Analysis of Students' Statistical Literacy on Self Organized Learning Environment (SOLE) Learning Model

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Abstract

The purpose of study to describe student's literacy analysis using Self-Organized Learning Environment (SOLE) learning model. The low student's statistical literacy ability as one of the abilities needed facing problems in today's society. Therefore, the problem became background of this study. By utilizing Internet accessibility and the environment in the Self-Organized Learning Environment (SOLE) learning model, it was possible for authentic learning and twenty-first century development skills to mature. This study used to Self-Organized Learning Environment (SOLE) learning model, which students self-organized in groups and learned to use computers connected to the internet with minimal teacher support. This study also used mix methods. Students' statistical literacy ability using the Self-Organized Learning Environment (SOLE) learning model was analyzed by descriptively. The result of study was a statistical analysis of the literacy of 32 students with the following details: 28.125% of students had statistical literacy in the high category, 40.625% students had statistical literacy in the medium category, the remaining 31.25% students were in the low category. Qualitatively, the low category students are capable of literacy skills and statistical knowledge, but less able in context knowledge aspects, and not capable of mathematical knowledge and critical knowledge aspects. Meanwhile, students in the medium category are capable of literacy skills and statistical knowledge, less able in mathematical knowledge and context knowledge, and not capable in critical of knowledge. In addition, students who are in the high category are capable of all aspects of statistical literacy.
Keywords: Statistical Literacy; Self-Organized Learning Environment (SOLE)

INTRODUCTION

Statistics is an important component in mathematics education. However, mastery of statistical concepts required students to have good mathematical abilities. Statistics has an important role in various activities of human life (Jatisunda & Nahdi, 2020; Takaria & Talakua, 2018). In modern society, everything related to data, in media, work, and other aspects of life (Chick & Pierce, 2012; Gal, 2019). Statistical literacy is a tool for individual to be able to read, analyze, and evaluate data in planning, calculating, and making decisions based on statistical arguments. This makes statistical literacy a must-have skill by every individual in today's society (Helenius et al., 2020; Jatisunda & Nahdi, 2020; Takaria & Talakua, 2018). However, the reality showed that the statistical literacy of students in

Indonesia tends to be low(Amalia et al., 2020). This is supported by study conducted by Iyam Maryati and Nanang Priatna who analyzed the statistical literacy of the students of Madrasah Tsanawiyah Negeri 1 Garut Regency in the Academic Year 2016/2017 in grade VIII, showing that the statistical literacy of students was categorized as low because it was still below the minimum completeness criteria(Maryati & Priatna, 2018). This problem is also in line with study conducted by Ghozian Thirafi who analyzed the statistical literacy of grade IX students at MTs Al-Aziziyah Putra Gunungsari in the academic year 2016/2017.The results of this study indicate that the average score of students' statistical literacy levels seen from KD is 49.71 in the very low category for KD 3.1 and 60 in the low category for KD 3.2(Thirafi, 2017).Therefore, it is necessary to select and design the right learning in order to overcome these problems.

Statistical literacy is the ability or basic competence of a person in reading, understanding, interpreting, compiling, representing, processing, critically evaluating statistical information on data in everyday life. Statistical literacy emphasizes the aspect of understanding the information from the data obtained. The understanding includes an understanding of symbols and basic terms as well as other statistical tools. In addition, the ability in interpret and communicate the data has been obtained to be part of statistical literacy(Ben-Zvi & Garfield, 2008; Gal, 2002, 2019; Schield, 2017; Wallman, 1993). According to Iddo Gal (2002), statistical literacy indicators included: 1) Literacy Skills, the ability understood the reading of various non-prose texts, such as graphs, tables or symbols; 2) Statistical Knowledge, the ability understood why the data is needed and how the data can be produced, familiar with the basic terms and ideas related to descriptive statistics, display graphs and tables, understand the basic ideas of probability, and understand how the conclusion or statistical conclusion was reached; 3) Mathematical Knowledge, the ability understood the total of a large number of observations with concise quantitative statements (eg percent and average); 4) Context Knowledge, the ability put statistical messages in context, and 5) Critical Question, the ability was critically question published study (Gal, 2002, 2019; Jatisunda & Nahdi, 2020). The following described literacy indicators detail statistics used in this study:

