Correlating Reading Literacy and Writing Literacy in Junior High School Pematangsiantar

Abstract

The Ministry of Education and Culture released that National Examination would be substituted by Minimum Competency Assessment which consists of some literacy tests in 2021. The purpose of this study is to find out the correlation between students' reading literacy ability and writing visual text ability for seventh-grade students of SMP Negeri 1 Pematangsiantar. This is a quantitative research method using correlational research. Data was collected using tests including multiple choice and essay. 133 respondents from 200 populations were selected using simple random sampling technique. This study analyzes data from both tests by using the Pearson Products Moment formula. The hypothesis of this study are H₁ (there is a correlation between reading literacy and writing visual text ability) and H₀ (there is no correlation between reading literacy and writing visual text ability). The result of this study indicated a strong correlation coefficient (r) between the two variables that was 0.91. It is concluded that H₁ is accepted and H₀ is rejected. To sum up, the determination coefficient (r²) 0.83 means that students' writing literacy are 83% influenced by reading literacy.

Key Words: reading literacy, writing visual text
A. Introduction

Literacy is a skill that must be mastered to be able to survive in 21st century learning. Literacy is very important to increase creativity, give us experiences, and knowledge so that everyone who lives in this era can compete with people around the world. Literacy activities play an important role in realizing character building education to increase productivity and better competitiveness. The application of literacy must be done as early as possible. It is needed to be done because literacy is one of the main factors in realizing a great nation. The development and strengthening of literacy is an important element in the progress of a nation today (Kirom, 2019). Building a literate society must be prioritized if it does not want to become a nation that is left behind, good literacy ability can be used as an illustration of a country's progress.

Since 2016 the Ministry of Education and Culture has intensified the National Literacy Movement (Gerakan Literasi Nasional—“GLN”). GLN became the implementation of Minister of Education and Culture Regulation No. 23 of 2015 concerning in Growth of Character (Penumbuhan Budi Pekerti). Foundational literacy found in GLN includes reading and writing literacy, numerical literacy, science literacy, financial literacy, digital literacy and cultural and civic literacy. Foundational literacy in Indonesia was adapted from the World Economic Forum in 2015.

Indonesia’s education effort to advance student education and skill is Indonesia participating in International study namely TIMSS (Trend in International Mathematics and Science Study) and PISA (International Students Assessment Program). The ability of students in Indonesia to compete internationally is very doubtful. Based on the results of the PISA test in 2018, Indonesia is still in the ten lowest rank. The ability of Indonesian students in reading, mathematics and science literacy is still far below average about the highest points obtained by Indonesia, which is 395 points through science literacy. The ability of Indonesian students to compete in international tests is still very low, especially in reading literacy which is always decreasing. The points gained by Indonesia through reading literacy on the PISA test are always disappointing and below standard as is illustrated in Figure 1 below.

![Figure 1. Comparison of Reading Literacy Scores in Indonesia](source.png)

The line graph above gives us information about the comparison in the number of points of reading literacy that Indonesia obtained in the PISA test from 2012 to 2018. Overall it can be seen that some fluctuation occurred, but the points obtained by Indonesia in all of the literacies decreased in the final period. In 2012, literacy reading got the highest score from the other two literacies and remained stable until 2015, but in 2018 reading literacy has decreased to become the lowest point of literacy compared to the other two literacies. This shows that reading literacy is the most difficult literacy according to Indonesian students.

One of the important foundational literacy to be mastered is reading literacy. Reading literacy is one of the basic literacies found in GLN and is emphasized by the government. Reading literacy ability must be mastered before mastering the other literacies. In reading

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activities, we can get knowledge including information that will be very useful in life. Reading literacy requires students to have high concentration so that all students do not only read fluently but can also understand the information and meaning contained in the text. The reading process requires knowledge, thoughts and high concentration power to get a clear understanding of the text. Closely related to reading, writing literacy also needs to be developed. Writing visual text is one way to practice students’ critical thinking skills. In writing visual text, students interpret visuals in the form of pictures, tables, graph, maps and more. As a form of critical thinking in writing literacy, students are required to be able to present interesting things contained in the visual.

