). Evaluated the learning that has been implemented.
- iv). Assessment of learning outcomes should evaluate by the students' understanding. For example: (a). Students summarize and record each of the topics, (b) Students combine each of the topics investigated in the group and the other groups.
- (c) The teacher evaluates to give the test description at the end of the cycle (Hyland, 2002)

The general goal of cooperative learning in the form of an increase in academic aspects, social skills, ability to work together, and respect for each difference in students. According Rochyadi (2000) cooperative learning model will increase more positive relationships between students and a more pleasant atmosphere for sharing and helping. Each learning strategy certainly has its advantages and disadvantages, the following will explain some of the advantages and disadvantages of Group Investigation

The advantages of learning a model group investigation:

1. This method can train students to think critically.
2. To train students to cultivate the ability to think independently
3. The active involvement of students can be seen from the first stage to the final stage of learning.
4. The application of this learning method makes students feel happy and enjoy their learning.

The disadvantage of this learning models of group investigation, where students work in groups from the planning stage to the investigation to find the results so this method is very complex. The teacher must accompany and keep track on the students in full to obtain the desired results. So the teacher is expected to be knowledgeable and master all the ongoing

activity and that the teacher should qualify on the subject matter discussed in the group.

Through the implementation of this cooperative model of Group Investigation students finally are able and accustomed to build their knowledge, work in teams to be able to solve a problem they have to solve and control, and get used to be able to communicate in interpreting the good things in a presenting their result or group’s investigation to the class. The researcher is optimistic that the group investigation model of cooperative models can improve communication skills as well as the activities and achievements of junior high school students.

Therefore the research questions of this study was to seek an answer to “Is there any significant difference in the enhancement of writing skills between the students who are taught using the Group Investigation technique and those who are taught through the conventional method?”

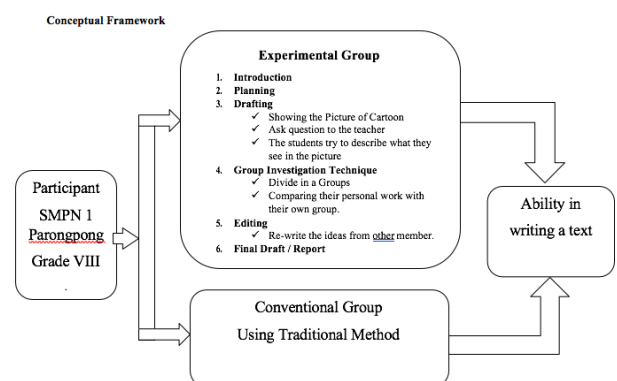


Fig.1 Conceptual Framework

METHOD

In conducting the research, the research method is very important. By using appropriate research methods, the experiment carried by the researcher would be clear. Besides, it also helps the researcher to solve the problem easier. In this section, the researcher would like to present the way how to carry out the research. The following table 1 describes the research design used in this study.

Table 1 Research Design

Groups	Pre-Test	Treatment	Posttest
Experimental	X1	O	X2
Control	X1		X3

- X1 : Students’ Writing Score in Pre-test
- X2 : Students’ Writing Score in Post-test
- O : Group Investigation Technique

Table 1 shows that the Experimental groups received a pre-test (as symbolized by X). The treatment (was symbolized by O) was done in eight weeks using the Group Investigation model and X2 representing the post test that was taken by the students at the end of the program.

This study was conducted at SMP Negeri 1 Parongpong, West Java to grade VIII (eight). And the researcher used two classes as samples for the study. The participant for the control group was grade VIII-H, with a total number of 38 students, while for the experimental group was grade VIII-G with a total number of 37 students.

The instruments of this study were pilot tested and the result of the pilot tested instrument was used as the pre-test and the posttest. The pilot tested was done at SMP Negeri 1 Parongpong grade IX to validate the test, with a total number of 36 students, 5 questions were administered. The questions consist of 3 parts they were describing pictures, written experience, and writing Narrative text.

The data obtained were analyzed statistically using ANATEST V and SPSS 16. After the instrument was piloted tested, and analysed. The valid and reliable questions were used for the pre-test, each number of the question are describe below. Table 2. showed the results of the pilot tested instrument.

Table 2. Recapitulation of the pilot test

Item number	Discriminatory	Difficulty Level	Validity	Reliability
1	Excellent	Easy	Easy	High
2	Excellent	Easy	Easy	High
3	Excellent	Moderate	Moderate	High
4	Excellent	Moderate	Moderate	High
5	Excellent	Moderate	Moderate	High

From the result of the pilot test above, it was found that all the questions are answered by the students. But in the pre-test the researcher deleted two questions it is because too easy for them. So the researcher used only three questions in the pre- test and posttest.

