

LEARNING STYLES, SELF-REGULATION AND READING ACHIEVEMENT: EVIDENCE FROM INDONESIA

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Abstract: The purpose driving the study is to investigate and explain the relationship between students' learning styles, self-regulation and reading achievement of Islamic Junior High Schools. Eighty students purposively chosen participated in the study. Sixty five are female students, and fifteen were male students. Index of Learning Style (ILS), designed by Felder-Silverman, was employed to elicit data on learning style preferences. It has four bipolar dimensions: active-reflective, sensing-intuitive, verbal-visual, and sequential-global. To measure students' self-regulation consisting of 32 questions was used, while reading achievement was measured through reading test. The data were analysed through Eta correlation test and Product moment. The finding reveals that active and sensing learning styles gained the highest total number of students, each with 27 students. The lowest is sequential with only 2 students. Furthermore, of eighty respondents, there are three in *very good* category of self-regulation ability, while the rest is in *good* self-regulation. None is in either *poor* or *fair*. Statistically, the findings reveal that there is a significant relationship between learning styles and reading achievement among Islamic Junior High School Students; there is no significant correlation between self-regulation and reading achievement; and there is no significant correlation between self-regulation and reading achievement.

Keywords: correlation; learning styles; self-regulation; reading achievement

A. Introduction

Research studies related to academic self-regulation was very popular in 1980s. It was directed to find out answers of questions of how learners become the director and responsible of their own learning process (Zimmerman, 1989). Self-regulation is learners' ability to determine and formulate their own thought, feeling and actions that result in gaining one's goals utilizing some information that an individual has acquired from previous performances (Zimmerman, 2000; 2002). Therefore, self-regulated learners perceived and believe that learning is a proactive activity, needs self-beginning motivational and behavioral processes in addition to metacognitive ones (Zimmerman, 1989). When learners could do these all, they can be manager and director of their own learning instead of becoming objects of learning experiences.

Furthermore, previous research studies found out that learning styles have been found as indicators of academic success and curriculum design guidelines (İlçin et al., 2018). Hence, the learning style of a student has a substantial influence on academic success. Every kid has a unique learning style. It's because people have different areas of interest, perceptions, and styles of learning the subject.

Since then, therefore, a great change has happened in the field of second/foreign language learning and teaching in which individual differences become main concern of research studies. One of those differences is learning styles. This shift paid more attention individual differences, roles, and responsibilities, in order to attain more student-centeredness, and eventually gain learning autonomy as the end and ultimate goal of education. Learning autonomy, according to Oxford (2003), is condition in which learners are self-regulated that can regulate their learning, thoughts, as well as their actions. Therefore, 'self-directness', 'self-control' and 'autonomy' were very popular (Bandura, 1997). It means that learners who can already direct their own learning already become autonomous learners Najeeb, (2013).

There are various hypotheses concerning learning styles. The concept of learning styles relates to the idea that different people learn in various ways. The notion of learning styles has slowly gained traction in recent decades Pashler et al., (2008). Furthermore, Felder and Silverman defines learning style as the unique strengths and preferences in the ways individuals take in and process information (Felder & Spurlin, 2019). Additionally, Individuals' possess preferences along five bipolar dimensions, according to theory: Active-Reflective, Sensing-Intuitive, Verbal-Visual, Sequential-Global, and Intuitive-Deductive.

Moreover, review of available reputable research studies have indicated that there has been increased interest in reading comprehension for EFL/ESL students (Grabe & Stoller, 2001). Kucer (2005) states that reading is a complicated and determined sociocultural, cognitive, and linguistic process in which individuals utilize their information about the topic and also culture at the same time to create the meaning of the text. In addition, other studies have dealt with effective ways for improving reading comprehension. Those studies found out that success of learners' academic life and especially reading comprehension is also related to motivational variables (e.g., Khajavi & Abbasian, 2013; Rujani, 2019; Setiowati, 2019; Sulistyawati & Paulus, 2022). Therefore, identifying any variable which contribute to motivational variables is of paramount importance to be recognized.

Available research studies have just dealt with two variables. They can be classified into two. The first is group are those interested in examining the relationship between learning styles and reading comprehension skills. The second are those interested in researching how self-regulation and reading comprehension ability are related.

However, from these various studies available, there are no researchers who conduct research study on how learning styles, self-regulation and reading ability are correlated. From several research studies that have been conducted, researchers have focused more on the importance of learning style and self-regulation in developing language skills. In fact, multiple connection among variables does exist, and this is worth investigating to get to know this complex relationship. Therefore, the researchers are interested in examining the multiple correlation among learning styles, self-regulation and reading comprehension skill.

1. Self-regulation

Self-regulated learners are considered to be more superior in their purposes, more precise in their behavior, and more adaptive and innovative in their learning strategies (Zimmerman & Schunck, 2014). They point out further that learners with better self-regulation are better in setting their learning objectives, in determining and employing learning strategies, in monitoring as well as in assessing their learning outcome. They can create conducive learning environment, look for learning assistance, and adjust any strategy so that they become more effective to achieve learning goals.