Nowadays, education in Indonesia has begun to head towards a better direction, the application of literacy in Indonesia is increasingly emphasized. It was demonstrated through the Minister of Education’s decision to replace National Examination (Ujian Nasional—“UN”) with Minimum Competency Assessment (Assesmen Kompetensi Minimum—“AKM”) which will begin in 2021. Based on the experience of researcher who has answered predictions about AKM questions, the researcher found that the problem consists of a lot of literacy aspects such as reading literacy and writing literacy. Based on the prediction, the reading literacy and writing literacy consists of visual text and non-visual text. To face the AKM in the next year, it is important to the students to master the literacy ability, not only reading but writing ability in visual or non-visual should be mastered because it will be found in the AKM and it cannot be separated from each other. So, to what extent does the students’ reading literacy ability correlate with students’ writing visual text-ability? Looking at the problem that exists, the purpose of this research is to find out the extent of the correlation between students’ reading literacy ability and students’ writing visual text ability.

This study shows a correlation between reading literacy and writing ability and this is in line with the results of previous researchers (Ariyanti & Qomar, 2016) stated that the higher their ability to read, the higher their ability to read write and vice versa. The statement was also supported by a statement by (Walker, 2016) stating that the relationship between reading and writing is a strong one, and people who are generally good at one will usually be good at the other. This is pursuant to the findings of (Ningsih, 2019) stating that to overcome the low ability of students in writing the teacher should pay more attention to students’ reading abilities. If they can read well, they will be able to write well too. All the previous studies discuss the form of writing non-visual texts such as essay, descriptive paragraphs, narrative paragraphs. However, none of the research study about writing visual texts such as video, graphic texts, or illustrative text. In short, this study attempts to complete the form of writings that are found in the previous studies.

B. Literature Review

1. 21st Century Learning Skill

As human who lives in the 21st century, it is important for us to know and master the skills that exist in this century. It is all very necessary for us to be able to survive in global competition in this century. Each country competes to create high human resources because it can also affect the progress of a country. This change in the 21st century concerns all aspects of life. Every human being must master the skills needed in this century. Some skills are demand of this century described in figure 2 below.
Based on the World Economic Forum (2015) as is described in the figure above, there are at least 16 skills that students must master in this century. These skills are divided into three core categories namely Foundational Literacies, Competencies and Character Quality. In foundational literacies are divided into 6 namely, literacy, numeracy, scientific literacy, ICT literacy, financial literacy, Cultural and civic literacy. Competencies are divided into 4 namely critical thinking/problem solving, creativity, communication and collaboration. In light quality is divided into 6 namely, curiosity, initiative, persistence/grit, adaptability, leadership, social and cultural awareness. The WEF states that the nations of the world must formulate a new vision of education that contains these three things as a single unit. However, this must be based on national legislation and culture.

In Indonesia the importance of mastering skills in 21st-century learning has begun to be realized, this is manifested in a program created by the government. To be able to excel and actively participate in learning in the 21st century, the government focus on national education into 3 main points namely, character(Walker, 2016) quality, basic literacy and competency as showed in the figure above.

In the character quality 9 things must be mastered namely religious, nationalist, independent, mutual cooperation, tolerance, responsibility, creativity, and care about the environment. In basic literacy 6 literacies must be mastered, namely reading and writing literacy, numeracy literacy, scientific literacy, digital literacy, financial literacy, cultural and citizenship literacy. In addition, the competencies promoted by the government are critical thinking, creativity, communication and collaboration. Based on this, it means that the capabilities required by the Indonesian government are adapted from the WEF (2015).

The world is currently moving at lightning speed that requires curious, flexible and proactive people. This means that all order of life must be adjusted to the guidelines in the 21st century including education. The education system in Indonesia must be changed through disruption. Disruption means disorder and problems that interfere with an event, activity, or process. Disruption is a big phenomenon that will overturn established models in various sectors(Putra, 2018). Disruption has the opportunity to replace the old system into a new system to be better able to face every challenge in the era of the industrial revolution 4.0. Nowadays, technology disruption was included in the Indonesian education road map 2020-2035. This means that the government is starting to realize that this disruption has an impact on all sectors including education. Disruption of education is present as part of the demands of the times that education must immediately change the education system from conventional to technology. In fact the education sector is the most difficult sector to deal with disruption. Education in Indonesia must immediately be adapted to era 4.0 to produce superior human resources and be able to compete in this century.