Treatment for the two groups.

- Preparing the lesson plan

In this study, the researcher prepared the lesson plan and materials for every meeting. The materials for descriptive and narrative writing were taken from students text book in their school and its supplementary.

The researcher made two types of lesson plan. The researcher designed first lesson plan for the experimental group for 8 meetings. From the first until the last meeting, the researcher implemented the Group Investigation technique to this group. The second lesson plan were designed for the control group for 8 meetings. The researcher used Conventional Method in teaching writing. There were 2 meetings for conducting the pre-test and post-test.

- Organizing Teaching Procedures

In this study, the researcher organized the teaching by Preparation of the lesson plan and different material for every meetings. The materials were taken from text book “English in Focus” for grade VIII and also from picture on the slide that was shown in the class.

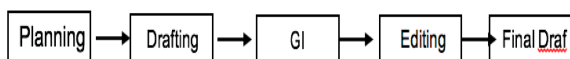


Figure 2.

Planning

1. Introducing the Group Investigation Technique to the students who are taught for Experimental class.
2. The teacher giving the students some information about what they are going to do.

3. The teacher Showing them a picture on slide, the picture taken from the English in Focus 2nd Grade.

Drafting

1. The teacher let the student to ask about the picture that has been shown on the slide if some of them did not understand yet.
2. Student trying to describe directly about the picture what happened shown on the picture.
3. Students do their first draft on the topic.

Group Investigation Technique

Step 1. Grouping

- a. The teacher motivated the student to prepared them to be ready to learn the their lesson.
- b. The teacher asked the student on the aim of the lesson
- c. Teacher asked the student to make a group, each group should have 5-6 member.

Step 2. Planning

- a. The teacher give a topic to be discussed in group.
- b. The teacher explained how each group would do the lesson.

Step 3. Investigating

- a. The teacher organized the student to do the investigating through topic that the teacher gave.
- b. The teacher asked the students to express their ideas.

Step 4. Analyzing and Syntheses

- Expressing their ideas and give report according their group discussion

Step 5. Presentation / Final draft

- a. The teacher collect the students' works.
- b. If there is enough time, each group should report in front of the class on the result of their discussion in the group.
- c. Teacher give a chance to other group to give comments or suggestion on the groups' presentation which was presented to the whole class.

Step 6. Evaluation

- Teacher gives an assessment on the product of the students' work.

Closing (10 minute)

1. The teacher gives an extra explanation regarding the lesson. And also give them Home Work.
2. Teacher and student conclude the learning activities and material together
3. Teacher and student have an opportunity to express the difficulties or problem they face during the learning process.
4. The teacher introduce the material for next lesson.

Editing

- The students recheck again their work, for any grammar errors they put in their work sheet.

Final Draft

1. The teacher asked the student to submit their work sheet
2. The student were back to their sitting arrangement
3. The teacher gave them some information related to the lesson.

Treatment for the Control Group.

The researcher used conventional method in teaching and learning English language in the control group. In the conventional method or the traditional teaching the teacher would be the centre of teaching-learning activities. The following were the steps in teaching control group using conventional method:

1. The teacher distributed the Picture to each person and explained about descriptive text, narrative text, to the students.
2. After the students read and understood about diary, descriptive, narrative text, then the teacher asked the students to write about their experience and describe about the picture and write a narrative text, and based on the topic learned that meeting. For example on the topic about "The wolf and the Grapes, Cinderella" they were given the choice of freedom to choose which topic that they wanted to do or write.
3. For 20 minutes, the teacher observed them while doing their work sheet. Teacher would collect the paper and grade the students individually according to their worksheet.

Post-test

In the last meeting the researcher conducted a Post-test for both the experimental and the control group. This was conducted to find out the result of the whole treatment. The post-test score was determined whether there are any differences between students' score of the experimental and control group.

