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The Effect of Discovery Learning and Direct Instruction on EFL Learners with Different Learning Styles

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Abstract

This study is experimental research with a factorial design which aimed to find out the effect of discovery learning and direct instruction on EFL learners with different learning style (The Tenth Graders of SMA Negeri 15 Semarang). The samples of the study were tenth graders of SMA Negeri 15 Semarang in the 2018/2019 academic year. There were two classes, experimental class I and experimental class II which every class consisted of 20 students. Direct Instruction method was used in the experimental class I, while Discovery Learning method was used in experimental class II. To know-how is the effect of direct instruction to visual and auditory and how is the effect of discovery learning to visual and auditory, T-test was used. To know-how is the difference in the achievement between visual and auditory by using direct instruction and discovery learning, students' mean scores in experimental classes I and II were compared. While two-way ANOVA with F-test at the 5% (0.05) level of significance was used to know how significant relationships among the methods and the learning style. The result of this study showed that direct instruction and discovery learning methods are effective to be used in teaching writing for visual and auditory learning style students. There were no significant differences in achievement between visual and auditory learning style students using direct instruction and discovery learning methods. For the interaction among the variables, it shows that there was no interaction among the methods, students' learning style, and students' writing skill.

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INTRODUCTION

English is one of the subjects introduced in schools for many years from Kindergarten up to University. English is increasingly important to be taught as a foreign language in Indonesia. It is a compulsory subject to be taught for three years at Junior High Schools and for three years in Senior High Schools (Lauder, 2008).

The 2013 curriculum is the current curriculum in Indonesia. It has been implemented since the beginning of the 2013/2014 academic year, July 2013. At that time, not all the schools implement the 2013 curriculum. Now, many schools implement the 2013 curriculum even though there are a few schools that still implement a school-based curriculum (KTSP).

The concept of the 2013 curriculum is an effort to improve the nation's education quality. The students should be taught to think creatively. Teaching and learning have to be accurate and offer the best lesson, and it can be achieved by teaching them to be creative.

The 2013 curriculum has three types of learning models: project-based model, problem-based model, and discovery learning. Here, the researcher chose discovery learning to be the main discussion which will be correlated to the development of English writing skills and the different learning styles. Besides, the researcher also chose direct instruction in this study.

Students learn English as an international language for many purposes, one of them is for improving writing skills in English. They have to know how to write types of texts well. It can be based on diction, vocabulary, grammar and many more. In Indonesia as a non-English speaking country, English is a foreign language. Perhaps in recognition of the quality issue, there is the rising awareness that language teachers should be appropriately trained as teachers of English (Philipson in Liyanage, 2008). Thus, the teacher has to learn more like a good teacher of English for their students.

Language learning strategies have been proven in affecting success in language learning. Language strategies are conscious techniques that individuals use to solve problems in their language learning process (Brown, 2000). In other words, language learning strategies are needed which aims to break down some problems that the students have in language learning, especially in English language learning for secondary school learners.

Although there is a rapidly growing body of research focusing on the various aspects of language learning strategies, there have been controversies among the researchers about the definition of language learning strategies. Generally, learning strategies have not been clearly defined and there are many definitions of the language learning strategies in the SLA literature. (Raoofi, Binandeh, & Rahmani, 2017). Thus, language learning strategies need development in the study or some research.

The students usually do not like to write something as their material in the classroom, especially in the English language. Sometimes, they have an idea, but they acknowledge that it is still difficult to write what's on in their minds. So, writing strategies are needed for them.

Direct instruction can improve students' cognitive learning (Sudarmin, Mursiti, & Asih, 2018 and Buchori et al, 2017). It also can improve students' writing ability to write papers (Marzuki, 2016). Besides that, in the concept of measurement, direct instruction can improve students' learning outcomes (Wenno, 2014). In addition, direct instruction has a better effect on student achievement. It can affect interlanguage pragmatic pedagogy, music literacy levels, and students' achievement in Mathematics (Gholami, 2012; Lowe & Belcher, 2012; and Oladayo & Oladayo, 2012).