With this disruption, it should be able to turn someone into a person who is responsive to technology and change. This disruption also requires everyone to be able to master skills in the
21st century, where there are 4 core skills namely problem solving, social, process and system. In education, as one part of this disruption is to replace conventional based learning methods or models into technology. Teachers also play an important role in this renewal, teachers must prepare themselves one of which is by self-development through mastery of technology. The teacher must act as a facilitator who facilitates student learning and allows them to look for other sources of knowledge through the internet and others. Disruption in education cannot be dammed by anyone, so what we need is provision and preparation to face it. In this case, education disruption should not be an enemy but this disruption must be supported so that the quality of education in Indonesia is more advanced and can realize the golden generation in 2045.

2. **Reading and Writing Literacy**

Reading and writing literacy is one of the basic literacy that must be mastered before mastering other types of literacy. By having the ability to read and write, someone will be better at living his life. Reading literacy is a high-level thinking activity that requires the reader to comprehend reading material critically and be able to relate the contents of the reading to the problems of life. In the process of reading is very closely related to the process of critical thinking to find ideas or ideas contained in the text. Reading literacy is a complex cultural and social phenomenon that has a profound impact on our lives, both at individual and community levels (Riga, 2018). Reading literacy skills can be used as skills to survive in 21st-century learning. Furthermore (Hassanzadeh, 2019) said that reading literacy is the ability to understand and use those written language forms required by society or valued by the individual. With the literacy ability, students will be better prepared to deal with problems in real life, in addition to being better prepared to face all challenges in 21st-century learning.

Closely related to reading, writing is also a skill that must be mastered. Writing is a thinking activity that is embodied in the arrangement of letters that has a meaning (Pujiono, 2012). In reading, we will get new information in the form of ideas and ideas, then to issue these ideas can be done by writing. When writing, it requires a high concentration, because while pouring out the ideas we have, it requires more concentration. By having the ability to read and write, the quality of life will improve. Therefore literacy needs to be emphasized and implemented in everyday life.

3. **Indonesia’s Ranking in PISA Test**

The Program for International Student Assessment (PISA) is a program organized by the OECD. PISA is a world-class assessment of students’ academic performance throughout the world. PISA is held every three years and measures the ability of 15 year old students worldwide. Indonesia has been taking the PISA test since 2000. To measure the ability of students from each country, the test is given questions consisting of three literacies, namely reading literacy, scientific literacy and mathematics literacy. However, while taking this test, Indonesia’s position remained in a low position. Based on the latest PISA score in 2018, Indonesia is ranked 74 out of 79 countries. The results of the 2018 PISA decreased when compared with the results obtained by Indonesia in 2015, namely Indonesia ranked 62 out of 74 countries participating in the PISA. The test score obtained by Indonesia is only around 380-400. This result is still very far compared to the average score of PISA from OECD countries which is 480 points. Of the three literacies, reading literacy gets the lowest score compared to scientific and mathematical literacy. Since 2012, Indonesia’s literacy reading scores have always declined. Indonesian PISA scores in literacy reading in 2012 to 2018 were 396, 397 and 371, respectively, whereas the OECD average was 489.

Indonesian government has set PISA score targets that should be obtained by Indonesian students. In the field of literacy reading, the government is targeting a score of 396 in 2020-2025, a score of 423 in 2025-2030 and 451 in 2030-2035. By looking at these government targets, we can find out that for at least the next 15 years, the highest target for Indonesia’s PISA scores is far below the OECD country’s average PISA score. That means it is very difficult for Indonesia to be able to get results or scores above the average in the next 5 times the PISA test.