It is important to note that self-regulation is not an intellectual capability. In this instance, psychologists and theoreticians believe that learning is a complex as well as multidimensional. It involves individual cognition and emotion elements, and behavioral as well as environmental aspects (Zimmerman, 2008). To be self-regulated, learners must integrate and make use of these all simultaneously. Therefore, learning becomes dynamic, moderate and cognitive (Erginer, 2014). Related studies in the field of self-regulated learning is published (Safari & Hejazi, 2019; Zimmerman & Schunk, 2004; Nikoopour & Khoshroudi (2021); Singh, et al (2015).

Based on social cognitive theory, Pintrich (2000) stated that there four stages in the theoretical framework of self-regulation. Those for are planning, self-monitoring, control and evaluation. For Pintrich, these four stages are cyclical in the sense that they are ordered step by step. However, the sequences are not hierarchical or linear. It means that these four stages can be synchronical and dynamical, All academic tasks do not necessarily involve self-regulation.

Zimmerman (2002) pointed out that there are three aspects of being self-regulated learners. They are active learners in the level of metacognitive motivational and behavioral aspects. It has been taken for granted self-regulated learners are whose with high-ability as well as high-performance. On the contrary, learners with less self-regulation are considered poor learners. In this instance, Corno, 2001; Weinstein, et al, 2000; Winne & Perry, 2000; Zimmerman, 2002, listed the features and characteristics between learners with high self-regulation and with low self-regulation.

2. Reading Skill

Reading skill has been taken into account to be key factor for the success of EFL learners, not only in education, but also in social lives. Sajadi & Oghabi, (2011) asserted that reading is basic and most essential in the success of academic life. Furthermore, the process of reading involves activation of relevant knowledge and language skills so that there is information exchange. In reading, readers must focus on reading materials as well integrate background knowledge in order to comprehend reading materials. In fact, reading is an interaction between reader and text, or between writer and reader.

It is obvious that readers possess various purposes in reading. Alderson (2000) and Urquhart and Weir (1999) identified two purposes of reading. Firstly, reading for finding information. Such reading includes a large number of reading materials in which readers are looking for a particular fact or information. In this purpose, readers look the text at glance for a particular word, name, date, phrase, form, or number. This reading technique is called scanning. On the other hand, when

readers rapidly moves the eyes over the text in order to find the gist of the text, they do skimming technique.

Secondly, reading for learning. Readers do not only look for the gist of the text, but also look for details of the text and organization framework. They carefully look for every details and meaning, where the meaning is sometimes expressed implicitly in which readers need to draw conclusion from the reading text. Reading needs to look for writer's attitudes, feelings, and motivation of writing the text.

Despite the two classification of reading above, people commonly read for general comprehension. This is called reading for understanding. In this instance, readers seek for main ideas as well as details. They read with normal speed when they read for general main ideas, yet they slow down the speed they are interested in detailed information (Alderson, as cited in Grabe & Stoller, 2001, p. 50).

Hence, it is for the sake of comprehension that people start to read. There are various texts in daily life to read. Whatever the reason to read, people interact with reading materials to determine the purpose of the text, to find information and messages of the text. It is for this reason that students in Senior High School must learn reading comprehension in order to understand every text that they may encounter in their daily life.

3. Learning Styles

Each learning style has its own activities and characteristics, but they all have the same purpose. Learning styles can be classified into four dimensions: sensing, visual, active and sequential (Felder & Spurlin, 2019). As a result, we may say that students' learning style takes an important part on academic performance, especially junior high school school students. It is because adolescent children have behavior difficulties and find it difficult to stay engaged in learning, this problem occurred in junior high school students who are still in the adolescent stage. Therefore, this problem will cause pupils to lose interest in learning and will have a substantial impact on their academic performance.

Many experts define the meaning of learning style. According to Gokalp (2013), learning styles are concerned with "how" students like to learn rather than "what" they learn, and they are an essential element in students' academic progress and attitudes. Students have varied strengths and preferences when it comes to how they take in and process information. In other words, they have distinct learning styles.

Felder and Silverman defines learning style as the unique strengths and preferences in the ways individuals take in and process information (Felder & Spurlin, 2019). Additionally, Individuals possess preferences along four bipolar dimensions, according to theory: Active-Reflective, Sensing-Intuitive, Verbal-Visual, and Sequential-Global.

First, Active-Reflective Styles are the first dimension. Active learners are more likely to remember and comprehend it. For instance, putting it into practice, explaining it to others, or discussing it. Reflective learners like to consider issues in private first. While reflective learners prefer working alone, active learners typically prefer working in groups. Furthermore, it is challenging for both active and passive learners to sit through lectures with little to do physically other than take notes.

Second, Sensing-Intuitive Styles are the second dimension. Sensing and intuition are connected to one's tendencies in how they view the environment. Direct observing, seeing, or hearing are all examples of sensing. Creativity, imagination, and

intuition are all examples of indirect perceptions of the mind. While intuitive learners frequently prefer exploring possibilities and relationships, sensing learners typically prefer acquiring facts. Sensors frequently prefer using established methods to solve problems and dislike complexity and surprises, whereas intuitors prefer innovation and dislike repetition.