Some researchers found that discovery learning can improve students' ability. Discovery learning allows the students to learn the English language by having a role in their learning and developing their activity through the language. Besides that, discovery learning can improve students' ability such as improving students' achievement in writing descriptive text, improving the students' reading comprehension, improving in generating a research topic, and improving in learning among reluctant

secondary students (Rahmi & Erlinda, 2014; Mukharomah, 2015; Hajar, 2016; Arifani, 2016; & Bohney, 2016). Moreover, according to Waluyo (2018), students can work in a group discussion to solve the problems and answer the questions correctly. In other words, the students do not only improve their ability but also developing their activity in language learning.

Studies on different learning styles have been done by Lahita, Mujiyanto, and Sutopo (2018), Munir, Emzir, and Rahmat (2017), Magfirah (2017), Al-Zayed (2017), Jayakumar, Suresh, Sundaramari, and Prathap (2016), & Marwiyah and Kaswan (2015). In these studies, they claim that there is no significant difference in achievement and comprehension among students' learning styles. It did not show a significant relationship. In line with these studies, learning styles have no impact on students' acceptance of open learner models for information sharing (Sek, Deng, McKay, & Qian, 2015). In addition, Rogowsky, Calhoun, and Tallal (2015) stated that there is no statistically significant relationship between learning style preference and instructional method. In short, learning styles do not influence students' achievement, comprehension, and ability.

Discovery learning faces students to some sort of structured experience for them to discover defining attributes, concepts, or principles inductively. Some little instructions are then along the way as necessary (Johnson, 2010). Also, according to Hammer (1997), discovery learning is designed to engage students in discovering the intended content guided by the teacher and materials. Thus, by using discovery learning, the students have to find a way to know the material. The teacher also gives them some little explanation about the material.

Direct Instruction (DI) is an educational theory that is most effective to use in teaching and learning activity. It is guided instruction explicitly (Lorence, 2015). Thus, direct instruction is an explicit explanation in teaching and learning activity.

Learning style is the general approaches, such as global or analytic, auditory or visual that students apply in getting a new language or in learning any other subject. How learners understand, interact with, and respond to the learning environment (Celcia-Murcia, 2001).

Based on the explanation above, the researcherer conducted a study to investigate the effect of discovery learning and direct instruction on writing skill of the EFL learners with different learning styles at the tenth graders of SMA Negeri 15 Semarang. This present study tried to find out the effect of Discovery Learning and Direct Instruction in teaching students' writing skill in the group of students who have visual learning style and auditory learning style toward EFL learning.

METHOD

This study used a quantitative research design. The design of this experimental research would use 2x2 factorial designs to investigate the effect of direct instruction and discovery learning on the EFL secondary learners with different learning styles in writing skills. A Factorial design indicates relationships between variables. A Factorial design is the most common way to study the effect of two or more independent variables. In a Factorial design, all levels of each independent variables are combined with all levels of the other independent variables to produce all possible conditions.

In this study, there are four variables. One dependent variable (students' writing skills), two independent variables (direct instruction and discovery learning method), and one moderator variable (students' learning style).

The population was the tenth graders student of SMA Negeri 15 Semarang. There are 11 classes. There were 40 students of X IPA 4 class and X IPA 5 class consisting of visual and auditory learning style students that were taken as the sample. In this study, direct instruction method was used to teach writing skill in experimental class I and discovery learning method was used to teach writing skill in experimental class II.

The instruments which were used to collect the data were questionnaire, observation, and test. Then, the data were analyzed using

independent sample T-test to know-how is the effect of direct instruction to visual and auditory and how is the effect of discovery learning to visual and auditory, then the group statistic of SPSS were used to know-how is the difference in the achievement between visual and auditory by using direct instruction and discovery learning, while ANOVA was used to know how significant relationships among the methods and the learning style.