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If you want to get satisfactory results, the government should set a target PISA score above the OECD average, to truly produce superior humans. At this time, the reading literacy ability of Indonesian students is only at level 1, while other OECD countries place the reading literacy level at level 3. Thus, Indonesia must work hard so as not to become a country that is left behind because its literacy ability is categorized as low.

C. Methodology

1. Research Design

This study implemented a quantitative research method. Quantitative research methods are systematic, structured research methods and data analysis use numbers and measurements. The data in quantitative research are a set of numbers by using statistical or mathematical analysis and the results are often presented in tables and graphs (Locharoenrat, 2017). The advantage of quantitative research is that the findings from the sample under study will more accurately reflect the overall population from which the sample was drawn (Vanderstoep & Jhonston, 2009). In this study, the raw data obtained from the results of testing the variables are very important.

Furthermore, the data are taken by using the correlational research. Correlational research is a form of descriptive research because it describes an existing relationship between variables. A correlational study describes the degree to which two or more quantitative variables are related, and it does so by using a correlation coefficient (Fraenkel, 2012). Correlational research provides information about the strength of relationships between variables. Correlational research gathers data from individuals on two or more variables and then seeks to determine if the variables are related. In a correlational study, the researcher does not manipulate or treat the variable state and directly look for the existence of the relationship and the level of relationship of the variable reflected in the correlation coefficient.

2. Respondents

The population of this study was grade VII students of SMP Negeri 1 Pematangsiantar. There were 200 students divided into seven classes. The reason of the researcher selected grade VII because this grade was the ideal study population which the researcher adjusted to the research topic of literacy and AKM. In the upcoming year, this grade will face Minimum Competency Assessment. Due to the lack of the researcher’s time, money and effort, the researcher needed to do sampling. To determine the sample in this study, researcher used the Slovin formula. Slovin formula is a formula for calculating the minimum number of samples if the behavior of a population is unknown. In this study, the researcher used 95% coefficient confidence and determined the samples with the 5% error margin requirement. Based on the Slovin formula and the error margin used, the number of samples in this study was 133 respondents from 200 populations.

3. Instruments

The instrument of this research was test. The researcher conducted tests in the form of multiple choice and essay. The researcher conducted tests to find the students ability on both variables. The researcher provided 10 questions about reading literacy as predictive question of Minimum Competency Assessment in 2021. In reading literacy question, the researcher provided visual text and non-visual text. The researcher offered 4 visuals and then asked the students to interpret them in the form of essay. This aimed to obtain data in the form of scores on students’ ability to write visual text. In this test, the researcher provided the visual in the form of tables, diagrams, pictures, maps and others. To make it clear what was done in a test, the researcher gave the following blue print test to the students.

| Table 1. Test Blue Print for Grade Seventh |
| Test Component       | Objectives                                                                 | Topics                                                                 | Test Type          | Easy | Medium | Difficult | No. of Test Item | Duration (minutes) |
|----------------------|----------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------|------|--------|-----------|------------------|-------------------|
| Reading comprehension| To measure the students' comprehension about the topics given               | Skill 1: a short text about the everyday topic of brushing your teeth  | Multiple choice    | 5    | 3      | 2         | 10               | 40                |
|                      |                                                                            | Skill 2: recognize the persuasive purpose of a phrase in advertisement  |                    |      |        |           |                  |                   |
|                      |                                                                            | Skill 3: relationship between two short argumentative texts that offer contrasting opinions. |                    |      |        |           |                  |                   |
|                      |                                                                            | Skill 4: an expository text in a table                                 |                    |      |        |           |                  |                   |
|                      |                                                                            | Skill 5: the main idea of a diagrammatic descriptive text.              |                    |      |        |           |                  |                   |
| Writing visual text   | To measure the students' ability in writing visual text                    | Skill 1: Developing interpretation in text and graph                    | Essay              | 2    | 1      | 1         | 4                | 24                |
|                      |                                                                            | Skill 2: Library maps, relates to the activities of a community (a public library) |                    |      |        |           |                  |                   |
|                      |                                                                            | Skill 3: Figure                                                        |                    |      |        |           |                  |                   |

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4. Technique of Data Analysis

To find out the extent of the correlation between students' reading literacy ability and students' writing visual text ability, the researcher used bivariate correlation analysis. Correlation analysis is an analysis to determine the level of closeness of the relationship between two variables. The level of closeness of the relationship can be divided into three criteria, namely having a positive relationship, having a negative relationship and not having a relationship. After getting the data from the test, the researcher analyzed the data by Ms. Excel and using the formula =CORREL, with the steps as follows:

1. Enter data from both variables in Ms. Excel.
2. Then, in random place, type =CORREL.
3. Next, block the variables’ column started by variable x to y.
4. The last step after blocked the variable, click enter to get result automatically.

