The Application of Situation-Based Learning Strategy to Improve Literacy Skills, Mathematical Problem-Solving Ability and Mathematical Self-Efficacy at Senior High School Students

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This research employs a mixed methodology with explanatory sequential design. The population of this study were all students of class X SMA Pasundan 7 Bandung. This study aims to examine differences in the increase in literacy skills, mathematical problem-solving abilities and mathematical self-efficacy of students. Also, this study examined the relevance of early mathematical abilities (high, medium, low) by increasing students’ literacy skills and mathematical problem-solving abilities. The instruments used in this study were tests of literacy ability, mathematical problem-solving ability tests, self-efficacy scales, observations, and student interviews. Data was analyzed by the Mann-Whitney test, Kruskal Wallis H. Test. From the results of data analysis, it was found that: (1) Increased mathematical literacy skills of students who obtained SBL learning strategies were not much higher than students who had expository learning based on the whole student group. (2) Improvement of mathematical problem-solving abilities of students who obtain SBL learning strategies is significantly higher than students who obtain expository learning. (3) Increased mathematical literacy skills of students who obtain SBL learning strategies are not much higher than students who obtain expository learning reviewed from EMA (high, medium, low). (4) Improvement of mathematical problem-solving abilities of students who obtain an SBL learning strategy is significantly higher than students who obtain expository learning in terms of EMA (high, medium, low). (4) There is no correlation between literacy skills, mathematical problem-solving and self-Mathematical efficacy of students who obtain SBL learning strategies and students who obtain expository learning. (5) The description of the mathematical self-efficacy of students who obtain
SBL learning strategies and students who obtain expository learning show a positive attitude.

Keywords: Situation-Based learning strategy, Mathematical literacy ability, mathematical problem-solving ability, Mathematical self-efficacy.

Introduction

Mathematical education essentially has two directions of development, namely to meet the needs of the present and the future. With respect to today's needs, mathematics learning leads to an understanding of mathematics and other sciences, in terms of future needs – this has a broader meaning, namely to provide logical, systematic, critical and accurate reasoning and open-minded abilities that are indispensable in everyday life in order to be prepared to face an ever-changing future (Sumarmo, 2003).

The OECD states that mathematical literacy is the individual's capacity to recognize and understand the role that mathematics plays in real life, and be able to provide appropriate judgments, utilizing mathematics that meets the needs of a constructive, caring[2]”... Furthermore, the definition of mathematical literacy is the ability of individuals to formulate, apply, and interpret mathematics in various contexts. This ability includes mathematical reasoning and the ability to use mathematical concepts, procedures, facts, and mathematical functions to describe, explain and predict a phenomenon. In general, students who demonstrate mathematical literacy skills in PISA test scores have the ability to analyze, justify, and convey ideas effectively, formulate, solve and interpret mathematical problems in various forms and situations (Sugiyono, 2016).

In addition to the importance of improving target mathematical literacy skills, a further need for attention in mathematics learning is the improvement of mathematical problem-solving skills. The five standard mathematical abilities are based on the understanding that mathematics and problem solving are important for students, not only when studying mathematics but also because of the needs of life problems that require mathematical problem solving to solve them (Coban, 2015). Furthermore, according to Carson (2017) problem-solving is a process in which a person uses his knowledge, skills, and understanding in application to new situations. As for problem-solving as a core and main process in a mathematics curriculum, it means learning mathematics prioritizes the process and the strategies students make in solving them rather than just results so that the
process and strategy skills in solving these problems become basic mathematical abilities. In addition to matters relating to curriculum and learning objectives, (Huang et al., 2012) reveal the fact that student success in problem-solving affects the success and motivation of students in mathematics. Because of the urgencies that have been explained, problem-solving has become an issue that has continued to gain interest since its inception in the context of mathematical literacy circa 2003 in various conferences, workshops, and academic forums (Cai, 2015) and (Ifamuyiwa and Ajilogba, 2012).

