

## The Relationship among Language Learning Strategy, Learning Style Preferences and Learners' Reading Comprehension

Aisyah Pratiwi<sup>1\*</sup>

### Abstract

Objectives of this research are to find out: (1) the relationship between learning strategies and learning style preferences toward learners' reading comprehension, (2) the relationship between learning strategies and learners' reading comprehension and (3) the relationship between learning style preferences and learners' reading comprehension. This was a correlational research which had been conducted at the twelfth graders of SMKN 6 Bekasi. Isaac and Michael table with 0.05 as the level of significant error was used as the way to determine the number of the sample. From the table, 161 learners became the The sample of this research with the use of simple random sampling as the way to choose the samples. Strategy Inventory of Language Learners (SILL) questionnaires, Perceptual Learning Style Preferences (PLSP) questionnaires and Indonesian National Examination were used as the instruments of this research. All of those instruments were tried out to obtain the valid and reliable items. Then, the data were analyzed using multiple regression. Based on the research result, the research findings were as follows: (1) there is significant relationship between learning strategies and learning style preferences toward learners' reading comprehension; (2) there is significant relationship between learning strategies and reading comprehension; (3) there is no significant relationship between learning style preferences and reading comprehension. Finally, it can be inferred that (1) the combination of learning strategies and learning style preferences relate with learners' reading comprehension; (2) learners' reading comprehension does not significantly depend on learning style preferences but significantly depend on learning strategies.

**Keywords:** SILL; PLSP; reading comprehension

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<sup>1</sup> IAIN Syaikh Abdurrahman Siddik Bangka Belitung

\*Author Correspondent: [aisyahpratiwi2103@gmail.com](mailto:aisyahpratiwi2103@gmail.com)

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### Introduction

As receptive skills, reading gave major effects for the language learners. By reading, they would be able to enhance their vocabulary, to improve their writing ability and to discover a lot of useful knowledge. Vocabulary as factors that could ease them to master the four language skills could be enhanced through reading many texts. Reading those texts then discovering new vocabulary and using that vocabulary well were the benefited activities in reading. Besides vocabulary, grammar mastery could also be enhanced through reading because in a reading text the proper grammar structure was commonly discovered. As the result, it could improve their writing skill. Knowledge could be enhanced by reading as well as vocabulary and writing. Through reading, language learners could obtain enormous current knowledge and information which were useful for them. To grasp the knowledge and information from a reading text, comprehension was needed. Reading comprehension happened when the learners were able to be informed by a reading text and had comprehension as the goal of reading.

Since reading benefits language learners deeply, reading was a common thing to do even in English as Foreign Language (EFL) classrooms. In EFL, English was a mandatory subject with reading as one of the focused skills which was learned by learners. Reading many kinds of text was one of the activities in many EFL class such as in vocational high school. Vocational high school as the school that had an obligation to prepare the learners to face the work field, having good reading comprehension might be very beneficial for them. Having memo, message or any kinds of written text in English were common in the work field. Thus, the reading text found at the vocational high school syllabus were like memo, short text, letter and instruction. Even outside the classroom, sign, marks or many simple phrases in English which were found

in many public places was something usual for English language learners. In short, they were used to having English reading activity whether inside or outside the classroom.

Unfortunately, many EFL learners were unwilling to read because, in a higher level, reading was not only about recognizing the words but also about the ability to comprehend the whole text. But, having a good comprehension of a reading text was a complicated stuff. Many learners found that comprehending a reading text was difficult for several reasons such as the slow speed of reading, the lack of vocabulary and the lack of background knowledge as mentioned by Gebhard (Gebhard, 2017). Some of those intrinsic obstacles also occurred in State Vocational School 6 Bekasi learners as mentioned by one of the teachers in the 12<sup>th</sup> grade based on the interview in the preliminary research. The teacher mentioned that the learners had a lack of vocabulary and background information reading of the text and finally made their motivation in having reading class was low.

Besides the intrinsic obstacles, extrinsic obstacles were also appeared such as the teacher's teaching method and the teacher's awareness of learners' learning style. The teacher mentioned in the interview that she did not use any strategy in teaching reading. During the reading class, she only asked learners to answer the questions directly after reading the text. Their intrinsic problems made her difficult to implement any strategy in comprehending a reading text. Reading the whole text was the way to discover the answers in the reading class. Besides, the teacher did not become aware of the learners' learning style. Learners in SMKN 6 Bekasi had no idea what their learning styles preference was. They do the task in the teaching-learning process without considering their learning style preference.

Those problems finally led the language learners' score into the unsatisfied result whereas reading comprehension was one of the question types in the national examination. Although the syllabus (*Syllabus Class XII KI 4 Curriculum 2013*, n.d.) required them to be able to obtain information from the reading text in the form of the main idea, inference, conclusion and so on the learners' reading comprehension was still at the low level as proven by the mean score which was not more than 60 while the required mean score was 78. Hence, reading comprehension needed extra attention.

To have a good reading comprehension, learning strategies were needed. Learning strategies could be very beneficial for the language learners to obtain reading comprehension. Learning strategies could be used as the aid to comprehend a reading text. According to Davis's observation as cited by Brassell and Rasinski (Rasinski, 2008), a successful reader was able to comprehend many reading texts by combining it with reading comprehension strategies. Learning strategies as stated by O'Malley and Chamot (J. Michael O'Malley and Anna Uhl Chamot, 2012) as the "special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information." It showed that everyone had certain ways that could assist them to comprehend or understand new information from many sources including reading text. The fact that the learning strategies could ease language learners to comprehend a reading text was clear. Moreover, the behaviors or thoughts used were different from one to another person. It was interesting to help the learners to discover their way to comprehend the reading text by showing them their strategies preference in learning. It could be cognitive, metacognitive or socio-affective depending on their tendency in approaching learning activity. Then, the learners could use the strategies that helped them to improve their comprehension of a reading text.