Table 1. Aspect and indicator detail statistics

Aspect	Indicator
Literacy Skills	Reading data
	Finding information from data
	Interpreting data
Statistical Knowledge	Understanding concept of statistical
	Understanding term in statistical
	Writing Information
	Interpreting information
Mathematical Knowledge	Processing data
	Connecting and communicate processing data
Context Knowledge	Drawing conclusion from data
	Making decision from conclusion
Critical Knowledge	Providing and presenting the result of processing data
	Evaluating information critically from processing data

Self-Organized Learning Environment (SOLE) is a learning model in which students were self-organized in groups and learn to use computers connected to the internet with minimal teacher support (Dolan et al., 2013). Learning model of Self-Organized Learning Environment (SOLE) is a learning model that focused on supporting students in learning through well-structured questions, collaboration, and discovery. Self-Organized Learning Environment (SOLE) is a learning model designed to support independent education or independent learning (Komariah, 2020). The use of the learning model offered independent opportunities for students, supporting attitudes that were important in learning. This learning model required at least 90 minutes in one learning session (Mitra & Crawley, 2014).

Before learning begins, students make groups according to their own choice of at least four students. In addition, students also allowed to change groups according to their wishes and allowed to discuss with other groups. By leveraging Internet accessibility and the environment in the Self Organized Learning Environment (SOLE) learning model, the potential for authentic learning and twenty-first century skills building is ripe for development. Meanwhile, in this learning model, the teacher played a minimal role in learning, only as a facilitator and observer (Dolan et al., 2013; Mitra et al., 2010; Mitra & Crawley, 2014). The study conducted by Gina Weisblat, Elizabeth Stiles, and Jeffrey McClelan in 2019 entitled Does The Innovation Really Work?: Effectiveness of Self-Organized Learning Environment (SOLE) in the Classroom shows that the use of the Self-Organized Learning Environment (SOLE) learning model support students to develop learning skils in 21st century such as communication, literacy, presentation, collaboration and technology skills(Weisblat et al., 2019). One of them is statistical literacy ability. This learning model allows students to collaborate in groups, share and compare each other's opinions. Therefore, in this study, using the Self Organized Learning Environment (SOLE) learning model to create learning conditions and atmosphere that are interesting, cooperative, fun and not boring. This is what underlies the urgency of this study and the basis for believing that the Self Organized Learning Environment (SOLE) learning model can help improve statistical literacy. Based on this problems, the study is only limited to the statistical literacy analysis of students using the Self Organized Learning Environment (SOLE) learning model. The purpose of this study to describes student's statistical literacy ability using learning model of Self-Organized Learning Environment (SOLE).

RESEARCH METHOD

The study approach in this study used a mixed approach. The type of study used descriptive research with the aim of drawing, describing and interpreting students' statistical literacy skills using the Self Organized Learning Environment (SOLE) learning model, which analyzed descriptively. This study was carried out on the odd semester of the 2021/2022 academic year, precisely from October to November, by applying the Self Organized Learning Environment (SOLE) learning model with the object being observed, namely statistical literacy skills. The subjects of this study were 32 students in grade XII MA Muhammadiyah 2 Patean who were analyzed quantitatively to determine the proportion and percentage of 3 categories

or the level of statistical literacy. The categories are low, medium, and high categories. Furthermore, one subject selected randomly from each of the three categories that will be analyzed qualitatively. The subjects were E-6 in the low category, E-7 in the medium category, and E-16 in the high category. Statistical literacy ability is analyzed by each indicator on the aspects listed in table 1.