Scoring

It is important to have a rubric of scoring the

Aspect	Level	Criteria
Content	30 – 27	EXCELLENT TO VERY GOOD: knowledgeable, substantive, thorough development of thesis, relevant to assigned topic.
	26 - 22	GOOD TO AVERAGE: some knowledge of the subject, adequate range, limited development of thesis <u>lacks of</u> detail, mostly relevant the topic.
	21 – 18	FAIR TO POOR: limited knowledge, little substances, in adequate development of thesis.
	16 – 13	VERY POOR: does not show knowledge of subject, non-substantive, not pertinent.
Organization	20 – 18	EXCELLENT TO VERY GOOD: fluent expression, ideas clearly stated/ supported, succinct, well organized, logical sequencing, cohesive.
	17 – 14	GOOD TO AVERAGE: somewhat choppy, loosely organized but main ideas stand out, limited support, logical but incomplete sequencing.
	13 – 10	FAIR TO POOR: non-fluent, ideas confused or disconnected <u>lacks of</u> logical sequencing and development.
	9 – 7	VERY POOR: does not communicate, no organization, or not enough to evaluate
Vocabulary	20-18	EXCELLENT TO VERY GOOD: sophisticated range, effective word/ idiom choice and usage, word form mastery, appropriate register.
	17-14	GOOD TO AVERAGE: adequate range, occasional errors of word/ idiom form, choice, usage but meaning not obscured.
	13-10	FAIR TO POOR: limited range, frequent errors of word/ idiom form, choice, usage, meaning confused or obscured
	9-7	VERY POOR: essentially translation, little knowledge of English vocabulary, idioms, word form, OR not enough to evaluate.

students’ writing. In this research the researcher analyse, checked and assessed the students’ writing with the language expert or an English lecturer. The assessment of students’ writing the

researcher based on the criteria written in ESL composition work (Heaton, 1998) where there are five aspects consist of each points, so for the perfect score is 100/1 question.

The Assesment of Composition Work

There were hypotheses formulated for this study as the null hypothesis and the alternative hypothesis as follow:

The alternative hypotheses (H_a) below:

There is a significant difference in the enhancement of writing skills between the students who are taught using the Group Investigation technique and those who are taught through the conventional method.

While the null hypothesis (H_o): There is no

Language Use	25-22	EXCELLENT TO VERY GOOD: effective complex construction, few errors agreement, tense, number, word order/ function, articles, pronouns, preposition.
	21-18	GOOD TO AVERAGE: effective but simple construction, minor problems in complex construction, several errors of agreement, tense, number, word order/ function, articles, pronouns, prepositions but meaning seldom obscured.
	17-11	FAIR TO POOR: major problems in simple/complex construction, frequent errors of negation, agreement, tense, number, word order/function, articles, pronouns, prepositions and/or fragments, run-ons, deletions, meaning confused or obscured.
	10-5	VERY POOR: virtually no mastery of sentence construction rules, dominated by errors, does not communicate, OR not enough to evaluate
Mechanics	5	EXCELLENT TO VERY GOOD: demonstrates mastery of conventions, few errors of spelling, punctuation, capitalization, paragraphing.
	4	GOOD TO AVERAGE: occasional errors of spelling, punctuation, paragraphing but meaning not obscured
	3	FAIR TO POOR: frequent errors of spelling, punctuation, capitalization, paragraphing, poor handwriting, meaning confused or obscured.
	2	VERY POOR: mastery of conventions, dominated by errors of spelling, punctuation, capitalization, paragraphing, handwriting illegible, or not enough to evaluate.

(Heaton 1998)

significant difference in the enhancement of writing skills between the students who are taught using the Group Investigation technique and those who are taught through the conventional method.

RESULT AND FINDINGS

To collect the data the researcher designed the research into three activities

Conducting the pre-test

The researcher gave the same instrument to both the control and the experimental group. The researcher designed the instrument for the pre-test based on topic in the textbook of second year that related to improve students' ability in writing skills. There are three question for the pre-test, one question the students wrote their experience, and the other of one questions the students wrote the story of the Wolf and the Grapes and the last question is describing a picture in their paper. The result of the student's writing was very bad, because they are lazy to write their experience, but the big problem was how to change it to the past tense. It took 80 minutes in doing the pre-test.

Applying the treatment

After doing the pre-test, the next meeting the researcher started to implement Group Investigation Technique for the experimental group and conventional method to the control group. But both groups were taught how to write, describe well and got the same topic and lesson to study.

Administering the post-test

After the treatment was done, the researcher conducted the post-test for both groups the control and experimental group took the same questions. This test was used by the researcher to know whether there is any

enhancement between control and experimental in student's writing ability.

Scoring : The scoring was based on rubric's writing presented previously, taken from Heaton (1998).

Based on the calculation of the data, the mean and standard deviation in student's achievements has a significant gained on the average level. The result of the control group in pre-test was 144.11, and post-test was 201.40 , while the achievements of the experimental group study for pre-test was 136.81, and post-test was 226.49. The standard deviation for each group in SPSS 16 the result was 0.023 for the control group and the experimental group was 0.033

Another statistical analysis was done in data processing e.g., gain, normality test, homogeneity test, and hypothesis testing. Please see Table 1., in the appendix.