The purposes of this article are to examine if there is a significant relationship between learning strategies and learning styles preference toward learners' reading comprehension, to examine if there is a significant relationship between learning strategies and learners' reading comprehension while learning style preferences are held constant and to examine if there is a significant relationship between learning style preferences and learners' reading comprehension while learning strategies are held constant.

Some studies have investigated learning strategies, learning styles and reading comprehension. Based on the Zohoorian and Baghban (Baghban, 2012) research, learning strategies and learning style preference had a significant impact on one another in which those variables were connected. Next previous research

by Feng, et. al (Yao Feng, 2019), showed that significant correlations were found between the learning styles and strategies, and the academic achievement of Chinese foreign language learners. Furthermore, Hebaishi (Al-Hebaishi, 2012) found that there was a significant relationship between learning strategies and learning style toward female learners' academic performance. Although deeper analysis showed that learning style did not have any relationship with academic performance. It was learning strategies which had significant relationship with academic performance of those samples.

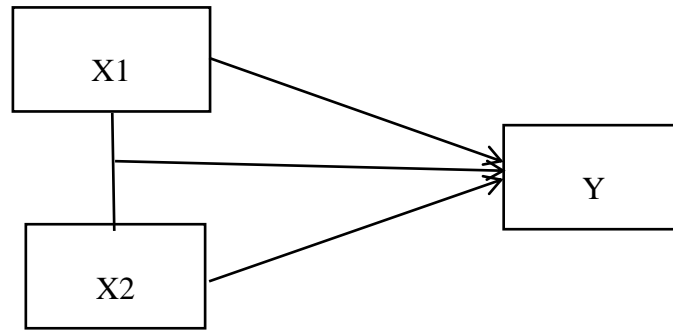
Barruansyah (Barruansyah, 2018) also revealed that language learning strategy gave more influence than learning styles. Moreover, Zare and Noordin (Zare & Noordin, 2011) discovered that there was a strong positive relationship between learning strategies and reading comprehension. Learning strategies link to reading comprehension achievement in the positive way in which the more learners used learning strategies, the better their reading comprehension achievement. Contrary to Zare and Noordin discovery, Molla (Molla, 2015) discovered that learning strategies and reading comprehension did not have any relation at all. She found that there was no positive or negative relationship between them. She concluded that learners' reading achievement did not relate to the learning strategies used by learners. Another previous researches which were conducted by Khademi, et. al. and Alharbi showed a different result in the way learning style relate to reading comprehension. Khademi, et. Al (Khademi et al., 2013) research showed that there was a significant relationship between learning style and reading comprehension. They agreed that learning style and reading comprehension influenced each other.

While Alharbi (Alharbi, 2015) research showed that between learning style and reading comprehension was not connected at all. He believed that learners' learning style had nothing to do with learners' reading achievement. Sharing the same result as Alharbi, Cavosh and Davoudi (Chavosh & Davoudi, 2016) found that social learning style strategies had no relationship with reading comprehension in which only tactile and kinesthetic learning style that had a significant relationship with reading comprehension. From the description of the previous research result, it could be inferred that the relationship among those variables was not vividly stated in one relationship only. There was a possibility to have positive, negative or no relationship at all. Hence, the relationship between learning strategies and learning styles toward learners' reading comprehension was an interesting research to be conducted.

The research of the relationship between learning strategies and learning styles was not something new anymore. Those several previous researches above which had been conducted since many years ago on relationship among those variables were the evidence of the existence issue on it. Though there were many previous studies on learning strategies, learning style and reading comprehension, this research promotes its novelty in which there were no such study that seek the relationship of those all variables. Even from the previous related research above, it could be concluded that the relationship between learning strategies and learning style preference toward reading comprehension was varied. There was positive or even no relation at all among those variables. Then, the non-existed research of the relationship among learning strategy, style and reading comprehension as well as the various result on the relationship of learning strategy and reading comprehension and the relationship of learning strategy and reading comprehension are the gaps that can be fulfilled by this research.

## **Method**

The correlational research design was used to examine the relationship between learning strategies (X1) and learners' reading comprehension (Y) in reading test, to examine the relationship between learning styles (X2) and learners' reading comprehension (Y) in reading test, and to examine the relationship between learning strategies (X1), learning styles (X2) and reading comprehension (Y) in reading test. The correlational research design which was the development of non-experimental research was used in this research since the researcher did not control the independent variables. The relationship of those variables was shown in the following contemplation.



Note:

X1 : Learning Strategies

X2 : Learning Styles

Y : Reading Comprehension

Sample was a subgroup of learners which were chosen to be participated in this research and were taken from the population. Isaac and Michael table were used to determine the number of the sample taken from the population with 5% as the level of significant error. As the result, 161 twelfth graders of SMKN 6 Bekasi were chosen as the sample of this research. In addition, those 161 learners were chosen randomly using simple random sampling. The researcher wrote learners' numbers on separate slips of paper, placed the pieces of paper in a container, shaken the container, and drawn out a slip of paper. The researcher did that action repeatedly until 161 pieces of paper were drawn out. Therefore, the randomization was used and all individuals in the population shared the similar opportunity to be the sample of this study.

The instruments of this research were test and questionnaires. The reading comprehension test used in this research was taken from the Indonesian previous national examination. There were ten texts which had been used in the reading comprehension test in this research. The texts of the reading comprehension test were solely taken from the national examination year 2015/2016. Although the texts were taken solely from the Indonesian national examination, the questions in the test were not. They were adapted by combining the attached questions of the text and the questions taken from the Rubin's criteria in line with the syllabus (*Syllabus Class XII KI 4 Curriculum 2013, n.d.*) used by the researched school. From those 30 questions, eight questions were created by researcher as the addition of the existing questions. The researcher used two questionnaires to collect data of the learners' learning strategies and learning styles preferences. The functions of those questionnaires were to measure learners' learning strategies used and to measure learners' learning styles preference. By having those two questionnaires, the learners' tendency of learning strategies and learning styles could be determined.