Data collection was carried out directly at Senior High School of Muhammadiyah 2 Patean using techniques of post-test, observation, interview, and documentation. Posttest scores were taken after the treatment in the form of implementing the Self Organized Learning Environment (SOLE) learning model was given. The posttest questions given were in the form of a test to measure statistical literacy skills quantitatively. Furthermore, documentation was taken from the answer sheet from the posttest before being observed for descriptive qualitative analysis. In a more in-depth analysis, interviews were conducted to support the analysis on the answer sheet. In this study, the data on students' ability scores were analyzed quantitatively descriptive in the form of percentages each category. Furthermore, the answer sheet of one student from each category was analyzed qualitatively descriptive accompanied by an interview about the answer. Miles, Huberman, & Saldana (2014: 32) described three steps in analyzing qualitative data, namely data condensation, data display, and verifying. After the data collected, the next data analysis process was to summarize, select the main points, focus on the important things by looking for themes and discarding things that are not related to the study. After the data presented by describing it briefly in the form of charts, tables, and descriptions, the conclusions can be drawn from the analysis that has been carried out and verified. In this analysis, to ensure the validity of the data analysis, data triangulation was carried out. That was a review by means of re-examination before and/or after the data is analyzed. Examination by means of triangulation is carried out to increase the degree of reliability and accuracy of the data.

RESULTS AND DISCUSSION

Statistical literacy in this study consisted of five aspects of literacy in various indicators. The five aspects were Literacy Skills, Statistical Knowledge, Mathematical Knowledge, Context Knowledge, and Critical Knowledge. The students' statistical literacy was analyzed and categorized according to the scores obtained by the student's ability on the final test. The provisions for categorizing statistical literacy were shown in the following table:

Table 2. Statistical literacy category provisions

Interval Score	Category
$Score < 72{,}6$	Low
$72{,}6 \leq Score < 82{,}7$	Medium
$Score \geq 82{,}7$	High

Based on the results of the statistical literacy test, the score analysis showed of the 32 students were in the class, there were 10 students who have low statistical literacy, 13 students who have moderate statistical literacy and 9 students who have

high statistical literacy. The following, the percentage of statistical literacy categorization based on post-test score analysis:

Table 3. Statistical Literacy Percentage

Category	Total Students	Percentage
Low statistical literacy	10	31,25%
Medium statistical literacy	13	40,625%
High statistical literacy	9	28,125%
Total	32	100%

The analysis showed that of the 32 students, 28.125% students have statistical literacy in the high category, 40.625% students have statistical literacy in the medium category, and the 31.25% remaining students were in the low category. Furthermore, students' statistical literacy was analyzed descriptively based on their ability category.

Statistical Literacy Students with low category (E-6)

a. Literacy skills

This aspect included indicators of reading data, finding information from data, and interpreting data. The following answer sheet contained answers that can be analyzed on the ability of E-6 subjects in the aspect of literacy skills:

Picture 1. Answer sheet of question a and b subject E-6

Based on the answer sheet of subject E-7, it appeared that the subject has no difficulty in finding the median of a class interval. However, the subject did not write down how it obtained the mean for each interval. As for question b, the subject can read the data that the highest frequency was 12. That way the subject can find information that the mode lies in that class with an interval of 61-70. Unfortunately, the subject was misinterpreted that the lower edge of the class was 60.5 instead of 65.5.

b. Statistical Knowledge

This aspect included indicators of understanding statistical terms and concepts, writing information, and interpreting information. The following was an analysis of the ability of the E-6 subject on the Statistical Knowledge aspect:

Picture 2. Answer sheet of question c subject E-6

> *Researcher: try to explain the meaning mode formula from your answer! What is Tb, d1, d2, and k?*
> *E-6   : Tb is lower edge,d I don't know ma'am. If k is class length*
> *Researcher: can you explain mean formula that you wrote?*
> *E-6   : I don't know ma'am*

Based on the answer sheet of question c and the interview's excerpt, subject E-7 had no errors in answering the questions. The subject can understand the terms mode and mean, and understand the concept of mode and mean. It was correct in writing the mean and mode formulas into his answer sheet even though it was incomplete. However, it was unable to interpret the information that it wrote in his answer sheet.

c. Mathematical Knowledge

Aspects of Mathematical Knowledge included indicators of managing data, as well as connecting and communicating data processing. The following was an analysis of the ability of the E-6 subject on the Mathematical Knowledge aspect:

Picture 3. Answer sheet of question d subject E-6

It appeared on the answer sheet, the subject cannot process the data and cannot connect the data processing in the form of the lower edge of the class to the data processing, it was the mode value of the data. Subject E-6 also did not do any calculations in this problem. Not only that, it also cannot connect data processing in the form of the median of each class into data processing, it was in the form of the mean value of the data.

d. Context Knowledge

This aspect included indicators of drawing conclusion from data and making decision from conclusion. The following answer sheet contained answers that can be analyzed on the ability of E-6 subjects in the aspect of context knowledge:

Picture 4. Answer sheet of question e subject E-6

Aspects of Context Knowledge included indicators of drawing conclusions from the data and making decisions from the conclusions. From the quote from the answer sheet, it was shown that subject E-6 can draw the conclusions but, it was not based on the results of processing the mean and mode of the previous question. Nor did it made a decision from that conclusion.

e. Critical Knowledge

Critical Knowledge aspects included indicators of giving, presenting the results of data processing and critically evaluating information from data processing. The following, it was an analysis of the ability of the E-6 subject on the Critical Knowledge aspect:

Picture 5. Answer sheet of question f subject E-6

Based on this answer, subject E-6 could not present the results of data processing in the form of mean and mode in the previous question. It was also unable to present the results of processing the data and lacking in expressing of the writing. It also did not write a critical evaluation of the information from the data processing results. In answering this question, the subject also wrote the answers in a concocted manner and did not match the results of data processing. It did not even do data processing.

Statistical Literacy Students with moderate category (Subject E-7)

a. Literacy Skills

This aspect included indicators of reading data, finding information from data, and interpreting data. The following answer sheet contained answers that can be analyzed on the ability of E-7 subjects in the aspect of literacy skills:

Picture 6. Answer sheet of question a and b subject E-7

Based on the answer sheet for subject E-7, it appeared that the subject has no difficulty in finding the median value of a class interval. However, the subject did not write how it obtained the mean values for each interval. As for question b, the subject can read the data that the highest frequency was 12. That way, the subject can find information that the mode lies in that class with an interval of 61-70. Subjects can also interpret the value of the lower edge of the class was 60.5. However, on the answer sheet, the subject did not write how it found the bottom edge value.

b. Statistical Knowledge

This aspect included indicators of understanding statistical terms and concepts, writing information, and interpreting information. The following was an analysis of the ability of the E-7 subject on the Statistical Knowledge aspect:

Picture 7. Answer sheet for question c subject E-7

According on the answer sheet for question c, subject E-7 had no mistakes in responding the questions. Subject can comprehend the terms mode and mean, then recognized the concepts of mode and mean and inaccurately writing information in the form of mode formulas. Although it was correct in writing the mean and mode formulas into the answer sheet, but it is not complete. It also could not interpret the information that wrote in its answer sheet.

> *Researcher: Try to explain the meaning of the mode formula of your answer!*
> *What is Tb, what are d1, d2 and k?*
> *E-7   : Tb is the lower edge, d1 is the highest frequency minus the previous frequency, while d2 is the highest frequency minus the frequency after it. If k is the length of class*
> *Researcher: Can you explain the mean formula you wrote?*
> *E-7   : In my opinion, sigma is the same as the total, Fixi is the frequency multiplied by the middle value, which was about 2a question. Then just add up everything. The one below is the total frequency*

According to the interview excerpts, it showed that the subject can comprehend the terms mode and mean, understand the concept of mode and mean, understand the terms lower edge, class length, and the difference in frequency between the mode class in the previous class and after it. Not only that, the subject can also detail each formula in detail, both the mode and the mean orally.

c. Mathematical Knowledge

Aspects of Mathematical Knowledge included indicators of managing data, as well as connecting and communicating data processing. The following was an analysis of the ability of the E-7 subject on the Mathematical Knowledge aspect:

It appeared on the answer sheet, the subject can develop the data but it cannot attach the data processing in the lower edge of the class to the data processing in the form of the mode value of the data. The calculation was incorrect in responding this question. Subject E-7 could not process the data to find the mean value. Not only that, it also cannot connect the data processing of the middle value of each class into data processing of the mean value of the data. The subject also did the calculation incorrectly so that the subject found an error in obtaining the mean value.