Being tested on material that hasn't been expressly taught in class can frustrate sensors more than intuitors. Although intuitive learners are frequently more comfortable than sensing learners with abstractions and mathematical formulations, intuitive learners may be better at understanding new concepts and tend to be more patient with details and good at retaining information and hands-on work. Directly in opposition, sensing learners have a tendency to be more realistic and careful than intuitive learners, as well as to work more quickly and creatively.

Third, Verbal-Visual Styles become the third dimension at this learning styles classification based of Felder and Silverman. Visual learners retain information better when they see. Illustrations, flowcharts, timelines, movies, and explanations with examples are a few examples. Information that is presented both verbally and visually helps people learn more. Students in some classes are primarily given to lectures and written content on chalkboards, in textbooks, and on handouts. In these classes, very little visual information is presented. Due to the fact that the majority of people learn best visually, most students do not learn nearly as much as they could if there were more visual presentations in the classroom.

Fourth, Sequential-Global Styles. Sequential learners typically learn in linear phases, with each step naturally following the previous one. Global learners typically learn in big jumps, taking in information almost randomly without making connections, and then "getting it" all at once. Global learners, on the other hand, may be able to solve complex problems quickly or put things together in novel ways once they have grasped the overview, but they may find it challenging to explain how they did it. Sequential learners, on the other hand, tend to follow logical step-by-step paths in finding solutions.

However, because the information they have ingested is logically connected, sequential learners can still use it even if they don't fully understand the subject. They enjoy finishing their schoolwork and doing well on tests. Strongly global learners, on the other hand, may struggle greatly until they have the large overview if they lack good sequential thinking skills. Even after they have it, they might not fully understand the subject's details, whereas sequential learners might be very knowledgeable about some aspects of a subject but struggle to relate those facts to other areas of the same subject or to other subjects.

2. Method

1. Research Design

This study is correlational in nature which is intended to discover the relationship among variables. It measures the strengths of the relationship among variables, how much the contribution of one variable to another is, and the significance of the relationship. To put it another way, how much of a change in one variable is caused by changes in another.

2. Participants

Fifty second graders of junior high school students, sixty five female, and fifteen male, in East Java, Indonesia, participated in the study. They were taken

purposively out of a hundred students. Sixty five are female students, and fifteen were male students. They were selected under certain consideration that from them the researchers would obtain rich necessary data.

3. Data collection

To measure learning style, the researcher adapted a questionnaire which is originally designed by Felder-Silverman at Carolina State University. The 44-item questionnaire known as the "index of learning style" (ILS), is used to determine the learner's preferred styles of learning. Each dimension has a certain preference for each student. Individuals possess preferences along five bipolar dimensions: active-reflective, sensing-intuitive, verbal-visual, sequential-global, and intuitive-deductive.

To measure students' self-regulation, the researcher adapted Self-Regulation questionnaire which is developed by Ryan and Deci (2000). It consists of 32 questions. Each item poses a question on why students conduct certain behavior or set of behaviors and then offers a number of potential answers that have been hand-picked to reflect the various regulatory or motivating methods. It has 4 points of Likert scale (from 1= very true to scale 4 = not all true).

Furthermore, the researcher measures reading achievement which was adapted from English E-book for junior high school. The researcher modified junior high school reading assessment questions to meet the characteristics of the respondents. The test was also checked by validator. The expert validator approved the questions based on their basic competencies and linguistic structure. In order to evaluate the validity of the reading test, the questions were tried-out to 28 students after being accepted by the validator. Therefore, 18 questions are considered to be valid.

4. Data analysis

Data from ILS (Index of Learning Style) questionnaire were analysed and classified into four categories of preferred learning styles: active/reflective, sensing/intuitive, visual/verbal, and sequential/global. In addition, students' responses were also counted to determine the percentage of the tendency of students' learning styles: mild, moderate, and strong (Academic Skills Advice service: www.brad.ac.uk/academic-skills).

Furthermore, every student' responses toward ILS questionnaire was counted and totalled for further statistical analysis of Eta. It is intended to measure statistical difference of the variables.

Data obtained from self-regulation questionnaire were analysed to determine the mean and standard deviation of each questionnaire item. Then, the total of each individual response were computed. This total was then categorized into four, and finally it is coded into one to four as in Table 1.

Table 1 Score Interpretation Criteria by Interval

Range of Value	Category	Code
0% - 24,99%	Poor	1
25 % - 49,99%	Fair	2
50% -74,99%	Good	3
75% - 100%	Very Good	4

This interpretation of the respondent's score is obtained by comparing the score of the item obtained based on the respondent's answer with the highest score, the answer is then multiplied by 100%.

$$\frac{\text{Item Score}}{\text{Highest Score}} \times 100\%$$

Finally, data from reading achievement test were counted and computed. Correct answer scores one while wrong answer scores zero. Then, the correct answers for each individual are totalled.

3. Findings and Discussion

1. Findings

The following data were obtained from ILS (Index of Learning Style). Data from ILS reveal the classification of learning styles as in Table 2 below.