This study thus not only examined the cognitive aspects in mathematics learning, but also the affective aspects, including self-efficacy which is expected to improve students' mathematical abilities. Self-efficacy of students is one of the important dimensions in solving mathematical problems. According to the Minister of National Education Regulation No. 54 of 2013 (Subaidi, 2016) concerning Graduates' Competency Standards for Primary and Secondary Education Units, Self efficacy in mathematics learning is a required skill. The development of self-efficacy in the mathematics curriculum states that mathematics must instil an attitude of respect for the usefulness of mathematics in life. Seeding these attitudes harnesses such capacities as feeling knowledgeable, being engaged, showing interest in learning mathematics and demonstrating resilient and confidence in problem-solving.

The importance of developing students' self-efficacy in solving mathematical problems is attributed to the following factors: (1) the process of learning mathematics in class is strongly influenced by students' self-efficacy towards mathematics (Shadiq, 2007). (2) the self-efficacy students form as they develop mathematical abilities in solving problems (Bandura, 1993). (3) Mathematical learning is assumed by most students as a difficult, stressful, and boring lesson, where with high self-efficacy these problems can be reduced or even eliminated by students (Leonard and Supardi 2010) and (Creswell, 2016).

Self-efficacy can be obtained, changed, enhanced or reduced, through one combination of four sources, namely authentic experience (authentic mastery experiences), experience of other people (vicarious experience), social approach (social persuasion), and psychological (emotional / psychological states) (Bandura, 1997) and (Alwisol, 2015) Self-efficacy will gradually increase in line with increasing ability and increasing related experiences (Bandura, 1997). According to (Warwick, 2008) teachers can use self-efficacy to improve and develop students' abilities in mathematics learning. Given that self-efficacy is influenced by experience, (Ozgen, 2013) argues that it is very important to make mathematics more concrete by providing situations and problems related to the real world as much as possible to develop self-efficacy.
Based on the description above, it is necessary to learn mathematics that can help improve literacy and mathematical solving skills and create a learning atmosphere that attracts students' interest so that it can improve students' self-efficacy. Alternative learning that can be used by teachers in teaching mathematics to students so that they are actively involved in learning is through the use of situation-based learning (SBL) strategies. In its implementation, SBL consists of 4 stages of the learning process, including (1) creating mathematical situations; (2) posing a mathematical problem; (3) solving mathematical problems; (4) applying (Xia et al., 2007) and (Isrok'atun and Tiurlina, 2015).

In addition to learning factors, other factors are thought to contribute to student abilities in learning mathematics, namely, students' initial mathematical abilities are classified into three groups: high, medium, and low groups. According to (Ruseffendi, 2006) each student has a different ability to understand mathematics, in any target group of students, there will always be a range of abilities from high to medium and low groups. This is because students' abilities, including abilities in mathematics, spread normally. Therefore, the choice of learning environment, in this case, the learning strategy, chosen must be carefully considered. The selection of learning strategies must be able to accommodate the heterogeneous initial mathematical abilities of students so that it can be determined whether literacy improvement and mathematical problem-solving in students who obtain an SBL learning strategy is higher than students who obtain expository learning, both overall and in terms of EMA (high, medium, low).

**Research Methods**

This study employs a mixed methodology with an explanatory sequential design, which applies the SBL learning strategy. This method is used to see whether there is an increase in literacy skills, mathematical problem-solving abilities, and to draw a picture of self-efficacy from the perspective of two groups of students who receive different treatments. The experimental group was given special treatment with SBL learning strategies, while the control group was given expository learning. The characteristics of a sequential explanatory research design were found in mixed research methods with quantitative data collection and analysis carried out in the first stage, then followed by collection and analysis of qualitative data at the stage second, and in the third stage the combination and interpretation of the overall research results (Hye and Jafri, 2011) was made with quantitative and qualitative data analyzed separately (Faisal et al., 2017).

The research subjects went naturally, group learning followed the division of existing classes and had used non-equivalent control groups, such as the following in Figure 1 below.
Figure 1. Quantitative Research Design

<table>
<thead>
<tr>
<th></th>
<th>O</th>
<th>X</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiment class</td>
<td>O</td>
<td>X</td>
<td>O</td>
</tr>
<tr>
<td>Control class</td>
<td>O</td>
<td>O</td>
<td></td>
</tr>
</tbody>
</table>

Information:
O : Giving Pretest and posttest literacy skills and mathematical problem-solving abilities for experimental class and control class
X : Situation-Based Learning

The sample from this study consisted of 2 classes with a total of 47 people. The first class was an experimental class with 24 students who obtained mathematics learning using the SBL strategy and the second class as a control class with 23 students who had expository learning.