d. Context Knowledge

This aspect included indicators of drawing conclusion from data and making decision from conclusion. The following answer sheet contained answers that can be analyzed on the ability of E-7 subjects in the aspect of context knowledge:
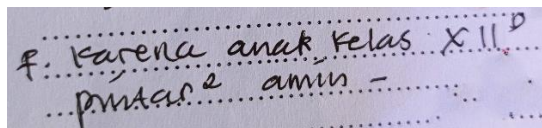

Picture 9. Answer sheet of question e subject E-7

Based on the answer, subject E-7 was mistaken in drawing conclusions based on the results of processing the mean and mode of the previous question. The reason is it was mistaken in processing the data. The subject gave the opinion that the class XI MA Muhammadiyah 2 Patean can reached MCC 71. Furthermore, from that conclusion, the subject can make a decision from that conclusion. Although not based on the data processing in the previous question. The following excepts from interviews conducted in order to detail this analysis:

Researcher	*: Number 2e, why did you answer "able"? What do you mean by your answer?*
E-7	*: Yes, it can reach MCC 71.*
Researcher	*: why?*
E-7	*: because if you look at the data, there are more who are above 71.*
Researcher	*: Okay, then why did you answer no?*
E-7	*: because of that, there is no need to do remedials, ma'am*
Researcher	*: why not?*
E-7	*: Yes, because most of them passed the KKM more than those who didn't pass the KKM*
Researcher	*: why is it not written in full?*
E-7	*: because I think it's clear, ma'am*

From the interview excerpt, it showed that subject E-7 can draw conclusions but not based on the results of processing the mean and mode of the previous question and made decisions from that conclusion. Even though it didn't write it down completely on its answer sheet, the subject said it verbally even though the subject was wrong in concluding.

e. Critical Knowledge

Critical Knowledge aspects included indicators of giving, presenting the results of data processing and critically evaluating information from data processing. The following, it was an analysis of the ability of the E-7 subject on the Critical Knowledge aspect:

Picture 10. Answer sheet of question f subject E-7

Based on this answer, subject E-7 could not present the results of data processing in the form of mean and mode in the previous question. It also could not present the results of the data processing even though the subject was not able to express it in writing. Although it did not write a critical evaluation of the information from the data processing results.

Statistical Literacy Students with high category (Subject E-16)

a. Literacy Skills

This aspect included indicators of reading data, finding information from data, and interpreting data. The following answer sheet contained answers that can be analyzed on the ability of E-16 subjects in the aspect of literacy skills:

Picture 11. Answer sheet of a and bd b questions subject E-16

Based on the answer sheet for subject E-16, it appears that the subject did not find it difficult. However, the researcher did not find out how the subject was able to obtain the mean values for each interval. In place for question b, the subject can read the data that the highest frequency is 12. The subject can find the information that the mode placed in that class with an interval of 61-70. Subjects can also interpret that the value of the lower edge of the class is 60,5. However, on the answer sheet, the subject did not write down how it found the lower edge value. This can be clarified by the following interview excerpts:

> *Researcher: How do you find the mean of each interval?*
> *E-16 : In fact there is a formula, ma'am, but I forgot. So, I wrote down all the numbers that in the interval then take the middle number.*
> *Researcher: Then, what did you find?*
> *E-16 : There are two numbers in the middle ma'am, so I take the middle of the two numbers*
> *Researcher: Can you explain more?*
> *E-16 : for the example, class 1 with an interval of 31-40. After I wrote down all the numbers in that interval, 31, 32, 33, up to 40. It turned out that the middle was 35 and 36. So, I take 35.5.*
> *Researcher: What next? Where can you get classes with intervals of 61-70?*
> *E-16 : Easy ma'am, just look for the class with the most frequency*
> *Researcher : Then, how come the lower edge is 60.5?*
> *E-16 : So, the lower limit is 61 ma'am, just reduce it by 0.5*

Based on the interview excerpts, it showed that the subject can read the data by obtained the information in it and interpreted it into further information. However, subject did not write it down in the answer sheet. The subject can obtain information that the highest frequency is 12. From this information, the subject can read the data that located the mode class with a lower limit of 61. The subject can also interpret that the lower edge is obtained from the lower limit of 61 minus 0.5. Thus, the subject found the lower edge of the mode class is 60.5.