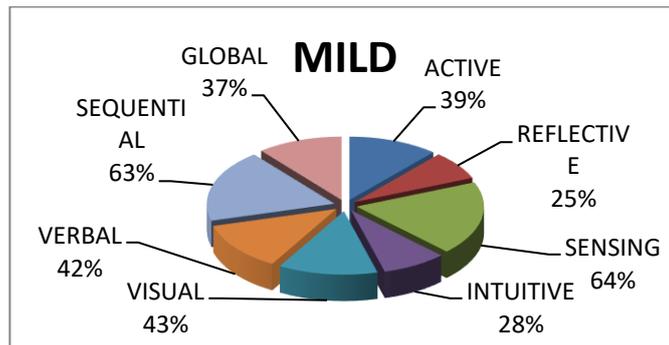
Table 2 Result of Students' Learning Style

Learning Styles	Mild	Moderate	Strong
Active	33 (39%)	25 (30%)	0 (0%)
Reflective	21 (25%)	6 (7%)	0 (0%)
Sensing	54 (64%)	12 (14%)	0 (0%)
Intuitive	18 (28%)	3 (3%)	0 (0%)
Visual	36 (43%)	13 (15%)	0 (0%)
Verbal	35 (42%)	0 (0%)	0 (0%)
Sequential	53 (63%)	2 (2%)	0 (0%)
Global	31 (37%)	2 (2%)	0 (0%)

Table 2 shows the followings:

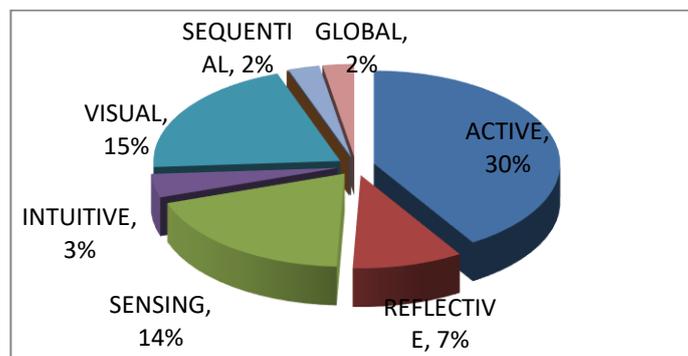
- Students show a tendency for Active learning style rather than reflective learning style. There are 33 students (39%) in the mild category, 25 students (30%) in the moderate category, and no students who tend to have active learning style in strong category.
- Students show a tendency for Sensing learning style rather than Intuitive learning style. There are 54 students (64%) in the mild category, 12 students (14%) in the moderate category, and no students who tend to have Sensing learning style in strong category.
- Students show a tendency for Visual learning style rather than Verbal learning style. There are 36 students (43%) in the mild category, there are 13 students (15%) in the moderate category, and there are no students who tend to have Visual learning style in strong category.
- Students show a tendency for Sequential learning style rather than Global learning style. There are 53 students (63%) in the mild category, there are 2 students (2%) in the moderate category, and there are no students who tend to have Visual learning style in strong category.

Chart 1 The Percentage of Learning Styles in the Mild Category



The percentage of learning styles in the balance group is shown in Chart 1. According to the graph, there are a significant number of pupils who exhibit a learning style preference in the balance area. Those are Active (39%), Sensing (64%), Visual (43%), and Sequential (63%).

Chart 2 The Percentage Learning Styles in the Moderate Category



The percentage of learning styles in the Moderate category is shown in Chart 2. It indicates that there are a significant number of pupils who exhibit a learning style preference in the balance area. Those are Active (30%), Sensing (14%), and Visual (15%). In contrast, no pupils specify their learning style under the Strong category. It shows that the majority of pupils like to learn; however, this tendency is not very strong. Additionally, a balanced category allows pupils to focus on one learning type dimension while studying. On the other hand, a strong category indicates that students can only study with one dimension of learning style, while a moderate category indicates that students are at ease with a dimension of learning style. Those categories are drawn from the researcher's previously determined score.

Furthermore, since data from ILS are nominal and categorical, every student's responses toward ILS questionnaire was counted and classified into eight categories of learning styles as in Table 3 below. Table 3 indicates that active and sensing learning styles gained the highest total number of students, each with 27 students. The lowest is sequential with only 2 students. This means that active learners are more likely to remember, comprehend, explain, and discuss, while sensing students like to observe, see, and hear.

Table 3 Learning Style and Number of respondents

Learning Styles	Total number of
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	students
Active	27
Reflective	3
Sensing	27
Intuitive	6
Visual	8
Verbal	4
Sequential	2
Global	3

Data from self-regulation questionnaire are shown in Table 3, along with means and standard deviation of their responses to the self regulation questionnaire.