Results and Discussion of Research

I. Research Results

Analysis of Mathematical Literacy Ability

N-Gain Analysis of Mathematical Literacy Capability Based on the Entire Class

N-gain value analysis normalized students' mathematical literacy abilities to answer hypothesis 1 related to "increased mathematical literacy abilities of students who obtained a higher SBL strategy than students who received expository learning based on the whole student". The data used in this analysis are normalized n-gain value data from students' literacy abilities obtained from the pre-test and post-test values after being given different treatments in the experimental class and the control class using the n-gain formula. The following are presented in Table 1 below by the results of statistical analysis n-gain of students' mathematical literacy abilities based on the overall students.

Table 1: Summary Result N-Gain Analysis of Mathematical Literacy Capability Based on Overall Students

<table>
<thead>
<tr>
<th>Class</th>
<th>N</th>
<th>Descriptive</th>
<th>N-Gain</th>
<th>Test Statistical</th>
<th>Mann</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Average</td>
<td>S.D</td>
<td>Sig. Normal</td>
<td>Sig. Homogen</td>
<td></td>
</tr>
<tr>
<td>Exerime</td>
<td>24</td>
<td>0.63</td>
<td>0.08</td>
<td>.092 Normal</td>
<td></td>
<td>Ho reject</td>
</tr>
<tr>
<td>Control</td>
<td>23</td>
<td>0.35</td>
<td>0.13</td>
<td>.186 Normal</td>
<td>.017  Normal</td>
<td>Ho reject</td>
</tr>
</tbody>
</table>

Note: \( \alpha = 0.05 \); S.D = standard deviation

The statistical results of the gain in mathematical literacy skills based on the overall
students showed in the experimental class that the average was 0.63, based on the N-Gain criteria included in the medium category, as well as the control class 0.35, meaning that it was in the medium category. Because both classes are normally distributed and one class is not homogeneous, then the difference test will be carried out, namely the Mann-Whitney test. In the Mann-Whitney test, the Asymp value was obtained. Sig. 0.000 <0.05, then Ho is rejected. Thus the conclusion is "there are differences in the increase in mathematical literacy skills of students who obtain a higher SBL strategy than students who receive expository learning based on the whole student.

**N-Gain Analysis of Mathematical Literacy Capabilities Viewed by EMA (High, Medium, Low)**

After the tests were conducted on the experimental class and the control class, the data was processed. From the data of the test results of the two classes, the categorization of the students' initial mathematical abilities was carried out with the predetermined criteria, namely the high level (score: \( x \geq x + SD \)) in the experimental class as many as 6 students, the control class as many as 7 students, level medium (acquisition of values: \( x -SD \leq x < x + SD \)) in the experimental class of 11 students, control class 10 students, and low level (acquisition of values: \( x <x + SD \)) in the experimental class as many as 7 students, and control class 6 students. The aim was to answer hypothesis 3 related to "Increasing the mathematical literacy ability of students who obtain the SBL strategy is higher than students who obtain expository learning in terms of EMA (high, medium, low). The following as presented in Table 2 below will describe the results of statistical analysis n-gain mathematical literacy skills reviewed based on EMA (high, medium, low).