In this research, reading comprehension was obtained from the previous national examination using several stages from Brassell and Rasinski (Rasinski, 2008) for silent reading which were: provided the learners with reading text, requested the learners to read the text quietly, told the learners that they would answer some questions about the text and scored one point of each response.

In this case, some indicators were developed to measure learners reading comprehension. There were 30 questions which each represented certain indicator for reading comprehension that stated by Rubin (Rubin, 1993) as shown in the table below.

Table 1: Reading Indicators

No.	Indicators
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1. The student is able to state the meaning of a word context.
  2. The student is able to give the meaning of a phrase or a clause in a sentence.
  3. The student is able to give the meaning of a sentence in a paragraph.
  4. The student is able to recall information that is explicitly stated in the passage (literal-type questions).
  5. The student is able to state the main idea of a paragraph.
  6. The student is able to state details to support the main idea of a paragraph.
  7. The student is able to answer a question that requires “reading between the lines”.
  8. The student is able to draw a conclusion from what is read.
  9. The student can hypothesize the author’s purpose for writing the selection.
  10. The student can differentiate between fact and opinion.
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Learning strategies were obtained from learners’ reference in having the tool to ease the in comprehending a reading text in the area of cognitive, metacognitive and socio-affective. Those learning strategies were examined by spreading the Strategy Inventory for Language Learning (SILL) questionnaire version 7.0 for speakers of other languages learning English which was adopted from Oxford (Oxford, 1990). The questionnaire used was showed in the appendix 3. There were 35 questions which were divided into 14 for eliciting the cognitive strategies, nine questions for metacognitive strategies and 12 questions for socio-affective strategies. From those 35 questions, eight questions were formed in the negative one to make the students aware of the questions and the rest used exactly the same forms which were positive.

Furthermore, to obtain the quantitative data, Likert scale was used on the questionnaire with range 1 to 5. There were several optional answers in the questionnaire which was shown on the tables below in which the score used were different for the positive and the negative statement.

*Table 2: Scoring System of SILL for Positive Statement*

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Score	Response	Meaning
1	Never or almost never true of me	The statement is very rarely true of you
2	Usually not true of me	The statement is true less than half the time
3	Somewhat true of me	The statement is true of you about half the time
4	Usually true of me	The statement is true more than half the time
5	Always or almost always true of me	The statement is true of you almost always

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*Table 3: Scoring System of SILL for Negative Statement*

Score	Response	Meaning
5	Never or almost never true of me	The statement is very rarely true of you
4	Usually not true of me	The statement is true less than half the time
3	Somewhat true of me	The statement is true of you about half the time
2	Usually true of me	The statement is true more than half the time
1	Always or almost always true of me	The statement is true of you almost always

After getting the result of the learners’ statement toward the learners’ learning strategies concept by using checklist in the optional answer, the researcher used the overall average to know how often the learners used strategies for learning English. It means that the higher learners learning strategies score, the more often the learners use the strategies. Here is the key to understand those averages (Oxford, 1990).

Table 4: The Interpretation of the SILL Questionnaire

Level	Interpretation	Scale
High	Always or almost always used	4.5 to 5.0
	Usually used	3.5 to 4.4
Medium	Sometimes used	2.5 to 3.4
Low	Generally not used	1.5 to 2.4
	Never or almost never used	1.0 to 1.4

Meanwhile each part of SILL represented a certain group of learning strategies with the averages of each part showed which group of strategies the learners used most of the time. In other words, it was used to elicit the learners’ learning strategies tendency through the information from the questioner given.

Learning styles preference were obtained from the learners’ reference in having the way to get the information in the area of visual, auditory, kinesthetic, tactile, individual and social learning styles preference. Those learning styles were elicited by spreading the Perceptual Learning Style Preference Questionnaire (PLSPQ) which was adopted from Reid (Reid, 1984). It was used to elicit the learners’ learning styles and the valid questionnaire was showed in the appendix 4. To ease the learners in filling the questionnaire, checklist technique was used to elicit information about what their learning style was. There were 10 questions which were divided into five questions for each learning styles preference and they were individual and social learning styles. From those 10 questions, 5 questions were formed in the negative one to make the students aware of the questions.

In addition, to obtain the quantitative data, Likert scale was used on the questionnaire. There were several optional answers in the questionnaire which were range from strongly agree to strongly disagree with range from 5 to 1 depend on whether the statements were positive or negative as shown in the table below.

Table 5: Scoring System for PLSPQ

Score	Positive Statement	Negative Statement
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5	Strongly Agree	Strongly Disagree
4	Agree	Disagree
3	Undecided	Undecided
2	Disagree	Agree
1	Strongly Disagree	Strongly Agree

The relationship between learning strategies and reading comprehension, the relationship between learning styles and reading comprehension and the relationship among learning strategies, learning styles and reading comprehension were examined using multiple regression as the technique to analyze the data. Before analyzing the data using multiple regression with the aid of SPSS, the researcher examined the normality distribution of those variables score as well as the linearity test of those variables.

### Results and Discussion

In this research, there are three types of data: the scores of learners' reading comprehension (Y), the mean of learners' learning strategies (X1) and the mean of learners' learning style preference (X2). The researcher compiled the data and computed those data using descriptive statistics analysis and SPSS 22. It was presented in the form of frequency distribution and histogram.

#### 1. Reading Comprehension (Y)

Based on the validated reading comprehension tests which were given to the 12<sup>th</sup> grade learners of SMKN 6 Bekasi, the researcher obtained the data of the learners' reading comprehension (Y) scores. The statistical result shows that the reading comprehension test involved 161 samples with 23 was the lowest score and 96 as the highest score in the range of 73. The mean was 61.61, the median was 60.00, the mode was 56, the variance was 247.801, and the standard deviation was 15.742.