Table 4 Students' Responses to Self-Regulation Questionnaire

Item	Students' Responses	Mean	SD
1	I do my homework because I want the teacher to think I'm a good student.	1.99	0.738
2	I work on my classwork because I want the teacher to think I'm a good student.	2.05	0.840
3	I work on my classwork because I'll be ashamed of myself if it didn't get done.	3.20	0.664
4	I work on my classwork because it's fun.	2.42	0.897
5	I work on my classwork because I enjoy doing my classwork.	2.66	0.779
6	I work on my classwork because it's important to me to work on my classwork.	3.49	0.551
7	I try to answer hard questions in class because I want the other students to think I'm smart.	2.61	0.684
8	I try to answer hard questions in class because I feel ashamed of myself when I don't try.	2.88	0.700
9	I try to answer hard questions in class because I enjoy answering hard questions.	2.49	0.795
10	I try to answer hard questions in class because it's fun to answer hard questions.	2.54	0.885
11	I try to do well in school, so my teachers will think I'm a good student.	1.98	0.795
12	I try to do well in school because I enjoy doing my school work well.	2.01	0.720
13	I try to do well in school because I'll feel really bad about myself if I don't do well.	3.27	0.693
14	I try to do well in school because it's important to me to try to do well in school.	3.34	0.572
15	I try to do well in school because I will feel really proud of myself if I do well.	1.77	0.795

Table 4 indicates that the means range from 1.20 as the lowest to 3.49 as the highest. Based on guidelines for the categorization of the average respondent's assessment score, score 3.49 is categorized as moderate. It indicates that most students work on their classwork because it's important to them to work on their classwork. In addition, item 4 has the highest score of standart deviation. It indicates that most students work on their classwork because it is fun.

Table 5 below indicates that the total scores of each respondents. The total ranges from 32 to 54, the percentage from 55% to 90%, and when applying the category as in Table 1, of eighty respondents, there are three respondents in *very good* category of self-regulation ability, while the rest is in *good* self-regulation ability. None has either *poor* or *fair* self-regulation ability.

Table 5 Students' Self Regulation Tendency

no	total	%	category	code	no	total	%	category	code	no	total	%	category	code
1	37	62%	Good	3	28	40	67%	Good	3	55	34	57%	Good	3
2	40	67%	Good	3	29	39	65%	Good	3	56	36	60%	Good	3
3	37	62%	Good	3	30	40	67%	Good	3	57	42	70%	Good	3
4	36	60%	Good	3	31	35	58%	Good	3	58	33	55%	Good	3
5	40	67%	Good	3	32	38	53%	Good	3	59	34	57%	Good	3
6	38	63%	Good	3	33	37	62%	Good	3	60	44	73%	Good	3
7	37	62%	Good	3	34	39	65%	Good	3	61	44	73%	Good	3
8	33	55%	Good	3	35	37	62%	Good	3	62	43	72%	Good	3
9	39	65%	Good	3	36	36	60%	Good	3	63	44	73%	Good	3
10	39	65%	Good	3	37	32	53%	Good	3	64	33	55%	Good	3
11	54	90%	Very Good	4	38	37	62%	Good	3	65	41	68%	Good	3
12	38	63%	Good	3	39	39	65%	Good	3	66	35	58%	Good	3
13	38	63%	Good	3	40	34	57%	Good	3	67	41	68%	Good	3
14	40	67%	Good	3	41	42	70%	Good	3	68	44	73%	Good	3
15	39	65%	Good	3	42	42	70%	Good	3	69	38	63%	Good	3
16	49	82%	Very Good	4	43	44	73%	Good	3	70	42	70%	Good	3
17	42	70%	Good	3	44	39	65%	Good	3	71	40	67%	Good	3
18	34	57%	Good	3	45	42	70%	Good	3	72	36	60%	Good	3
19	49	82%	Very Good	4	46	37	62%	Good	3	73	38	63%	Good	3
20	41	68%	Good	3	47	39	65%	Good	3	74	32	53%	Good	3
21	40	67%	Good	3	48	39	65%	Good	3	75	34	57%	Good	3
22	41	68%	Good	3	49	36	60%	Good	3	76	38	63%	Good	3
23	37	62%	Good	3	50	38	63%	Good	3	77	37	62%	Good	3
24	36	60%	Good	3	51	38	63%	Good	3	78	39	65%	Good	3
25	36	60%	Good	3	52	41	68%	Good	3	79	35	58%	Good	3
26	35	58%	Good	3	53	35	58%	Good	3	80	36	60%	Good	3
27	39	65%	Good	3	54	44	73%	Good	3					

Finally, the researcher graded the students' answers after collecting the answers to the reading comprehension test. Scores from reading comprehension tests are shown Table 6 below.

Table 6 The Result of Students' Reading Achievement Test

no	total	%	no	total	%	no	total	%	no	total	%
1	16	89%	21	5	28%	41	7	39%	61	16	89%
2	9	50%	22	8	44%	42	17	94%	62	16	89%
3	8	44%	23	11	61%	43	17	94%	63	14	78%
4	15	83%	24	17	94%	44	12	67%	64	14	78%
5	11	61%	25	11	61%	45	18	100%	65	14	78%
6	18	100%	26	2	11%	46	14	78%	66	14	78%
7	8	44%	27	7	39%	47	11	61%	67	10	56%
8	11	61%	28	18	100%	48	10	56%	68	9	50%
9	4	22%	29	18	100%	49	14	78%	69	16	89%
10	17	94%	30	18	100%	50	16	89%	70	15	83%
11	11	61%	31	18	100%	51	10	56%	71	16	89%
12	10	56%	32	18	100%	52	14	78%	72	13	72%
13	13	72%	33	15	83%	53	8	44%	73	13	72%
14	11	61%	34	18	100%	54	17	94%	74	16	89%
15	17	94%	35	11	60%	55	17	94%	75	18	100%
16	9	50%	36	16	89%	56	18	100%	76	15	83%
17	10	56%	37	12	67%	57	14	78%	77	17	94%
18	6	33%	38	17	94%	58	9	50%	78	18	100%
19	3	17%	39	18	100%	59	11	61%	79	12	67%
20	9	50%	40	14	78%	60	15	83%	80	6	33%