**Table 2:** Summary Result N-Gain Analysis of Mathematical Literacy Capabilities Viewed by EMA (High, Medium, Low)

<table>
<thead>
<tr>
<th>Class</th>
<th>N</th>
<th>EMA</th>
<th>Descript Mean</th>
<th>N-Gain Grade</th>
<th>Test Statistical</th>
<th>Kruskal Wall</th>
<th>Concluion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sig.</td>
<td>Normal</td>
<td>Sig. Homogen</td>
</tr>
<tr>
<td>Experim</td>
<td>6</td>
<td>High</td>
<td>.6</td>
<td>Mediui</td>
<td>.839</td>
<td>Normal</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Mediui</td>
<td>.6</td>
<td>Mediui</td>
<td>.288</td>
<td>Normal</td>
<td>.528</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Low</td>
<td>.6</td>
<td>Mediui</td>
<td>.454</td>
<td>Normal</td>
<td>.025</td>
</tr>
<tr>
<td>Control</td>
<td>7</td>
<td>High</td>
<td>.3</td>
<td>Mediui</td>
<td>.985</td>
<td>Not</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Mediui</td>
<td>.3</td>
<td>Mediui</td>
<td>.346</td>
<td>Normal</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Low</td>
<td>.3</td>
<td>Mediui</td>
<td>.546</td>
<td>Normal</td>
<td>.025</td>
</tr>
</tbody>
</table>

Note: \( \alpha = 0.05 \)
The statistic-gain results of mathematical literacy abilities were reviewed based on EMA (high, medium, low) showing descriptive tests in the experimental class and the control class in the "moderate" n-gain category. Even though the two groups are in the same category, the achievement in the experimental class is better. Because both classes are normally distributed and one class is not homogeneous, then a different test will be carried out, namely the Kruskal Wallis H. test. In the Kruskal Wallis H test, the Asymp value is obtained. Sig.0.000 <0.05, then Ho is rejected. Thus the conclusions were obtained. The increase in mathematical literacy abilities of students who obtained a higher SBL strategy than students who obtained expository learning was viewed from EMA (high, medium, low).

Analysis of Mathematical Problem-Solving Capabilities (MPSC)

MPSC N-Gain Analysis Based on Overall Students

Inference analysis of normalized N-gain values of KPMM of students to answer hypothesis 2 is related to "an increase in mathematical problem-solving abilities of students who obtain an SBL strategy significantly higher than students who receive an expository learning based on the whole student". The data used in this analysis are normalized n-gain value data from MPSC students obtained from the pretest and posttest scores after being given different treatments in the experimental class and the control class using the n-gain formula. The following results of the MPSC n-gain statistical analysis of students based on the overall students are presented in Table 3 below.

Table 3: Summary Result Analysis of MPSC N-Gain Based on Overall Students

<table>
<thead>
<tr>
<th>Class</th>
<th>N</th>
<th>Descriptive N-Gain</th>
<th>Statistical Test</th>
<th>Mann-Whitney</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Average</td>
<td>S.</td>
<td>N-Gain</td>
<td>Sig.</td>
</tr>
<tr>
<td>Experime</td>
<td>24</td>
<td>0.73</td>
<td>0.13</td>
<td>High</td>
<td>.001</td>
</tr>
<tr>
<td>Control</td>
<td>23</td>
<td>0.33</td>
<td>0.16</td>
<td>Medium</td>
<td>.301</td>
</tr>
</tbody>
</table>

Note: $\alpha = 0.05$; S.D = standard deviation

The MPSC n-gain statistic results are based on the overall students, in the descriptive test shows that the experimental class gets an average of 0.73, including in the high category, in contrast to the control class obtaining an average of 0.33 including the medium category. Because one class is not normally distributed, then the Mann-Whitney test will then be carried out. The Mann-Whitney test obtained the Asymp value. Sig. (2-tailed) <0.05, then Ho is rejected. Thus the conclusion is that the increases in mathematical problem-solving abilities of students who obtained the SBL strategy were significantly higher than for students who received expository learning based on the overall student group.
**MPSC N-Gain Analysis Reviewed by EMA (High, Medium, Low)**

The same EMA grouping was conducted with data on mathematical literacy abilities. The following, presented in Table 4 below, are the results of n-gain analysis MPSC reviewed based on EMA (high, medium, low) with the aim of answering hypothesis 4 related to "increased mathematical problem solving abilities of students who obtain a higher SBL strategy than students who obtain expository learning in terms of EMA (high, medium, low).