RESULTS AND DISCUSSIONS

Data Analysis

Concerning the data analysis in this research, the researcher elaborated how to analyze the obtained data from pre-test and post-test in terms of the result of statistical analysis. For instance, to confirm the normality, homogeneity, and significant differences among the two experimental groups, researcher used descriptive statistics, t-test, and ANOVA as the suitable statistics test. To measure whether each group has the differences, there were three t-tests that have been conducted (the first one is one sample t-test, independent t-test, and the second is paired sample t-test).

Data Description of Pre-Test

Doing the pre-test, the researcher had several necessary phases to do such as explaining the instructions of the test and assessing the students' learning style. 1) The phase of explaining the instruction of the pre-test. The researcher tried to explain to the students what they should do and let them ask the instruction; 2) Assessing the students' writing. The researcher used a writing test as an instrument. After the data obtained, it used the scoring rubric (Brown, 2004: 244) to assess and see if the students have completed the standard minimum of scoring.

Testing of the pre-test consisted of a comparison between the performance of visual and auditory learning style students in the experimental group 1. The statistics are given in table 1.

Table 1. Descriptive Statistics for the Visual and Auditory Learning Style Students of Group 1

Learning Style	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Visual	10	62.30	1.309	4.138
Auditory	10	63.00	0.966	3.055
Total	20	62.65	0.796	3.558

The means can be seen from Table 1 that the visual learning style students group is (62.30) and the auditory learning style students group is (63.00).

Meanwhile, testing of the pre-test consisted of a comparison between the performance of visual and auditory students in the experimental class 2. The statistics are given in Table 2.

Table 2. Descriptive Statistics for the Visual and Auditory Learning Style Students of Group 2

Learning Style	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Visual	10	63.90	0.900	2.846
Auditory	10	64.00	0.856	2.708
Total	20	63.95	0.605	2.704

As the result of pre-test, the visual students group is (63.90) and auditory group (64.00).

The Result of Normality and Homogeneity of Pre-Test Data

To know if the obtained data from the experimental class 1 and 2 were normal and could use parametric analysis, the distribution had to be normal in which the significance is 0.05 or higher.

Table 3. Normality Test of Pre-test

Group	Kolmogrov-Smirnov		Shapiro-Wilk	
	Statistic	Sig.	Statistic	Sig.
1	0.154	.200	0.947	0.321
2	0.165	0.160	0.926	0.127

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Table 3 shows that the significance of experimental class 1 is higher than 0.05 and so is the experimental class 2. It could be concluded that the distribution was normal and the data were parametric analysis.

Also, testing the homogeneity of variance both of the classrooms was conducted after testing the normality. It was used to confirm whether students' achievement in the experimental class 1 had as equal as achievement the experimental class 2. If the significant is 0.05 or higher, it can be said that the significant variances tested highly same.

Table 4. Test of Homogeneity of Variances in Pre-test

Exp. Class 1 and 2	Levene Statistic	df1	df2	Sig.
Based on Mean	0.635	1	38	0.430
Based on Median	0.517	1	38	0.476
Based on Median and with adjusted df	0.517	1	33.231	0.477
Based on trimmed mean	0.612	1	38	0.439

Table 4 shows that the significance of achievement used *Levene Statistic* are 0.430 based on mean, 0.476 based on median, 0.477 based on median and with adjusted df, and 0.439 based on trimmed mean or higher than 0.05. It means that the achievement of experimental class 1 and 2 are highly the same.

Data Description of Post-Test

In description of post-test, the data analysis was little bit different. There was additional analysis. It was ANOVA. It was used to analyze whether there is interaction between Discovery Learning method, Direct Instruction method and visual and auditory learning style of students. In analyzing the data using ANOVA, it needs to find F value to reveal the significant differences. The data still had similar as previous phases test. In post-test, the visual and auditory learning style students each class had a particular teaching method by using Discovery Learning or Direct Instruction method before the test. This test also was aimed to measure the students' achievement after they have got the treatment for several meeting. Here are the following result of post-test in the experimental class 1 and 2.