Table 6 shows that students' achievement ranges from 2 as the lowest score to 18 as the highest score, and the percentage is from 11% to 100%. This means that the respondents are heterogeneous. Since the minimum passing grade was set 70% of material mastery, it means that 46% of the respondents achieved above passing level, while 34% still needed remedy.

a. The Correlation between Learning Style and Reading Achievement

To test the hypothesis of whether there is a significant correlation between learning styles and reading achievement, Eta correlation test of SPSS was employed and produced the following results as in Table 7.

Table 7 Result of Eta Correlation Test

			Value
Nominal by Interval	Eta	Learning-styles Dependent	.600
		Reading achievement Dependent	.255

Df : 7 (as numerator)

N-K : 72 (as denominator in fraction)

$\alpha = 0.05$

F table = 2.14

F count= 0.255

Table 7 reveals that F_{count} is smaller than F_{table} ($0.394 < 2.14$), meaning that null hypothesis is rejected and working hypothesis is accepted. It means that there is a

significant relationship between learning styles and reading achievement among Islamic Junior High School Students Kediri.

b. The Correlation between Self-Regulation and Reading Achievement

To test the hypothesis of whether there is a significant correlation between self regulation and reading achievement, Pearson Product Moment was employed and produce the following results as in Table 7.

Table 8 The Result of Pearson Product Moment Correlations

		Self-regulation	Reading achievement
Self-regulation	Pearson Correlation	1	-.077
	Sig. (2-tailed)		.498
	N	80	80
Reading achievement	Pearson Correlation	-.077	1
	Sig. (2-tailed)	.498	
	N	80	80

Table 8 implies that the working hypothesis alternative (h_a) was not accepted and null hypothesis (h_o) was accepted, since the value of significance (.498) is bigger than the level of significance of 0.05, meaning that there is no significant correlation between self-regulation and reading achievement.

c. The Correlation between Learning Style and Self Regulation

To test the hypothesis of whether there is a significant correlation between learning styles and self-regulation, Eta correlation test of SPSS was employed and produced the following results as in Table 8.

Table 9 Result of Eta Correlation Test

		Value
Nominal by Interval Eta	Learning styles Dependent	.463
	Self-regulation Dependent	.284

Df : 7 (as numerator)

N-K : 72 (as denominator in fraction)

$\alpha = 0.05$

$F_{table} = 2.14$

$F_{count} = 0.284$

Table 9 reveals that F_{count} is smaller than F_{table} ($0.284 < 2.14$), meaning that null hypothesis was rejected and working hypothesis is accepted. It means that there is a significant relationship between learning styles and self-regulation among Islamic Junior High School Students Kediri.

2. Discussion

The first finding of the study is that there is a significant relationship between learning styles and reading achievement among. It is evident then that being able to identify students' learning styles could be able to help teachers to select the most appropriate teaching procedures that fit all types of students' learning styles; therefore, students achieve the best they could do. Fayambo (2015), for example,

pointed out that appropriate teaching strategies with the learning styles have positive impact to the students' achievement.

Likewise, it is taken for granted that after identifying students' learning styles, teachers select appropriate teaching styles that best fit students' learning styles. In this instance, Damrongpanit & Reungtragu (2013) revealed that there is positive significant academic achievement improvement when learning strategies are matched with students learning styles. Evidences also reveal that when teaching strategies and students learning styles are matched and appropriate, it has positive effect towards students' achievement (Arthurs, 2007; Liu & He, 2014); motivation (Bell, 2007) and attitudes toward learning (Felder & Brent, 2005).

The second finding of the study is that there is no significant correlation between self-regulation and reading achievement. This finding is inconsistent with some previous research findings. Safari & Hejazi (2019), for example, investigated if there is relationship between self-regulated learning skills and achievement. The findings showed that learners' self-regulated learning skills would raise students' awareness and finally increase efficiency of learning. Furthermore, Mirhassani, et al, (2007) studied if there is relationship between Iranian EFL learners' goal-oriented and self-regulated learning and their language proficiency. The results of the study indicated that students with better self-regulation got better achievement in language proficiency. The conclusion is that students who know self-regulation as well as the advantages of self-regulated characteristics are more successful than who do not know those features.

In addition, Khajavi & Abbasian (2013) examined the effect of self-regulation in reading English using concept mapping. The results indicated that students' self-regulation significantly improved due to the implementation of concept mapping strategy. In addition, other relevant studies in this field also indicated that motivational factors have positive impact towards learning language skills (Singh et al., 2015; Erginer, 2014).