For that, the data is normally distributed if both data have p -value (sig) larger ($>$) than $\alpha = 0.50$ and data is not normal if p -value smaller ($<$) than $\alpha = 0.50$. And based on the result from the table in appendix table 1, both data was normally distributed because the significant score of the gain score for the experimental group was (sig) .220 larger ($>$) than $=.050$ and the significance of the gain score for the control class was (sig) .423 larger ($>$) than $=.050$. Please refer to table 2 in the appendix

Based on statistics if both of the data were normally distributed, then the data homogeneity test was used.

The result of the homogeneity can be seen in the following table: Table 3 The Homogeneity of Variances Gain

This research used the data based on the mean (see table 3, in the appendix.). Data is homogenous if value (sig) larger ($>$) than $\alpha = .050$ and data is not homogenous if Pvalue is smaller ($<$) than $\alpha = .050$. The result of the data between the control and experimental class are homogenous because Sig (.074) is bigger ($>$) than $\alpha = .050$.

Based on the result of the normality test in Shapiro-Wilk (please see appendix), which the data was normally distributed, the researcher used a t-test to analyse the result and to find out the enhancement between the control group and experimental group for the exam scores after implementing the treatment by using clustering technique to enhance student's ability in writing.

For that the researcher set two assumptions to know whether the hypothesis is accepted or not:

1. If, $p\text{Value (Sig.)} \leq \alpha (.050)$: H_a is accepted, H_o is rejected. It means there is a significant enhancement for students' ability in writing skills after being given the treatment using the group investigation technique.

If, $p\text{Value (Sig.)} \geq \alpha (.050)$: H_a is rejected, H_o is accepted. It means there is no significant enhancement of students' ability in writing skills after being given the treatment using the group investigation technique.

The result calculation can be seen in the following table3

Table 3. Independent samples test

Independent Samples Test									
	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Gain Equal variances assumed	3.288	0.074	-4.358	73	.000	-.1766378	.0405329	-.257419	-.0958559

According to the data above, the researcher used the data of equal variance assumed concern that the sample data was distributed homogenous and sig (2-tailed).

Based on the result of the data and findings, it is shown that there is a significant difference in the enhancement of writing skills between the students who are taught using the Group Investigation technique and those who are taught through the conventional method.

It is shown in the table above. The Gain Score in pre and post-test of the experimental and control group.

From this data, the researcher can conclude also that using the Group Investigation technique can improve students' writing skills, because it was supported by several theories and research also, where the strength of the Group Investigation technique (Way and Rowe (2004), Rao, at all (2009) and Nur and Suci (2011), Hutabarat (2020))

Discussion

Based on the result of the data and findings, it showed that there is a significant difference on the enhancement of the writing skills between the students who are taught using Group Investigation technique and those who are taught conventional method. It showed in Table 4.1. The Gain Score in pre and post test of experimental and control group. This study is supported by Nisfah (2010). She found that by implementing Group Investigation technique, it can help students to solve the problem of students in writing. Especially when the students do not get ideas to write, and by practicing the Group Investigation technique trains the students to think widely about a topic that they wanted to discuss and it stimulate and motivate them to write. So the Group Investigation technique can be used as an alternative technique of teaching in writing skills.

Conclusion

The researcher concluded that Enhancing students' achievement in writing skills through group investigation techniques can significantly enhance the students' achievement in writing skills.

Recommendation

After conducting the research and drawing the result and conclusion, the researcher would give the following recommendation:

The Group Investigation technique can be used as an alternative way to teach writing for Junior High School students. By improving students' skills through Group Investigation technique the teacher will know that this can help students to solve their problem in composing a writing because the student will get many ideas or words after doing Group Investigation technique. The teacher also should know that by using Group Investigation technique can motivate students to write, and it can develop students' achievement in writing skills.

For other researcher who will conduct a study and want to know more about Group Investigation technique to improve students' ability in writing skills for other scopes and in a different level of students, this study hopefully can be used as resource, reference, and guidance for the same research in getting a better result in the future.

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Appendix

Appendix

Table 4: Test of Normality

Kelas	Statistics	Df	Sign.
Gain Control	0.971	37	0.423
Gain GI	0.961	38	0.220

Table 1. Pre-test, Post-test, St. Deviation, and Normalized Gain

	Experimental Group		Control Group	
	Mean	St. Deviation	Mean	St. Deviation
Pre-test	136.81	21.685	144.11	25.907
Post-test	226.49	31.307	201.40	26.741
Normalized Gain	0.542	0.203	0.366	0.143

Table 2

Kelas	Shapiro-Wilk		
	statistics	Df	Sig.
Gain Control	.099	38	.423
Experimental	.099	37	.220

Lilliefors Significance Correction*.

This is a lower bound of the true significance

Table 3: Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
3.288	1	73	0.74