Table 5. Visual and Auditory Learning Style Students using Direct Instruction method

No	Visual	Score	Auditory	Score
1	B3	80	B2	78
2	B9	82	B4	82
3	B11	78	B7	86
4	B13	82	B12	79
5	B17	83	B14	77
6	B19	83	B15	77
7	B20	82	B18	87
8	B23	79	B22	79
9	B32	78	B34	80
10	B19	85	B20	80

In the experimental class 1, the post-test data was tested to see the comparison between the performance of visual and auditory learning style students in the experimental class 1. The statistics are given in table 6.

Table 6. Descriptive Statistics for the Visual and Auditory Learning Style Students Group 1

Learning Style	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Visual	10	81.00	0.650	2.055
Auditory	10	80.50	1.108	3.504
Total	20	80.75	0.628	2.807

The means can be seen from Table 6 that visual learning style students group is slightly higher (81.00) than auditory learning style students group (80.50).

Table 7. Visual and Auditory Learning Style Students using Discovery Learning

No	Visual	Score	Auditory	Score
1	C3	79	C4	81
2	C6	81	C5	79
3	C11	80	C7	87
4	C12	89	C8	84
5	C15	83	C9	76
6	C16	80	C10	82
7	C17	84	C13	72
8	C27	80	C14	78
9	C31	77	C23	82
10	C35	78	C28	82

The experimental class 2 compares the post-test data between the performance of visual and auditory learning style students. The statistics are given in Table 8.

Table 8. Descriptive Statistics for the Visual and Auditory Learning Style Students Group 2

Learning Style	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Visual	10	81.10	1.100	3.479
Auditory	10	80.30	1.342	4.244
Total	20	80.70	0.849	3.799

The means can be seen from Table 8 that visual learning style students group is higher (81.10) than auditory learning style group (80.30).

The Result of Normality and Homogeneity of Post-Test Data

The data of normality was tested again to see whether the data from post-test was normal or not. The result (see Table 9) showed that both class 1 and 2 reached the significance of normality more than 0.05. It could be concluded that the data was normal.

Table 9. Normality Test of Post-test

Group	Kolmogrov-Smirnov		Shapiro-Wilk	
	Statistic	Sig.	Statistic	Sig.
1	0.155	.200*	0.929	0.149
2	0.116	.200*	0.978	0.901

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

a. Lilliefors Significance Correction

Table 10. Test of Homogeneity of Variances in Post-test

Exp. Class 1 and 2	Levene Statistic	df1	df2	Sig.
Based on Mean	0.539	1	38	0.467
Based on Median	0.646	1	38	0.427
Based on Median and with adjusted df	0.646	1	34.299	0.427
Based on trimmed mean	0.565	1	38	0.457

The homogeneity of achievements in the post-test (see Table 10) showed that 0.467 based on mean, 0.427 based on median, 0.427 based on median and with adjusted df, and 0.457 based on trimmed mean were higher than the significance of homogeneity (0.05). It means that the variants were the same.

The Effect of Direct Instruction to the Visual Learning Style Students

The first alternative hypothesis (Ha) dealt with a comparison between the achievement in the pre-test and post-test for the visual learning style students using the Direct Instruction method. The obtained statistics were given in Table 11.

Table 11. Descriptive Statistics for Visual Learning Style Groups of Direct Instruction

Learning Style	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Pre-test	10	62.30	1.309	4.138
Post-test	10	81.00	0.650	2.055
Valid N (listwise)	10			

The calculation can be seen in Table 11, the mean of achievement in the pre-test for the 10 participants who form the visual learning style group is 62.30. And the mean of the post-test is 81.00. The obtained values (see Table 12) were t= -13.523, df= 9. P<.000 (2-tailed).

Table 12. Paired Samples Test for the Performance of Visual Learning Style Group of DI

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-test - Post-test	-18.700	4.373	1.383	-21.828	-15.572	-13.523	9	0.000

Based on Table 12, the level of significance was 0.05. The result of the test showed t-table (0.05.9) was 2.262 and the t-account was -13.523. It can be said that the t-

account was lower than the t-table or Ha was accepted. Meanwhile based on the probability p-*value* was 0.00 or lower than 0.05. It meant the level of significance was highly significant. Therefore, the result demonstrated that Ha was accepted, the use of the Direct Instruction method was effective for the visual learning style students because the data was significant after the treatment.