The distribution of learners' reading comprehension scores can be seen in the table of frequency in the appendix and the tendency of the score distribution can be seen in the following histogram.

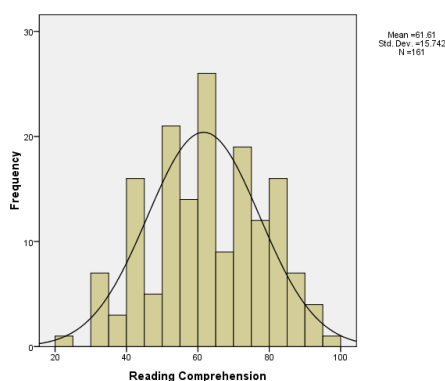


Figure 1: Histogram of Variable Y

Moreover, from the histogram above it can be seen the most frequent score gained by the learners on their reading comprehension test is 56 and 60 which were achieved by 14 learners for each score. The second frequent score is 50 which were achieved by 13 learners. The third frequent score is 63 and 76 which were achieved by 12 learners for each score. Those score shows that the learners' score were spread from the low score to the high score.

#### 2. Learning Strategies (X1)

The following data was the score of the learners' learning strategies (X1). The result was taken from the Strategy Inventory of Language Learning questionnaires which had been validated before and were

distributed to 161 learners as the samples of this research. From the result, it was found that the lowest score of learners' learning strategy was 71 and the highest score was 148 with 77 as the range. The mean of the score was 109.70, the median was 109, the mode was 108, the standard deviation was 15.702, and the variance was 246.548.

The score of the learners' learning strategy can be seen in the table of frequency in the appendix while the tendency of the score distribution would be shown in the following histogram.

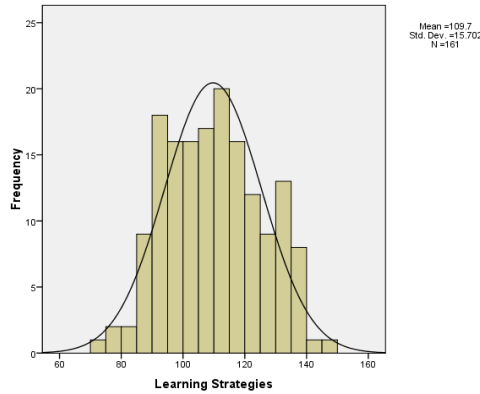


Figure 2: Histogram of Variable X1

Based on figure 4.2, it is found that the most frequent score for learning strategies scale gained by the learners is 108 which were achieved by 8 learners. The second most frequent score is 91, 98, 112 and 130 which were achieved by 6 learners for each. The third most frequent score is 94, 96, 113, 116, 117 and 120 which were achieved by 5 learners for each. Those frequency distributions show that the distributions of the learning strategies mean score were spread from the low to the high level of the learning strategies use.

Furthermore, it is found through the overall means of each strategy that the learners' usage of metacognitive strategies is more frequent than other two strategies which are cognitive and socio-affective. It is proved by the mean of metacognitive strategies which is higher than other strategies. It means that the learners have tendency to use metacognitive strategies rather than others. The ranks for the three strategies are shown in the table below.

Table 6: The Mean Score of Learning Strategies

No	Learning Strategies	Mean
1.	Cognitive Strategies	3.047
2.	Metacognitive Strategies	3.366
3.	Socio-Affective Strategies	3.063

### 3. Learning Style Preferences (X2)

Learners' learning style preferences scores which were obtained from the mean of the learning style preferences questionnaires were taken as the data of this research. It had been validated and spread to 161 learners with the result obtained from the SPSS version 22 computation showed that the lowest score was 0 and the highest score was 1 with range 1. Furthermore, the mean of the score was 0.80, the median was 1.00, the mode was 1, the standard deviation was 0.400, and the variance was 0.160. The score of the learners' learning strategy can be seen in the table of frequency in the appendix while the tendency of the score distribution would be shown in the following histogram.



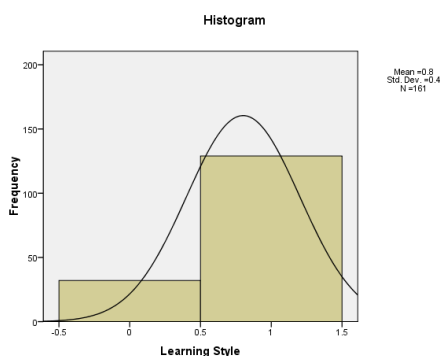


Figure 3: Histogram of Variable X2

The figure above shows the most frequent learning style preferences gained by those learners are 1 (group learners) which were gained by 129 learners while 0 (individual learners) were gained by 32 learners. Overall, from the statistical analysis it is found that the learners’ usage of group learning style preferences is greater than other individual learning style preferences. It means that the learners have tendency to have group work rather than individual work in doing their task.

Before testing and analysing the research data, the researcher tested the analysis assumption of the data through the normality and linearity test using SPSS version 22.

**1. Test Normality**

The normality test of the data was tested using Non-Parametric Kolmogorov-Smirnov. This test was used to assure that the data from the sample were normally distributed or not. Two hypotheses were used to determine the normality of the data which were:

$H_0$  : The data distribution is normal

$H_1$  : The data distribution is not normal

The data could only be said as normally distributed if p-value resulted from the test is higher than 0.05 meant that  $H_0$  is accepted. The result of the normality test calculations for each variable is presented as follow.

**a. Reading Comprehension (Y)**

For the normality test of the learners’ reading comprehension, it is showed clearly in the table below:

Table 7: The Normality Test of Variable Y

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Reading Comprehension	.069	161	.057	.984	161	.065

**a. Lilliefors Significance Correction**

Based on the table 4.7, it is found that p-value for variable reading comprehension is 0.057. It means that p-value is higher than  $\alpha$  0.05. The result indicates the acceptance of  $H_0$  in which it can be said that the variable distribution of learners’ reading comprehension (Y) is normal.