b. Statistical Knowledge

This aspect included indicators of understanding statistical terms and concepts, writing information, and interpreting information. The following was an analysis of the ability of the E-16 subject on the Statistical Knowledge aspect:

Picture 12. Answer sheet of question c subject E-16

Based on the answer sheet for question c, subject E-16 has no doubts or errors in answering the questions. Subjects can understand the terms mode and mean, understand the concept of mode and mean, by being shown to write down information in the form of mode and mean formulas into the answer sheet even though it is incomplete. It cannot interpret information.

c. Mathematical Knowledge

Aspects of Mathematical Knowledge included indicators of managing data, as well as connecting and communicating data processing. The following was an analysis of the ability of the E-16 subject on the Mathematical Knowledge aspect:

Picture 13. Answer sheet of question d subject E-16

It appeared on the answer sheet, the subject can process the data and attach between data processing in the form of the lower edge of the class into data processing in the form of the mode value of the data. The calculation is also correct and there are no errors in answering this question. Subject E-16 can also process the data to find the mean value. It can also link data processing in the form of the middle value of each class into data processing in the form of the mean value of the data. The subject also performed calculation correctly so that it found the mean value without error. To find out whether subject E-16 can communicate the processing of the data, the following interview excerpt will support this analysis:

Researcher : What about the mode value of this data?
Do you have any difficulties in answering this question?
E-16   : No ma'am.
Researcher: Are you sure?
E-16   : Is there something wrong with my answer, ma'am?
Researcher: Just explain it to me first, how do you answer this question?
E-16   : Yes, it's just a matter of counting, ma'am, the lower edge is in the previous answer. it's clear the mode class frequency is 12, so this one just needs to be reduced by the frequency after and before.
Researcher: Okay, are you sure about your answer on this one? Are you sure the calculations are correct?
E-16   : Yes, ma'am, but I doubt the calculation. Because usually I'm not very careful.
Rese   archer: For the mean, how do you answer it?
E-16   : it's actually really easy like that, but I don't think I can do it if I don't use a new table to make it easier.

This interview excerpt showed that subject E-16 can communicate verbally in interview in the form of processing data that it has processed on its answer sheet.

d. Context knowledge

This aspect included indicators of drawing conclusion from data and making decision from conclusion. The following answer sheet contained answers that can be analyzed on the ability of E-16 subjects in the aspect of context knowledge:

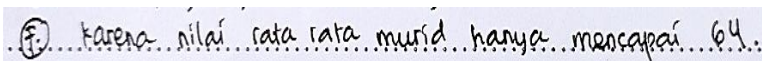Picture 14. Answer sheet e question subject E-16

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Based on these answers, subject E-16 can draw conclusions based on the results of processing the mean and mode of the previous question. It can be said that class XI MA Muhammadiyah 2 Patean students did not reach MCC 71. However, subject E-16 did not write it down completely, only wrote the word "no". Furthermore, from that conclusion, it can make a decision from that conclusion. The decision is that teachers must hold remedials simultaneously. The following excerpts from interview conducted in order to detail this analysis:

> *Researcher : Number 2e, why did you answer no? What do you mean by your answer?*
> *E-16   : it did not reach MCC 71 ma'am*
> *Researcher: why not?*
> *E-16   : because the mean value is 64, the mode value is 66.5. While the MCC is 71, ma'am.*
> *Researcher : Okay, then why is it not written in full?*
> *E-16   : because in my opinion, the important thing is that the word "no" represent it, ma'am*
> *Researcher : Okay, from that conclusion, what decision will be taken next?*
> *E-16   : So, the teacher should to do the remedial, ma'am*

From the interview excerpt, it showed that subject E-16 can draw conclusion based on the results of processing the mean and mode of the previous questions and make decisions from that conclusion. The two indicators were conveyed completely orally. Although he did not write down completely on the answer sheet.

e. Critical knowledge

Critical Knowledge aspects included indicators of giving, presenting the results of data processing and critically evaluating information from data processing. The following, it was an analysis of the ability of the E-16 subject on the Critical Knowledge aspect:

Picture 15. Answer sheet of question f subject E-16

Based on the answers, subject E-16 can present the result of data processing in the form of the mean and mode on the previous question. Subject can also present the results of processing the data even though subject was not able to express it in writing. Although subject did not write a critical evaluation of the information from the data processing results. Therefore, the following interview excerpts will clarify this analysis:

> *Researcher: Try to explain the meaning of your answer number 2f!*
> *E-16 : Yes, because the average was 64, so their average did not pass the test.*
>   *Even though the MCC is 71. So, the remedial must be held, ma'am.*

From the interview above, it can be seen that the subject E-16 can critically evaluate the information from the results of processing the data orally even though it is not written in the answer sheet. . Furthermore, the following are the results of a qualitative analysis of students' statistical literacy based on their ability categories:

Aspect statistical literacy	Statistical literacy category		
	Low category	**Medium category**	**High category**
Literacy skill	Able to read data, find information from data, but cannot interpret the data	Able to read data, find information from data, and interpret data	Able to read data, find information from data, and interpret data
Statistical knowledge	Able to understand the terms and understand the concept of mode and mean, by write down the information. However, it was unable to interpret the information.	Able to understand the terms and understand the concept of mode and mean. Although it did not write it down, it could interpret the information verbally.	Able to understand terms and understand the concept of mode and mean, by writing information in the form of formulas. However, he was unable to interpret the information.
Mathematical knowledge	Unable to process and relate data, as well as communicate data processing.	Able to process data but cannot connect and communicate data processing	Able to process data, and able to connect and communicate data processing
Context knowledge	Able to draw conclusions but not based on the results of data processing. It also cannot make a decision from that conclusion.	Able to draw conclusions and make decisions from those conclusions but not based on the results of processing the data.	Able to draw conclusions based on the results of processing the mean and mode and make decisions from these conclusions.
Critical knowledge	Unable to provide and present the results of data processing in the form of mean and mode. It also cannot critically evaluate the information from processing the data.	Unable to provide and present the results of data processing in the form of mean and mode. It also cannot critically evaluate the information from processing the data.	Able to provide and present the results of data processing in the form of mean and mode. It can critically evaluate the information from the data processing
Critical knowledge	Unable to provide and present the results of data processing in the form of mean and mode. It also cannot critically evaluate the information from processing the data.	Unable to provide and present the results of data processing in the form of mean and mode. It also cannot critically evaluate the information from processing the data.	Able to provide and present the results of data processing in the form of mean and mode. It can critically evaluate the information from the data processing

There was also a study that analyzed this ability, the study was carried out by Iyam Maryati and Nanang Priatna who analyzed the statistical literacy of students at Madrasah Tsanawiyah Negeri 1 Garut Regency in the Academic Year of 2016/2017 for VIII grade. The study showed that the statistical literacy of students categorized as low because it is still below the minimum completeness criteria. In this study, students' ability to read statistical data was 35%, students' ability to understand concepts was 32%, students' ability to communicate data processing processes was 30%, and students' ability to present the results of data processing was 28% (Maryati & Priatna, 2018). The study only yielded a percentage for each indicator. However, it was not described in detail as in this study. Another study was also conducted by Ghozian Thirafi who analyzed the statistical literacy of grade IX students at MTs Al-Aziziyah Putra Gunungsari in the academic year of 2016/2017. The results of this study indicated that the level of

statistical literacy of students is 48.6% in the very low category, 25.7% in the low category, 20% in the medium category, 5.7% in the high category, and 0% in the very high category. the level of statistical literacy of students seen from KD is 49.71 in the very low category for KD 3.1 and 60 in the low category for KD 3.2 (Thirafi, 2017). This study analyzed the percentage of each category only, does not analyze every indicator and aspect of its ability.

CONCLUSION

The statistical literacy ability of students using learning model of Self Organized Learning Environment (SOLE) by descriptive quantitative has been analyzed and results that of the 32 students in the class, 28.125% of students have statistical literacy in the high category, 40.625% students have statistical literacy in the medium category, and 31.25% of students have statistical literacy in the low category.

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