The Effect of Direct Instruction to the Auditory Learning Style Students

The second alternative hypothesis (Ha) deals with a comparison between the achievement in the pre-test and post-test for auditory learning style students using the Direct Instruction method. The obtained values were given in table 13.

Table 13. Descriptive Statistics for Auditory Learning Style Groups of Direct Instruction

Learning Style	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Pre-test	10	63.00	0.966	3.055
Post-test	10	80.50	1.108	3.504
Valid N (listwise)	10			

The result can be seen in Table 13, the mean of achievement in the pre-test and post-test for the 10 participants who are the auditory learning style group. The value of the pre-test was 63.00 and the post-test was 80.50. The obtained values (see table 16) obtained were t= -11.667, df= 9. P<.000 (2-tailed).

Table 14. Paired Samples T Test for the Performance of Auditory Learning Style Group of DI

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-test - Post-test	-17.500	4.743	1.500	-20.893	-14.107	-11.667	9	0.000

The result of the paired samples test showed that t-table (0.05.9) was 2.262 and the t-account was -11.667. It can be said that the t-account was lower than the t-table or Ha was accepted. Meanwhile, based on the probability p-*value* was 0.00 or lower than 0.05. It meant that it was highly significant. Therefore, the result demonstrated that the Ha was accepted, the use of direct instruction method was effective for auditory learning style students.

The Effect of Discovery Learning to the Visual Learning Style Students

The third alternative hypothesis (Ha) compares between the achievement in the pre-test and post-test for visual learning style students using Discovery Learning method. The obtained values were given in Table 15.

Table 15. Descriptive Statistics for Visual Learning Style Groups of Discovery Learning

Learning Style	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Pre-test	10	63.90	0.900	2.846
Post-test	10	81.10	1.100	3.479
Valid N (listwise)	10			

The result can be seen in Table 15, the mean of achievement in the pre-test for the 10 participants who fare the visual learning style group was 63.90 and the post-test was 81.10. The obtained values (see table 16) were t= -9.689, df= 9. P<.000 (2-tailed).

Table 16. Paired Samples T Test for the Performance of Visual Learning Style Group of DL

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-test - Post-test	-17.200	5.613	1.775	-21.216	-13.184	-9.689	9	0.000

The result of the test showed t-table (0.05.9) was 2.262 and the t-account was -9.689. It can be said that the t-account was lower than the t-table or Ha is accepted. Meanwhile, based on the probability p-*value* is 0.00 was lower than 0.05. It meant the level of significance was significant. Therefore, the result demonstrated that Ha was accepted, the use of the Discovery Learning method was effective to the visual learning style students. It can be concluded that the achievement was significant after the treatment.

The Effect of Discovery Learning to the Auditory Learning Style Students

The fourth alternative hypothesis (Ha) compares the achievement of auditory learning style students in the pre-test and post-test using the Discovery Learning method. The values were given in Table 17.

Table 17. Descriptive Statistics for Auditory Learning Style Groups of Discovery Learning

Learning Style	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Pre-test	10	64.00	0.856	2.708
Post-test	10	80.30	1.342	4.244
Valid N (listwise)	10			

The result can be seen in Table 17, the mean of achievement in the pre-test for the 10 participants who are auditory learning style group was 64.00 and the post-test was 80.30. The obtained values (see Table 18) were t= -9.273, df= 9. P<.000 (2-tailed).

Table 18. Paired Samples T Test for the Performance of Auditory Learning Style Group of DL

		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		T	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Pre-test - Post-test	-16.300	5.559	1.758	-20.277	-12.323	-9.273	9	0.000

The result of the test showed t-table (0.05.9) was 2.262 and the t-account is -9.273. It can be said that the t-account was lower than the t-table or Ha was accepted. Meanwhile, based on the probability p-*value* was 0.00 or lower than 5% which means it was significant. Therefore, the Ha was accepted or it can be said that the Discovery Learning method was effective for auditory learning style students as well.