**b. Learning Strategies (X1)**

The result of the normality test of the learners’ learning strategies is described in the table below:

Table 8: The Normality Test of Variable X1

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Learning Strategies	.064	161	.200*	.986	161	.119

a. Lilliefors Significance Correction

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

The result of the normality test above revealed that p-value of learning strategies was 0.200. It showed that p-value is higher than  $\alpha$  0.05 which means  $H_0$  is accepted. It can be concluded that the variable distribution of learners' learning strategies ( $X_1$ ) is normal.

**c. Combination of Reading Comprehension (Y), Learning Strategies ( $X_1$ ) and Learning Style Preferences ( $X_2$ )**

The result of the normality test of overall variables is described in the table below:

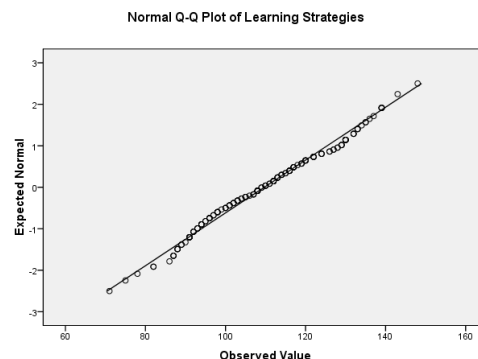
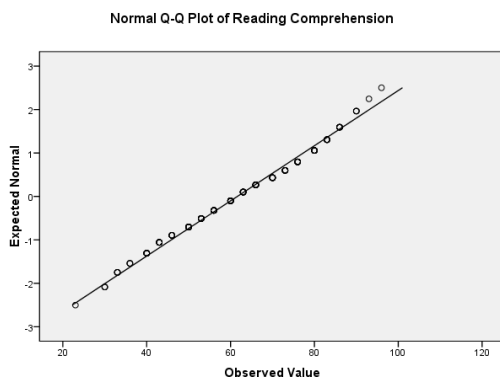
Table 9: The Normality Test of Y,  $X_1$  and  $X_2$

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.055	161	.200*	.976	161	.007

a. Lilliefors Significance Correction

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

Based on the table above, it was found that p-value for all variables in the unstandardized residual is 0.200. It means that p-value is higher than  $\alpha$  0.05. The result indicates the acceptance of  $H_0$  in which it can be said that the variable distribution of combination of all variables is normal. To support the Kolmogorov-Smirnov test that shows all those three groups are normal, the normality plot below shows that the dots are closed to the track line which represented the plots as perfectly normal in distribution. The straight line on the graph is the null hypothesis of normality where the dots follow closed to it.



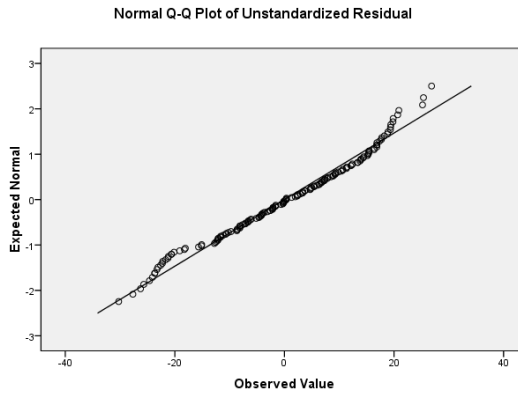


Figure 4: The Normality Plot

By seeing the three plots of the data groups above, the alternate hypothesis ( $H_1$ ) is rejected. In other words, it can be concluded that the data distribution of the samples are normally distributed.

**2. Test Linearity**

The purpose of testing the linearity is to discover whether the data of the variables are linear or not. The result of the test is showed in the following table subsequently:

Table 10: Linearity Test of Variable Y and X1

ANOVA Table			Sum of Squares	df	Mean Square	F	Sig.
Reading Comprehension Learning Strategies	Between * Groups	(Combined)	19675.741	54	364.366	1.934	.002
		Linearity	9900.631	1	9900.631	52.546	.000
		Deviation from Linearity	9775.110	53	184.436	.979	.525
	Within Groups		19972.383	106	188.419		
	Total		39648.124	160			

From the table 4.5, it can be seen that the mean of reading comprehension and learning strategies are linear. It is showed by the value of the linearity which is in the significance level of 0.00. It means that p-value is smaller than  $\alpha$  0.05. In conclusion, all of the variables in this research are linear one another.

**3. The Statistical Hypotheses**

Based on the formulation of the research questions and the hypotheses, here were the statistical hypotheses which were tested in this research.

1.  $H_0: \beta_1 = \beta_2 = 0$  There are no significant relationships between the combination of learning strategies and learning style preferences toward learners' reading comprehension

	H <sub>i</sub> : At least one parameter is not 0	There are significant relationships between the combination of learning strategies and learning style preferences toward learners' reading comprehension
2.	H <sub>0</sub> : β <sub>1</sub> = 0	There is no significant relationship between learning strategies and learners' reading comprehension while learning preferences is held constant.
	H <sub>i</sub> : β <sub>1</sub> ≠ 0	There is a significant relationship between learning strategies and learners' reading comprehension while learning preferences is held constant
3.	H <sub>0</sub> : β <sub>2</sub> = 0	There is no significant relationship between learning style preferences and learners' reading comprehension while learning strategies is held constant.
	H <sub>i</sub> : β <sub>2</sub> ≠ 0	There is a significant relationship between learning style preferences and learners' reading comprehension while learning strategies is held constant

**4. Testing the Research Hypotheses**

The research presents three hypotheses to be tested. The use of testing the hypotheses is to obtain the conclusion whether the research hypotheses are supported by empirical data in the research field. The following are the tests of three hypotheses which have been formulated in chapter 2.