D. Findings and Discussion

1. Findings
   a. Description of Research Data

   This research is a correlational study that aims to find out the relationship between reading literacy ability and writing visual text ability for grade VII students of SMP Negeri 1 Pematangsiantar. This research was conducted from 20th January 2020 to 3rd February 2020 at SMP Negeri 1 Pematangsiantar. The population in this study is grade VII students with a total of 200 students, and the sample used by researcher to obtain data was 133 students. Grade VII students considered chosen as the subject because grade VII is the level that must be prepared to take the AKM in grade VIII. The researcher considered that grade VII students should be accustomed to facing literacy questions as the predictions of the AKM.

   b. Validity and Reliability

   Validity test is needed in this research. Validity test is used to test the question items given and to measure each item in the multiple choice and essay test. In this case, the researcher provided 10 questions in the form of multiple choices and 4 questions for the essay test which distributed to 133 respondents. To calculate the validity of the 14 questions given, the researcher used the Cronbach alpha formula and used Ms. Excel to calculate the validity value.

   To get the validity value of 10 multiple choice questions and 4 essay questions the researcher used the Pearson product moment formula and used r table with a significance level of 5%, then the r table suitable for 133 respondents was 0.143. The items can be said to be valid if r count > r table. In this research, the first validity test was conducted to determine the validity of 10 multiple choice questions. The second validity test was conducted to obtain the validity of 4 essay questions. As for the results of the validity of the multiple choice and essay tests are shown in the table below.

| Test Component | Objectives | Topics                  | Test Type | Easy | Medium | Difficult | No. of Test Item | Duration (minutes) |
|----------------|------------|-------------------------|-----------|------|--------|-----------|------------------|-------------------|
| TOTAL          |            | about tall buildings in the world |           | 7    | 4      | 3         | 14               | 64                |
Table 2 above shows the calculations of the validity of multiple-choice test using Ms. Excel where the coefficient of all items were larger than 0.70. From these results, it means that all the questions in the multiple choice test used in this research are valid.

Table 3. Validity of Essay Test

| Number of items | r count | r table | Result |
|-----------------|---------|---------|--------|
| 1               | 0.915   | 0.143   | Valid  |
| 2               | 0.923   | 0.143   | Valid  |
| 3               | 0.912   | 0.143   | Valid  |
| 4               | 0.922   | 0.143   | Valid  |

Table 3 above shows calculation of validity of the essay where the coefficient of all items are larger than 0.90. From these results, r count is larger than r table, it means that in the essay test all the questions are valid. Overall, all items from both of the test used in this research are valid.

Reliability tests are carried out on valid items, invalid items not calculated. Reliability test is carried out to find out the consistency of the items used. To measure the reliability both of tests, the researcher used the Cronbach alpha formula. The researcher also calculated the value of reliability using Ms. Excel. If a test has a reliability value of 0.70-0.90 then the test has a high reliability, if it has a reliability value > 0.90 then the test has perfect reliability. Based on calculations using Ms. Excel, the reliability value of the multiple choice test is 0.81 and the reliability value for the essay test is 0.71. Then, based on the value of the reliability, it can be concluded that both tests have high consistency or reliability.

c. **Hypothesis Testing**

The hypothesis is a temporary answer to the problem that was formulated. Therefore, the hypothesis must be tested for truth or proven empirically. In this study, the variables to be tested are reading literacy ability and writing visual text ability. Based on these variables, the hypothesis formula in this study is divided into H₀ and H₁, as the formula below.