Comparing Post-Data

The data dealt with the significant differences of achievement between visual and auditory learning style students using the Direct Instruction method in the experimental class 1 and Discovery Learning method in the experimental class 2. The calculated data were gained from the post-test in order to the researcher could compare students' achievements after the students got the treatments.

The Difference of The Achievement between Direct Instruction Method and The Students' Learning Style

The fifth alternative hypothesis (Ha) is to prove whether there are significant differences in achievement between visual and auditory learning style students using the Direct Instruction method. To test it, the achievement in the post-test was statistically calculated through the independent t-test. The values were given in Table 19.

Table 19. Descriptive Statistics for The Visual and Auditory Learning Style Groups of DI

Learning Style	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Pre-test	10	81.00	0.650	2.055
Post-test	10	80.50	1.108	3.504
Valid N (listwise)	10			

The mean of the visual learning style group was 81.00 and the auditory learning style group was 80.50. These groups have a mean difference of 0.50 (81.00-80.50) and its difference was -4.616 to 9.61 (see *lower* and *upper* in Table 20). On the other side, Table 20 summarizes the obtained values from the t-test. The p-value of post-test (sig (2-tailed) = 0.702 and 0.703) were greater than the level of significance 5% (0.05). It means that the Ho was accepted, there were no

significant differences in achievement between the visual and auditory learning style students using Direct Instruction method.

Table 20. T-test for the Performance of Visual and Auditory Learning Style Group of DI

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Score	Equal variances assumed	1.687	0.210	0.389	18	0.702	0.500	1.285	-2.199	3.199
	Equal variances not assumed			0.389	14.535	0.703	0.500	1.285	-2.246	3.246

The Difference of the Achievement between Discovery Learning Method and the Students' Learning Style

The sixth alternative hypothesis (Ha) is similar to the experimental class 1 but it applied the Discovery Learning method. It is to prove whether there are significant differences in achievement between visual and auditory learning style students using the Discovery Learning method. Then the obtained values were given in Table 21.

Table 21. Descriptive Statistics for The Visual and Auditory Learning Style Groups of DL

Learning Style	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Pre-test	10	81.10	1.100	3.479
Post-test	10	80.30	1.342	4.244
Valid N (listwise)	10			

In this class, the mean of the visual learning style group was 81.10 and the auditory learning style group was 80.30. These groups had a mean difference, 0.80 (81.10-80.30) and its difference was -2.680 to 3.880 (see *lower* and *upper* in Table 22). Then, Table 22 shows that the p-value of the post-test (sig (2-tailed) = 0.705) was higher than the level of significance of 5% (0.05). It means that Ho was accepted, there were no significant differences in

achievement between visual and auditory learning style students using Discovery Learning method.

Table 22. T-test for the Performance of Visual and Auditory Learning Style Group of DL

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Score	Equal variances assumed	0.028	0.869	0.384	18	0.705	0.600	1.561	-2.680	3.880
	Equal variances not assumed			0.384	17.999	0.705	0.600	1.561	-2.680	3.880

The Significant Relation of Students' Writing Ability among The Methods and The Learning Style

Normality, homogeneity, and hypotheses testing of pre-test and post-test are the requirements of the ANOVA Test. And the requirements have been completed descriptively and statistically. Then, in the analyzing ANOVA factorial design 2x2 calculated statically by using SPSS analysis to measure the tests of between-subjects effects (multifactor analysis of variance).

The seventh alternative hypothesis (Ha) is to discover the significant interaction among the methods and learning style in affecting students' writing of narrative text achievement. Table 23 figured out the mean difference of class 1 was 81.05 and class 2 was 80.40. The difference was 0.65 (81.05-80.40). Then the statistical analysis of homogeneity (see Table 24) figured out the p-value was 0.225 based on mean, 0.267 based on the median, 0.267 based on median and with adjusted df, and 0.217 based on trimmed mean or greater than significance test 5% (0.05). It means that the test of homogeneity of variances (classes 1 and 2) was the same.