**a. The Relationship between Learning Strategies (X<sub>1</sub>), Learning Style Preferences (X<sub>2</sub>) and Reading Comprehension (Y)**

After organizing the result of the test and calculating those result using SPSS version 22, the researcher used Correlation Product Moment to see how the variables relate to one other and Multiple Regression Analysis to test the relationship between the two independent variables with dependent variable. Here were the results of the analysis:

*Table 11: Model Summary of the Relationship between Learning Strategies and Learning Style Preference toward Learners' Reading Comprehension*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.500 <sup>a</sup>	.250	.241	13.719

a. Predictors: (Constant), Learning Style, Learning Strategies

b. Dependent Variable: Reading Comprehension

The above table shows that the multiple correlation coefficient R was 0.500. It means that there is a moderate positive relationship among those variables which also showed in the figure 4.6 below. Through the direction of the scatter plot pattern, it indicates the positive relationship of those variables. While to know the degree of the relationship, the correlation coefficient R 0.500 shows that there is a moderate relationship among those variables.

With R<sup>2</sup> is 0.250, it can be assumed that 25% of variability in learners' reading comprehension can be explained by its linear relationship with the learning strategies and learning style preferences while there are 75% other factors which influenced reading comprehension cannot be explained. Moreover, to test the relationship of the variables researched, the researcher uses table 4.7 as follows.

*Table 12: Test of Overall Significance*

ANOVA<sup>b</sup>

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	9912.269	2	4956.135	26.334	.000 <sup>a</sup>
	Residual	29735.855	158	188.202		
	Total	39648.124	160			

a. Predictors: (Constant), Learning Style, Learning Strategies

b. Dependent Variable: Reading Comprehension

As declared by the output above, it is found that the *F* value is 26.334 with significance value of 0.000 (p-value = 0.000). This result can be used to test the overall significance of those variables as the way to seek the relationship among those variables in which the researcher has proposed the hypotheses subsequently:

H<sub>0</sub>1: There is no significant relationship between the combination of learning strategies, learning styles preference and learners' reading comprehension.

H<sub>1</sub>1: There is a significant relationship between the combination of learning strategies, learning styles preference and learners' reading comprehension.

The output of SPPSS version 22 shows that significance value is 0.000 which is less than significance level 0.05 (p-value = 0.000 < α = 0.05). Therefore, H<sub>0</sub>1 is rejected and H<sub>1</sub>1 is accepted, for this reason it can be interpreted that there is a significant relationship between the combination of learning strategies, learning style preferences and learners' reading comprehension. In other words, learning strategies and learning style preferences all together influence reading comprehension.

The next consideration to support the result of regression analysis is the scatterplot which is presented in the figure below. From the figure below, we can see that the dots are scattered. It indicates that the data meet the assumptions of the errors being normally distributed and the variances of the residuals being constant.

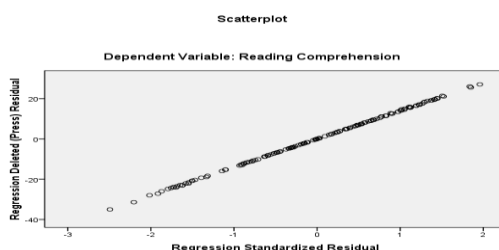


Figure 1: Scatterplot of Regression Analysis Result

**b. The Relationship between Learning Strategies (X<sub>1</sub>) and Reading Comprehension (Y)**

For analyzing the relationship between X<sub>1</sub> and Y, regression analysis was still used by the researcher. The result of the data analysis would be used to test the second hypothesis that had been proposed as follow.

H<sub>0</sub>2: There is no significant relationship between learning strategies and learners' reading comprehension while learning style preferences is held constant.

H<sub>1</sub>2: There is a significant relationship between learning strategies and learners' reading comprehension while learning style preferences is held constant.

Table 13: Test of Individual Significance

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	6.986	7.768		.899	.370	-8.356	22.328
	Learning Strategies	.503	.070	.502	7.235	.000	.366	.640
	Learning Style	-.678	2.727	-.017	-.249	.804	-6.064	4.707

a. Dependent Variable: Reading Comprehension

Looking at the table 4.12, it shows that the p-value written on the table for learning strategies is 0.000. Due to the p-value is lower than  $\alpha$  0.05, it can be decided that the null hypothesis ( $H_{02}$ ) is rejected and alternative hypothesis ( $H_{12}$ ) is accepted. It can be summarized that there is a significant relationship between learning strategies and learners’ reading comprehension while learning style preferences is held constant.

To strengthen the result of the relationship between learning strategies and reading comprehension, the correlation table below can be used.

Table 14: The Result of Pearson Correlation of All Variables

		Reading Comprehension
Learning Strategies	Pearson Correlation	.500
	Sig. (2 tailed)	.000
Learning Style Preferences	Pearson Correlation	.039
	Sig. (2 tailed)	.310
	N	161

Based on the table above, it can be interpreted that between learning strategies and reading comprehension there is a significant relationship between those two variables since the significance value is 0.000 which is less than significance level 0.05. Furthermore, for the estimated regression equation the researcher used the formula as follow.

$$\hat{y} = b_0 + b_1 X_1 + b_2 X_2$$

Using coefficient table above, it is found that  $b_1$  is 0.503. It means that if learning strategies increases by 1 point, the learners’ reading comprehension will increase 0.503 point while learning style preferences is held constant. It means that the increasing of learning strategies would also followed by the increasing of reading comprehension.