H₁: There is a correlation between students’ reading literacy ability and students’ writing visual text ability.

H₀: There is no correlation between students’ reading literacy ability and students’ writing visual text ability.

Based on the research hypothesis formula above, the statistical hypothesis formula in this research is as follows.

H₀: \( \rho = 0 \) (hypothesis rejected)

H₁: \( \rho \neq 0 \) (hypothesis accepted)

In this study, to determine the level of closeness of the relationship between the two variables, researcher used a bivariate correlation analysis technique using the correlation formula and calculated the data obtained from 133 respondents using Ms. Excel. To calculate

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the correlation value between two variables, researcher used a scale of 0-100. In correlation research, the correlation coefficient is symbolized by "r". As a guideline to determine the level of the relationship between variable x and variable y, the researcher uses the values based on table 4 below.

| Correlation Coefficient Value | Description |
|------------------------------|-------------|
| R=0                          | No correlation |
| 0 < R < 0.2                  | Very weak |
| 0.2 < R < 0.4                | Weak but sure |
| 0.4 < R < 0.7                | Middle |
| 0.7 < R < 0.9                | Strong |
| 0.9 < R < 1                  | Very strong |
| R=1                          | Perfect |

Based on the calculations using Ms. Excel obtained the correlation coefficient between the variable x (reading literacy ability) and the variable y (writing visual text) the researcher use the correlation formula. And the descriptive statistic in this research described in table 4.4 below.

| Variable | Reading Literacy Ability score | Writing Visual Text score | x² | y² | xy |
|----------|--------------------------------|--------------------------|----|----|----|
| X        | Σ X = 340                     | Σ Y = 340                | 5683800 | 559890 | 393 |
| Y        |                               |                          |    |    |    |
| STDEV    |                               |                          | 15 | 17 |    |

Based on the calculation of the data above, the correlation coefficient is \( r = 0.91 \) and the value of the coefficient of determination is 0.83. These results indicate that the ability to write visual text students is determined by 83% reading literacy abilities. The correlation coefficient or \( r = 0.91 \) is consulted on \( r \) table with \( N = 133 \) and a significance level of 5%, then \( r \) table = 0.14 is obtained. Based on these results, then \( r \) count > \( r \) table, i.e. 0.91> 0.14. From these results, then the hypothesis or \( H_1: \rho \neq 0 \) in this study is accepted that there is a correlation between reading literacy ability and writing visual text ability. Based on the correlation coefficient values from table 3.2, and looking at the correlation coefficient or \( r = 0.91 \), the relationship between the two variables is very strong.

2. Discussion

In this study, the researcher conducted a study of the correlation between reading literacy ability and writing visual text ability of students of SMPN1 Siantar. To get the data in this study, the researcher gave a test to students consisting of 10 multiple choice test questions for variable X (reading literacy ability) and 4 questions for essay test for variable Y (writing visual text ability). The researcher uses Ms. Excel to calculate the raw data obtained from 133 respondents and result shown in table 6 below.

| Variable | Reading Literacy | Writing Visual Text |
|----------|------------------|---------------------|
| Min      | 30               | 19                  |
| Max      | 100              | 88                  |
| Average  | 70               | 63                  |
| STDEV    | 15               | 17                  |
In the multiple choice test given by the researcher, none of the students got a value of 0. That means that of the 133 respondents who participated in this study, none of the students answered incorrectly from a total of 10 multiple choice questions. Based on table 5.1 the minimum score obtained by students in answering multiple choice questions is 30, while the maximum score obtained is 100. Then, average value is 70, the average value is minimum completeness criteria. That means students who get a score $\geq 70$ are students who completed the test and students who scored < 70 were students who did not complete this test. Then, standard deviation in this test is 15. Furthermore, to determine the ability of students who are low or high in answering reading literacy questions, researcher uses standard deviations in this test. To find out students who have low scores in reading literacy ability, researcher uses the AVERAGE-STDEV formula, which is $70 - 15 = 55$. Based on the analysis conducted by researchers, students who have a value of $\leq 55$ are students who have low scores in reading literacy abilities, while to find out students who have high scores in reading literacy abilities, researchers use the AVERAGE+STDEV formula, which is $70 + 15 = 85$, so students who have a value of $\geq 85$ are students who have high score in reading literacy ability.