Table 23. Descriptive Statistics for Visual and Auditory Learning Style Groups

Learning Style	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Visual	20	81.05	0.622	2.781
Auditory	20	80.40	0.847	3.789
Total	40	80.73	0.521	3.297
Valid N (listwise)	20			

Table 24. Test of Homogeneity of Visual and Auditory Learning Style Groups

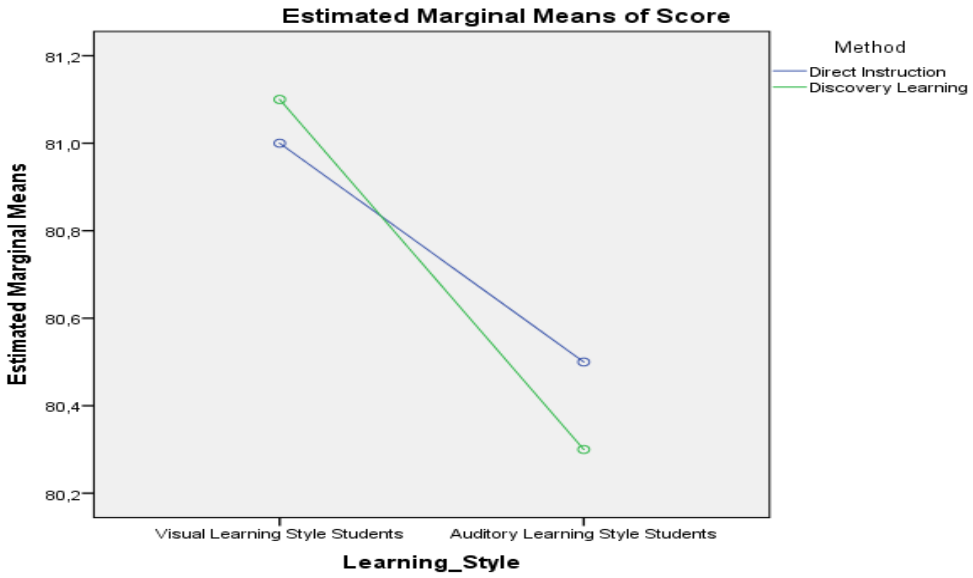
Visual & Auditory	Levene Statistic	df1	df2	Sig.
Based on Mean	1.521	1	38	0.225
Based on Median	1.270	1	38	0.267
Based on Median and with adjusted df	1.270	1	35.225	0.267
Based on trimmed mean	1.575	1	38	0.217

Table 25. ANOVA for The Performance of Visual and Auditory Learning Style Groups

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	4.225	1	4.225	0.382	0.540
Within Groups	419.750	38	11.046		
Total	423.975	39			

Testing ANOVA has several phases to do. They are to test the alternative hypothesis (Ha), level of significance (5%), F-count, F-table, and compare F-count with F-table. To compare the significant differences between F-count with F-table as follow: 'the alternative hypothesis (Ha) is accepted if F count > F table'. The result (see Table 25) shows F-count was 0.382 and F-table was 4.098 (see f table). It means that Ho was accepted.

Figure 1. Graphic of Score of the Interaction Effect



From the figure 1, it shows that there is no significant interaction among the methods and learning style in affecting students' writing achievement or it is called 'no interaction effects'. In this study, it can be inferred that the methods and the learning style did not affect the students' achievement.

CONCLUSION

Direct Instruction method has been proven effective in teaching writing skills for visual learning style students. It was also found that the Direct Instruction method was effective in teaching writing skills for auditory learning style students. Furthermore, the use of the Discovery Learning method was effective in teaching writing skills for visual learning style students. Discovery Learning method was effective in teaching writing skills for auditory learning style students as well. In the next conclusion, there were no significant differences in achievement between visual and auditory learning style students using the direct instruction method. There was no significant difference in achievement between visual and auditory learning style students using the discovery learning method. However, there was no significant interaction among the methods and learning styles in affecting students' writing achievement. In conclusion, methods and learning styles can be influenced by other things. The methods can be used by paying attention to class conditions or even students' conditions.

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