However, the inconsistent finding of the study could be explained that students' reading achievement is not completely defined by their learning styles and self-regulation. In this situation, adolescents are still struggling to discover their best learning style and most of them still have poor self-regulation. In addition, in adolescents, development in the brain tends to focus on the emotional processes. In the part of the brain, the prefrontal cortex in adolescents has not yet reached a stage capable of controlling and regulating the emotional forces they feel (Santrock, 2011). As a result, adolescents who grow up in a risky or dangerous environment will have difficulty developing self-regulation skills (OPRE report, 2016). If it is related to this study, it may be concluded that students in adolescence have not identified the optimal learning style and do not have good self-regulation; therefore, they have not been able to increase student reading achievement.

This finding is also backed up by a study conducted by Nejadihassan & Arabmofrad (2015), who investigated the relationship between self-regulation, self-efficacy, and reading comprehension. The total number of participants were 99 Iranian university students. The level participants' English was pre-intermediate. The findings of the study is that no significant relationship between self-regulation with reading comprehension was found. When this finding was compared to previous research studies, it is found out to be unexpected and the researcher thought it might

because the participants are unique and different in some aspects particularly in their way of thinking and feeling.

The last finding is there is a significant relationship between learning styles and self-regulation among Eight Grade Islamic Junior High School Students. This finding is collaborated by other research studies conducted by Safari & Hejazi (2017) and Fayambo (2015). They concluded that a positive relationship is found between accommodating learning style and the students' self-regulation. In addition, it is believed that self-regulated learners believe that to be successful students should always keep practicing, work hard, enjoy trial and error, look for any opportunity, and learn experimentally (Perry et al, (2006).

Furthermore, Nikoopour & Khoshroudi's study (2021) also supported the result of the present study. Their study highlighted that there is a statistical significant relationship between students' learning styles and self-regulation among EFL learners with different language levels (beginner, intermediate, and advanced). This means that the higher the learners' scores on language learning styles were, the more self-regulated learners they were. Another finding of the study is that there is no significant difference in learning styles across gender. This indicates that male and female learners did not show differences in their language learning styles.

4. Conclusion

Identifying students' learning styles needs to be identified in order to enhance students' academic potentials. Therefore, teachers could fit their teaching strategy to students' learning styles. This will result in more independent and responsible students in learning. Therefore, students would have more self-confidence, and consequently teachers' control over students would lessen. Furthermore, in order to improve students reading ability requires motivational variables such as self-regulation.

This means that students with high self-regulation are more adaptable to various situations and come up with some more possible solutions. They are good at dealing with learning materials since they are more autonomous and have more metacognitive learning styles.

REFERENCES

- Alderson, J. C. (2000). *Assessing reading*. Cambridge: Cambridge University Press.
- Arthurs, J. B. (2007). A juggling act in the classroom: Managing different learning styles. *Teaching and Learning in Nursing*, 2, 2-7. Retrieved: June 16, 2015. <http://dx.doi.org/10.1016/j.teln.2006.10.002>
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.
- Bell, J. (2007). Evaluation of learning styles and instructional methods in the NROTC *Naval Operations and Seamanship Course*. *Institute for Learning Style Journal*, 1, 52-61.
- Corno, L. (2001). Volitional aspects of self-regulated learning. In B. J. Zimmerman, & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theoretical perspectives* (pp. 191-225). Hillsdale, N J: Erlbaum.
- Damrongpanit, S. & Reungtragul, A. (2013). Matching of learning styles and teaching styles: Advantage and disadvantage on ninth-grade students' academic

- achievements. *Educational Research and Reviews*. Vol. 8(20), 1937-1947. DOI: 10.5897/ERR2013.1583
- Erginer, E. (2014). A Study of the correlation between primary school students' reading comprehension performance and the learning styles based on memory modeling. *Education and Science*. Vol. 39, No. 173 66-81. <https://www.researchgate.net/publication/270816686>
- Fayambo, G. (2015) Learning Styles, Teaching Strategies and Academic Achievement among some Psychology Undergraduates in Barbados. *Caribbean Educational Research Journal*. Vol. 3, No. 2, September 2015, 46-61. <https://www.cavehill.uwi.edu/fhe/education/publications/past-issues/volume-3-number-2>
- Felder, R. M., & Brent, R. (2005). Understanding student differences. *Journal of Engineering Education*, 94 (1), 57-72. Retrieved from: http://www4ncsu.edu/unity/lockers/users/f/felder/public/Papers/Understanding_Differences.pdf
- Felder, R. M., & Spurlin, J. (2019). Index of Learning Styles [Data set]. *American Psychological Association*. <https://doi.org/10.1037/t43782-000>.
- Gokalp, M. (2013). The Effect of Students' Learning Styles to their Academic Success. *Creative Education*. Vol.4, No.10, 627-632. doi.org/10.4236/ce.2013.410090
- Grabe and Stoller, F. L. (2001) *Teaching and Researching Reading*. UK: Pearson Education.
- İlçin, N., Tomruk, M., Yeşilyaprak, S. S., Karadibak, D., & Savcı, S. (2018). The relationship between learning styles and academic performance in TURKISH physiotherapy students. *BMC Medical Education*, 18(1), 291. <https://doi.org/10.1186/s12909-018-1400-2>.
- Khajavi, Y., & Abbasian, R. (2013). Improving EFL students' self-regulation in reading English using a cognitive tool. *Journal of Language and Linguistic Studies*, 9, (1), 206-222. <https://xjournals.com/collections/articles/Article>
- Kucer, S. B. (2005). *Dimensions of literacy: A conceptual base for the teaching of reading and writing*. Mahwah, NJ: Erlbaum.
- Liu, J. F., & He, Q. S. (2014). The match of teaching and learning styles in SLA. *Creative Education*, 5,728-733. <http://dx.doi.org/10.4236/ce.2014.510085>
- Mirhassani, A., Akbari, R., & Dehghan, M. (2007). The relationship between Iranian EFL learners' goal-oriented and self-regulated learning and their language proficiency. *TELL*, 1(2), 117-132. https://www.teljournal.org/article_113136.
- Najeeb, S. R. (2013). Learner Autonomy in Language Learning. *Procedia-Social and Behavioral Sciences*, 70, 1238-1242. <https://www.sciencedirect.com/science/article/pii/S1877042813001845>
- Nejadihassan, S., & Arabmofrad, A. (2016). A Review of Relationship between Self-regulation and Reading Comprehension. *Theory and Practice in Language Studies*, 6 (4). DOI: <http://dx.doi.org/10.17507/tpls.0604.22>
- Nikoopour, J. & Khoshroudi, M. S. (2021). EFL Learners' Learning Styles and Self-regulated Learning: Do Gender and Proficiency Level Matter? *Journal of Language Teaching and Research*, Vol. 12, No. 4, pp. 616-623. DOI: <http://dx.doi.org/10.17507/jltr.1204.13>
- OPRE REPORT. (2016). *Child and Family Development Research*. <http://www.acf.hhs.gov/programs/opre/index.html>.