Based on table 6 above, it is known that minimum score in the test essay is 19, and the maximum score is 88. By looking at these results, in this test none of the students were able to correctly answer all the questions given with a score of 100. Then, average value is 63, the average value is minimum completeness criteria. That means students who get a score $\geq 63$ are students who completed the test and students who get score $< 63$ are students who did not complete this test. To determine the ability of students who are low or high in writing visual text, the researcher uses the standard deviation in this test. To find out students who have low ability, the researcher uses the AVERAGE-STDEV formula, which is $63 - 17 = 46$. It means students who have score $\leq 46$ are students who have low score in writing visual text, while to find out students who have high ability in writing visual text, researcher uses the formula AVERAGE+STDEV, which is $63 + 17 = 79$, so students who have a score of $\geq 79$ are students who have high grades in writing visual text.

The raw data from 133 respondents were processed using the correlation formula or = Correl in Ms. Excel and use a scale from 0-100. After being analyzed, the correlation coefficient value between the two variables is 0.91. It means that there is a very strong relationship between reading ability and writing visual text ability. When two variables have a strong relationship, it means that an increase in one variable will always be followed by an increase in the other variables as well. In this study, the correlation between reading literacy and writing visual text describe in graph 1 below.

![Figure 3. Determination Coefficient between Reading Literacy and Writing Visual Text](image)

The line diagram above shows the correlation between reading literacy and writing visual text ability. Based on the graph above, Increasing the value of students 'reading literacy abilities is always followed by increasing the values of students' writing visual text abilities. From this
graph, we can see the results of the coefficient of determination in this research. The coefficient of determination symbolized by $r^2$ obtained from this study is 0.83 it means that the ability to write visual text students is determined by 83% of students’ literacy reading abilities. If students get high scores in reading literacy, then they will get high scores in writing visual text as well.

In this study, it was found that there was a strong correlation between reading ability and writing ability. Based on the results of this study, it turns out that reading ability has a great influence on students' writing ability. The ability to read and write is the most basic ability that should be possessed by everyone. Reading and writing are important skills because they can be easily linked to other language skills and provide more information than sustainable listening and speaking. When they understand what they are reading, it will be easy to implement it in written form. Students can explore and develop their ideas of writing through more reading (Kartal, 2017). Reading literacy requires a person to concentrate highly during reading and understanding texts. When people read the text, they engage in a complex array of cognitive processes. They are simultaneously using their awareness and understanding of phenomenon, phonics (connection between letters and sound and the relationship between sound, letters and words) and the ability to comprehend construct meaning from the text (Prianggita, 2018).

Related to reading, writing is as important as reading. Writing is also a cognitive activity that requires a person to focus on expressing his ideas. In this study, from the matter of writing visual text given by researchers, none of the students got a score of 100 and the highest score obtained was 88. To getting a perfect score in writing visual text would be very difficult if students did not have good reading skills too.

At this time, the literacy ability of students is still very low, this can be seen from the ability of students when answering literacy questions on the test PISA. In the PISA test, the literacy ability of students in Indonesia is still relatively low. This can be proven by the results of the 2018 PISA test where Indonesia only had to be satisfied with the position of the 10th lowest out of 79 countries that took the PISA test. The results of the 2018 Pisa are down when compared to the results obtained by Indonesia in 2015 and 2012. Since 2012, Indonesia’s literacy reading scores have always declined. In fact, reading literacy is one of the key literacies to be able to master other literacies. PISA scores for 2012 to 2018 are 396,397 and 371. In reading literacy skills in Indonesia, Indonesia is very difficult to get a score of 400. This is one of the factors that makes Indonesia got the low-rank test results.

As a form of starting to better the education system in Indonesia, the Indonesian government has set PISA score targets that should be obtained by Indonesian students. In the field of literacy reading, the government is targeting a score of 396 in 2020-2025, a score of 423 in 2025-2030 and 451 in 2030-2035. By looking at these government targets, we can find out that for at least the next 15 years, the highest target for Indonesia’s PISA score is far below the OECD country’s average PISA score. That means it is very difficult for Indonesia to be able to get results or scores above the average in the next 5 times for the PISA test and to have a good skill in literacy.