**Table 4:** Summary Result N-Gain MPSC Analysis Reviewed by EMA (High, Medium, Low)

<table>
<thead>
<tr>
<th>Class</th>
<th>N</th>
<th>EMA Category</th>
<th>Descriptive Average</th>
<th>N-Gain Category</th>
<th>Statistical Test</th>
<th>Kruskal Wallis H</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experim</td>
<td>6</td>
<td>High</td>
<td>.7 High</td>
<td>.026</td>
<td>Not Normal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Medium</td>
<td>.7 High</td>
<td>.196</td>
<td>Normal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Low</td>
<td>.6 Medium</td>
<td>.029</td>
<td>Not Normal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>7</td>
<td>High</td>
<td>.3 Medium</td>
<td>.703</td>
<td>Normal</td>
<td>.00</td>
<td>Ho</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Medium</td>
<td>.3 Medium</td>
<td>.981</td>
<td>Normal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Low</td>
<td>.2 Low</td>
<td>.131</td>
<td>Normal</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: $\alpha = 0.05$

The results of the statistical n-gain MPSC reviewed based on EMA (high, medium, low) descriptive test showed that the experimental class obtained an average of 0.75 in the high category, 0.75 medium, and 0.65 low. While the control class obtained an average of 0.33 in the high category, 0.37 medium, and 0.26 low. Because one of the two groups has a category that is not normally distributed, the Kruskal Wallis H test was then carried out. In the Kruskal Wallis H test, the Asymp value is obtained. Sig. (2-tailed) <0.05, then Ho is rejected. Thus it can be concluded that the increase in mathematical literacy skills of students who obtain a higher SBL strategy than students who obtain expository learning is viewed from EMA (high, medium, low).

**Analysis of the Self-efficacy Scale of the Experimental Class and Control Class**

The following results of the descriptive test percentage of the data are presented in Table 5 below and detail the mathematical self-efficacy scale of the control class and the experimental class each indicator and overall.

**Table 5:** Descriptive Analysis and Interpretation Analysis of Percentage of Student Mathematical Self-efficacy Scale Data.
The statistical results show that the average self-efficacy of the experimental class is greater than in the control class. Furthermore, in the results of the interpretation of the percentage of students' mathematical self-efficacy scale data per indicator, the experimental class obtained a percentage interpretation on the indicators of magnitude, strength, and generality to get 42%. This means that almost half of the students have confidence in overcoming difficulties, showing self-efficacy in a particular domain or as applied in various activities and situations, indicating that self-efficacy effects performance in a variety of activities and situations in mathematics learning, as well as acquisition in the control class which is 34%. Thus it can be concluded that the picture of mathematical self-efficacy of students who obtained the SBL strategy and students who obtained expository learning showed a positive attitude.

Data Analysis of MLC Correlation, MPSC, and Mathematical Self-efficacy of Experimental Classes and Control Classes

The following, presented in Table 6 below, is the data analysis of correlation of mathematical literacy ability and MPSC, and self-efficacy of mathematics in the experimental class with SBL strategy and control class by obtaining expository learning using the Spearman's Rho Correlation test. This is done to answer hypothesis 4 related to "there is a correlation between literacy ability, mathematical problem solving and mathematical self-efficacy of students who obtain SBL learning strategies and students who obtain expository learning".

Table 6: Analysis Correlation of MLC, MPSC, and Mathematical Self-efficacy of Experimental Class and Control Class

<table>
<thead>
<tr>
<th>Class</th>
<th>N</th>
<th>Descriptive</th>
<th>Indicat</th>
<th>Overall</th>
<th>Descriptio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Average</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>S.D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experim</td>
<td>24</td>
<td>53.81</td>
<td>42</td>
<td>42%</td>
<td>42</td>
</tr>
<tr>
<td>Control</td>
<td>23</td>
<td>49.70</td>
<td>35</td>
<td>34</td>
<td>34</td>
</tr>
</tbody>
</table>

Note:
MLC = Mathematical Literacy Capability
MPSC = Mathematical Problem-Solving Capabilities
MSC = Mathematical Self-Efficacy

α = 0.05
Statistical results of Spearman's rho correlation bivariate correlation data correlation of mathematical literacy ability, MPSC, and mathematical self-efficacy scale in the experimental class and control class, obtained the Sig. (2-tailed)> 0.05 means Ho is accepted or there is no correlation. Thus it can be concluded that there is no correlation between literacy ability, mathematical problem solving and mathematical self-efficacy of students who obtain SBL learning strategies nor for students who obtain expository learning.