- Oxford, L. R. (2003). *Language Learning Styles and Strategies: an Overview Learning Styles and Strategies*. US: Gala.
- Pashler, H.; McDaniel, M.; & Bjork, R. (2008). Learning styles: concepts and evidence. *The Journal of School Nursing*. <https://doi.org/10.1111/j.1539-6053.2009.01038.x>
- Perry, N. E., Phillips, L., & Hutchinson, L. R. (2006). Preparing student teachers to support for self-regulated learning. *Elementary School Journal*, 106, 237-254.
- Pintrich, P. R. (2000). Multiple goals, multiple pathways: the role of goal orientation in learning and achievement. *Journal of Education Psychology*, 92, 544-555. doi:10.1037//0022-0663.92.3.544
- Rujani, M. R. (2019). Correlational Study Between Style and Reading Comprehension at University Level. *Advances in Social Science, Education and Humanities Research*, Atlantis Press, 317. DOI: 10.2991/iconprocs-19.2019.9
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*. Vol. 55, No. 1, 68-78 DOI: 10.1037110003-066X.55.1.68
- Safari, E. and Hejazi, M. (2019) Learning Styles and Self-regulation: An Associational Study on High School Students in Iran. *Mediterranean Journal of Social Sciences*. Doi:10.5901/mjss.2017.v8n1p463
- Sajadi, F., & Oghabi, M. (2011). Relation between instructors' objective needs and students' subjective needs: The case of Iranian post graduate students. *The Asian ESP Journal*, 7(4), 123-152. <http://asian-esp-journal.com/wp-content/uploads/2016/01/AESP>
- Santrock, J. W. (2011). *Educational psychology*. Boston, MA: McGraw Hill.
- Setiowati, H. (2019). Identifying Students' Learning Styles on Reading Comprehension Achievement. *Pedagogy Journal of English Language Teaching*, 7(1), 49-51. DOI: 10.32332/pedagogy.v7i1.1458
- Singh, L., Govil, P., & Rani, R. (2015). Learning style preference among secondary school students. *International journal of recent scientific research*. Vol. 6, Issue. 5 3924-3928
- Sulistiyawati, K.T., Paulus K. (2022). Students' Self-regulation in English Reading Comprehension during Online Class in Yogyakarta Private Senior High School. *Journal of English Teaching*, 8 (2), 210-212. DOI:<https://doi.org/10.33541/jet.v8i2.3493>
- Urquhart, S., & Weir, C. J. (1999). *Reading in a second language: Process, product and practice*. London: Longman
- Winne, P. H., & Perry, N. E. (2000). Measuring self-regulated learning. In P. Pintrich, M. Boekaerts, & M. Zeidner (Eds.), *Handbook of self-regulation*. Orlando, FL: Academic Press.
- Zimmerman, B. J. (1989). A social cognitive view of self-regulated learning. *Journal of Educational*, 81(3), 329-339.
- Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R., Pintrich, & M. Zeidner (Eds.), *Handbook of selfregulation* (pp. 13-39). San Diego, CA: Academic Press.
- Zimmerman, B. J., & Schunk, D. H. (2004). *Self-regulating intellectual processes and outcomes: A social cognitive perspective*. NJ: Erlbaum.

- Zimmerman, B. J., (2008). Investigating self-regulation and motivation: Historical background, methodological, developments, and future prospects. *American Educational research Journal*, 45(1), 166-183.
- Zimmerman, B.J. (2002). Becoming a Self-Regulated Learner: An Overview. *THEORY INTO PRACTICE*, Vol. 41, No 2. The Ohio State University.