To emphasize the literacy abilities of Indonesian students, the government replaced the National Examination (Ujian Nasional-“UN”) to Minimum Competency Assessment (Assesmen Kompetensi Minimum-“AKM ”) which will begin in 2021. The implementation of AKM is different from UN, in the AKM, the problem will consist of many literacies that require students to think critically in answer to existing problems. The government also emphasizes that the AKM that will be implemented refers to the practice of the PISA test. That means it can be predicted that the types of problems in the AKM are adapted from the PISA test.

In this study, researchers gave literacy questions to read and write to students. Reading literacy matters consist of visual text and non-visual text. While writing questions consist of visual text in the form of pictures, tables, diagrams, maps and more. The questions given by the researchers were adopted from the Pisa questions, and the questions were also a prediction of the form of the AKM questions to be faced in the future. Reading and writing literacy becomes the main key in mastering other literacy. Therefore, students should train and prepare for the AKM. Not only students, but teachers must also be able to guide students in order not to be surprised when dealing with AKM problems.

The necessity to master literacy has always been emphasized in 21st-century learning. Literacy mastery is needed as the main capital to deal with various changes that will occur,

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especially in the world of education. We stand in the 21st century which is the era of the industrial revolution 4.0 in which all order of life is related to technology. Technological developments also cause disruption in every sector of life. One sector that is changing is education. Disruption is a big phenomenon that will overturn established models in various sections (Putra, 2018). Disruption has the opportunity to replace the old system into a new system to be better able to face every challenge in this era. Disruption of education is present as part of the demands of the times that education must immediately change the education system from conventional to technology. Learning in the digital age has transitioned from the analog era to the digital era of (Kusumadewi, 2018). All who play an important role in the advancement of education must at least be able to master technology so as not to be dragged down by the current disruption of the century. This disruption is a challenge for everyone to prepare themselves and be responsive to world developments. Teachers as an important part in the world of education must be able to prepare themselves in facing disruption of education this is a big responsibility, because if teachers and the education system in Indonesia are unable to face this disruption then it is true that our nation will become a nation that is left behind. Disruption will emerge competition in every sector in life, for that we need to become a literate society. Education disruption should not be an enemy but this disruption must be supported so that the quality of education in Indonesia is more advanced.

Literacy skills in reading and writing are indispensable in a century, literacy skills in reading and writing are also important for students today to prepare for the AKM the following year. By having these skills, students will be better prepared to deal with various literacy questions and be able to implement them in real life. Literacy is useful in this era of disruption to filter and process information, so it is not easily fooled by various news or information, so students can survive in this 21st-century learning.

E. Conclusions

Based on the results of the analysis of the correlation between reading literacy ability and writing visual text ability of grade VII students at SMP Negeri 1 Pematangsiantar by using the correlation formula shows that the calculated r value is 0.91 and the r table value is 5% significant at N = 133, then the r table value is obtained is 0.14. From these data, it shows that r count > r table is 0.91 > 0.14. Based on the results of the analysis, it can be proved that there is a very strong relationship between reading literacy ability and writing visual text ability in grade VII students of SMP Negeri 1 Pematangsiantar. From the results of calculating the correlation coefficient, the results also obtained the coefficient of determination that is 0.83, the value obtained from the square of the correlation coefficient, so the coefficient of determination is denoted by r² or r-square. From the coefficient of determination value that means the writing visual text ability of students 83% is determined by reading literacy ability.

Based on the research results, it is known that reading ability has a strong relationship with writing ability. A variable is said to be positively correlated if increasing one variable will increase other variables, and decreasing one variable will decrease other variables as well. Meanwhile, a negative relationship occurs when one variable goes up while the other variables go down. In this study, an increase in reading literacy scores followed by writing visual text scores. Thus, these result reveals that the state of the relationship between reading literacy ability and writing visual text can be accepted as correct.

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