Moreover, since the relationship among learning strategies and reading comprehension is in the positive relationship which means the learning strategies used by those learners can give impact to their reading comprehension, knowing the learning strategies that can impact learners’ reading comprehension the most would be interesting. Therefore, the table below can be used to discover the distribution of the learning strategies used by the learners.

c. The Relationship between Learning Style Preferences ( $X_2$ ) and Reading Comprehension ( $Y$ )

For analyzing the relationship between X2 and Y, regression analysis was still used by the researcher. The result of the data analysis would be used to test the second hypothesis that had been proposed as follow.

- H<sub>03</sub>: There is no significant relationship between learning style preferences and learners' reading comprehension while learning strategies is held constant.
- H<sub>3</sub>: There is a significant relationship between learning style preferences and learners' reading comprehension while learning strategies is held constant.

Table 15: Test of Individual Significance

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	6.986	7.768		.899	.370	-8.356	22.328
Learning Strategies	.503	.070	.502	7.235	.000	.366	.640
Learning Style	-.678	2.727	-.017	-.249	.804	-6.064	4.707

a. Dependent Variable: Reading Comprehension

Looking at the table 4.15, it shows that the p-value written on the table for learning style preferences is 0.804. Due to the p-value is higher than  $\alpha$  0.05, it can be decided that the null hypothesis (H<sub>03</sub>) is accepted. It can be summarized that there is no significant relationship between learning style preferences and learners' reading comprehension while learning strategies is held constant. To strengthen the result of the relationship between learning style preferences and reading comprehension, the correlation table below can be used.

Table 16: The Result of Pearson Correlation of All Variables

		Reading Comprehension
Learning Strategies	Pearson Correlation	.500
	Sig. (2 tailed)	.000
Learning Style Preferences	Pearson Correlation	.039
	Sig. (2 tailed)	.310
	N	161

Based on the table above, it is found that the significance value of learning style preferences and reading comprehension is 0.301 in which it is greater than significance level 0.05. It can be summarized that there is no significant relationship between learning style preferences with learners' reading comprehension.

Furthermore, for the estimated regression equation the researcher used the formula as follow.

$$\hat{y} = b_0 + b_1 X_1 + b_2 X_2$$

Using coefficient table above, it is found that b<sub>2</sub> is -0.678. It means that group learners scored 0.678 lower than individual learners in their reading comprehension. It means that learners who are individual tend to have higher score than group learners in their reading comprehension. Based on the test of the three hypotheses that have been done, it was found that not all variables are significantly related. The following are the further discussions of the result of the three hypotheses tests.

**1. The Relationship between Learning Strategies (X<sub>1</sub>), Learning Style Preferences (X<sub>2</sub>) and Reading Comprehension (Y)**

Based on the finding of the first hypothesis testing, it indicates that the relationship among the variables is positive and moderate. It is 25% of the variability in learners' reading comprehension can be explained by learning strategies and learning style preferences, meanwhile 75% of variability can be explained by other factors such as word reading (decoding), fluency (accuracy and speed of reading), vocabulary (knowing what the words mean in context) and world knowledge (having sufficient background knowledge to benefit from reading text) that was stated by Klingner et. al.(Klingner, Janette K., 2015). Then, the finding from ANOVA table revealed that p-value was 0.000 which was lower than  $\alpha$  0.05. Thus, it can be interpreted that there is significant relationship between the combination of learning strategies and learning style preferences toward learners' reading comprehension.

The result above is supported by some theories that related to the researched variables such as Oxford(Celce-Murcia, 2013) mentioned that learning style and strategies together can influence the learners' ability in having specific instruction. In line with Oxford, Cohen(Cohen, 2015) also stated that the learning style awareness would benefit the learners in determining their strategies preferences. Since as stated by Brown and cited by Cohen (Cohen, 2015), learners' learning style and other personality variables (anxiety and self-concept) are straightway attached to learning strategies chosen by learners. Similar to Brown, Leaver et. al., (Leaver, Betty Lou, Madeline Ehrman, 2005) stated that learning styles and strategies embed each other because there is a possibility that a learners' learning strategies used caused by their specific learning style preferences. Furthermore, Ghada and Rima as cited by Khademi et. al.(Khademi et al., 2013), mentioned that the combination of learning styles and learning strategies are significant factors in affecting the learners' learning outcome or achievement. Those theories points into a conclusion that combination of learning style and strategies can influence the result of learning outcome.

Moreover, from the previous research related to learning strategies, learning style preferences and reading comprehension was done by several researchers such as Baghban (Baghban, 2012), Feng, et. al. (Yao Feng, 2019) and Barruansyah (Barruansyah, 2018) who found that learning style and strategies used by the learners has relationship each other. It was concluded that learning strategies has significant impact on learning styles. Furthermore, Khademi et. al.(Khademi et al., 2013), found that the familiarity of learning style used by learners would employ the proper learning strategies that matches to that learning style that may lead to the learners' success in reading comprehension achievement. Another finding from Hebaishi (Al-Hebaishi, 2012) showed that there was a significant relationship between learning style, strategies and learners' achievement in English as Foreign Language context. That having learning style and strategies has significant relationship toward learning achievement showed the result of this research was supported by the findings of other researchers in almost in the similar variables. Both theories and previous findings are showed that there is significant relationship between learning strategies, learning style and learners' achievement. Those theories and previous findings are able to support the result of this research which found that there is a significant relationship between learning strategies and learning style preferences toward learners' reading comprehension.

## **2. The Relationship between Learning Strategies (X<sub>1</sub>) and Reading Comprehension (Y)**

Based on the finding of the second hypothesis testing it is found that the p-value is 0.000. It means that the p-value 0.000 is smaller than  $\alpha$  0.05. It can be summarized that there is a significant relationship between learning strategies and reading comprehension controlling for learning style preferences. From the test of linearity table, it can be concluded that the regression equation of Y on X<sub>1</sub> is linear. While from the estimated regression equation, it is found that b<sub>1</sub> is 0.503. It means if the learners' learning strategies increases by 1 point, their reading comprehension will increase 0.503 point controlling for learning style preferences.