**Discussion**

This study investigated hypotheses regarding the improvement of students' mathematical literacy skills in formulating, applying, and interpreting mathematics in various contexts, also improving mathematical problem solving skills using their knowledge, skills and understanding to be applied to different situations, and further looked at individual self-efficacy regarding student ability to organize and completing various tasks in mathematics learning (OECD, 2013), (Carson, 2017), (Xia et al., 2007). As a result, this study examined high school students' problems in mathematical literacy skills, problem-solving skills, and self-efficacy and their correlation, using the SBL learning strategy.

The results of the research in Table 1 and Table 2 above show that students' mathematical literacy skills based on the whole class as well as being reviewed based on EMA (high, medium, low) in the experimental class that obtained SBL strategy learning were better than students in the control class who received expository learning, even though it is in the same n-gain criteria, namely "moderate" but the achievement of the average value in the experimental class is higher but not significant. The research findings in Table 3 and Table 4 above also show that an increase in MPSC based on the overall students in the experimental class who obtained an SBL learning strategy was significantly higher than the students in the control class who obtained expository learning. Different MPSC students were reviewed according to EMA (high, moderate, low) in Table 4. The increase in MPSC was significant only for students with high and medium EMA categories in the experimental class, while in the EMA category it was at the same n-gain but higher than in the control class students who received learning expository but not significant.

The findings of this study support the theory presented by (Isrok’atun and Tiurlina, 2015) that SBL learning strategies in the initial steps of the mathematical situation presented by the teacher together with the student’s ability to identify and solve problems is reflective of the capacity to apply mathematical literacy skills in solving different problems. This result is also supported by the results of interviews from several students based on high,
medium, and low categories who state that the SBL learning strategy is more effective because of the detailed step by step format with the help of student worksheets which also makes it easier to understand the material provided.

The research findings for students' mathematical self-efficacy from the results of the analysis in Table 5 above illustrate how when the learning process took place, the experimental class students who obtained the SBL strategy were very enthusiastic during the learning process, as demonstrated by active engagement in group work, asking questions, active response to group work and resultant self-confidence in the quiz participation, in contrast to the control class that obtained expository learning, it was seen that these students lacked enthusiasm in carrying out learning. It is seen that students who get active expository learning are active students, who are engaged in learning in a classroom that is not monotonous and boring. This means that the learning strategy models mathematical thinking in that students must actively seek, ask and explore insights about their understanding of the problem situation presented by the teacher through the worksheet of students, with the help of friends who are in their group, and also with the help of the teacher. This is in line with opinion (Subaidi, 2016) and theory (Bandura, 1993) which report that with high self-efficacy, generally a student will find learning easier and have potential to succeed beyond the exercises given to him, so that the final results of the learning are reflected in his academic achievements which tend to be higher than for students who have lower self-efficacy.

The research findings for correlation show that there is no correlation between mathematical literacy ability, MPSC, and mathematical self-efficacy scale either in the experimental class or in the control class. This is due to several factors such as when the data collection in the field is not appropriate as the students are in the classroom. This is shown in the correlation analysis Table, 10 sig values greater than the table price so there is no correlation.

**Conclusion**

From the results of the data, it was found that: (1) Increased mathematical literacy skills of students who obtained the SBL strategy was not much higher than students who obtained expository learning based on the overall student group. (2) Increased mathematical problem-solving abilities of students who obtained SBL strategies was significantly higher than students who obtained expository learning based on the overall student group. (3) Improvement of mathematical literacy skills of students who obtain the SBL strategy was not much higher than students who obtained expository learning in terms of EMA students (high, medium, low). (4) Improvement of mathematical problem-solving abilities of students who obtain an SBL strategy is significantly higher than students who obtain
expository learning in terms of EMA student (high, medium, low). (4) There is no correlation between literacy skills, mathematical problem solving and self-efficacy for Mathematical students who obtain SBL learning strategies and students who obtain expository learning. (5) The description of the mathematical self-efficacy of students who obtain SBL strategies and students who obtain expository learning show a positive attitude.

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