That result is supported by some theories that related to the relationship between learning strategies and reading comprehension. According to Alderson (Anderson, 2000), unconsciously learning strategies were implemented by learners in comprehending reading passage. Furthermore, Nunan as cited by Thompson (Thompson, 2005) stated that it is important for learners to know the strategies in learning



because the awareness can make learners' learning more effective. More detail, Brassel and Rasinki (Rasinski, 2008) mentioned learners who had habit to use single or multiple strategies to create meaning of the text that they read can be categorized as proficient readers. Klingner et. al. (Klingner, Janette K., 2015), also mentioned that having strategies that have been proved effective to improve reading comprehension can be helpful to improve the learners' reading comprehension. Those theories point out that the more frequent learning strategies used by learners, the better their reading comprehension.

Furthermore, previous research findings would also be useful to discover the relationship between learning strategies and reading comprehension. The research which was conducted by Hebaishi (Al-Hebaishi, 2012) found that there was a significant relationship between learning strategies and female academic achievement. Zare and Noordin also found that there was a strong positive correlation between learning strategies and reading comprehension achievement.

Both theories and previous findings are showed that there is significant relationship between learning strategies and reading comprehension. Those theories and previous findings are able to support the result of this research which found that there is a significant relationship between learning strategies and learners' reading comprehension. The result of this research that learning strategies give influence for learners' reading comprehension can be caused by a reason that learning strategies is a tool that can facilitate the teaching learning process. Learning strategies used by learners to ease them to understand the reading text. Learning strategies used consciously or not by learners give influence on their reading comprehension. As the result, the more learning strategies used by the learners, the better their reading comprehension.

### **3. The Relationship between Learning Style Preferences (X<sub>2</sub>) and Reading Comprehension (Y)**

Based on the finding of the third hypothesis testing it is found that the p-value is 0.804. It means that the p-value 0.804 is greater than  $\alpha$  0.05. It can be summarized that there is no significant relationship between learning styles and reading comprehension while learning strategies is held constant. While from the estimated regression equation, it is found that  $b_2$  is -0.678. It means that group learners scored 0.678 lower than individual learners in their reading comprehension. It means that learners who are individual tend to have higher score than group learners in their reading comprehension.

That result is supported by some theories that related to the relationship between learning style preference and reading comprehension. Klingner et. at. (Klingner, Janette K., 2015), mentioned that factors which can improve reading comprehension are phonics, fluency, vocabulary and learning strategies. It can be inferred that learning style has nothing to do with reading comprehension.

There are several previous related researches that the findings showed learning style and reading comprehension has no relationship. Hebaishi (Al-Hebaishi, 2012) found that learning style and learners' academic achievement had lack of significant relationship. Besides, Alharbi (Alharbi, 2015) also found that there is no significant relationship between learning style and reading comprehension. In addition, Cavosh and Davoudi (Chavosh & Davoudi, 2016) also found that there is no significant relationship between social learning styles with reading comprehension. Finally, the finding in this research that there is no significant relationship between learning style and reading comprehension is supported by theories and previous related research. The fact that learning style does not influence the learners' reading comprehension can be caused by the use of learning style itself. Learning style is only used to set the learners' way in approaching the teaching learning process. It has no direct contribution during the teaching learning process. In other words, learning style is not used by learners to approach the learning process and is not used to help them in doing the activity of learning. Therefore, learning style has no relationship with reading comprehension.

### **Conclusion**

This research was a correlational research which was conducted in SMKN 6 Bekasi. The purpose of this research is to examine the relationship between learning strategies and learning style preferences toward learners reading comprehension. The result of this research can be obtained by comparing the

score of Strategy Inventory for Language Learners questionnaires, Perceptual Learning Style Preferences questionnaires and Indonesian National Examination (UN) reading test.

After the researcher obtained and analyzed the data quantitatively, the researcher compared the findings with theories and previous related research that link to the variables to strengthen the result of hypotheses test. The results of hypotheses test draw several conclusions as follow. The assumption that learning strategies and learning style has relationship with reading comprehension was accepted in this research. Due to the result of hypotheses testing, it was found that there is significant relationship between learning strategies and learning style preferences toward learners' reading comprehension. The result of hypotheses testing on the relationship between learning strategies and reading comprehension showed that there is a significant relationship between those two variables. It means that the more learners use learning strategy, the higher their reading comprehension result. The researcher's assumption that there is significant relationship between learning style preferences and reading comprehension must be rejected. Since the statistical analysis showed that there is no significant relationship between learning style preferences and reading comprehension. It means that the learning style preferred by learners has nothing to relate to their reading comprehension.

Based on the conclusion above, the researcher would like to give some suggestions for the learners, the English teachers and other researchers. The learners should have learning strategies consciously or unconsciously to support their reading comprehension. But it is better for them to use the learning strategies consciously since it can help them in comprehending the reading text in various ways. They can have cognitive, metacognitive or socio-affective strategies based on the learning situation and their style preferences. Furthermore, the learners need to be aware on their learning style preferences because it may help them to identify the proper learning strategies for them. Finally, the learning strategies used by learners combined with appropriate learning style preferences can improve the learners' reading comprehension as there is a significant relationship among them. The English teachers should motivate and give opportunity for learners to identify their learning style preferences as well as to choose their learning strategies because it can benefit learners' reading comprehension ability. In addition, the English teachers should select the activities in the classroom that fit with his/her learners to create the positive and joyful of teaching learning process in reading comprehension class. As the result, the learners' reading comprehension could be improved. There are many factors that influence the learners' reading comprehension. Two of them are learning strategies and learning style preferences which were discussed in this research. The researcher hopes that other researchers will discuss other factors that help the learners to improve their reading comprehension. In addition, the researcher also hopes that the result of this study can be used as a reference research on ways improving the learners' reading comprehension.

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