Effectiveness of Multi-Matobe Integration in Social Studies Learning to Enhance Critical Thinking Skills

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Abstract: This study aims to analyze the effectiveness of the Multi-Matobe learning strategy in enhancing elementary-school students’ critical thinking skills. The research population was elementary school students in Salatiga, Indonesia. Using purposive sampling, 160 students were chosen as samples. The research has a Randomize Pretest-Posttest Control Group Design. Students’ critical thinking skills are measured by a validated test containing real religious tolerance issues. Data were analyzed using Paired Samples t-test. The results showed that the integration of Multi-Matobe learning is effective in enhancing students’ critical thinking skills. The contribution of this research is that students can think critically and have a tolerance to face global competition by integrating the Multi-Matobe strategy in schools.

Keywords: strategy; multicultural; tolerance; social studies learning; critical thinking


INTRODUCTION

As a multicultural country, Indonesia has many tribes, cultures, customs, languages, and religions that live and develop in social situations (Akova & Kantar, 2021). This diversity emerges two different and opposing potentials: positive potential, as in being proud of one homeland, and negative potential, as in being prone to causing clashes, conflicts, and divisions (Caputo et al., 2018; Spencer-Oatey & Dauber, 2019). Achieving a multicultural country’s stability requires a systematic pedagogical method through a school system that pays attention to elements of local culture and religion (Miftah, 2016; Sulaiman, 2021), such as implementing multicultural education (Tabroni et al., 2022; Zhao et al., 2020). In multicultural education, an educator is not only required to teach a subject but also must inculcate moral values in students, such as democratic, humanist, and inclusive diversity values, so that educational outputs can be applied in their social life (Karacabey et al., 2019; Kartikawati, 2019; Yuhonis et al., 2020). Schools have a significant role in inculcating multicultural values through learning models and approaches. Therefore, this research needs to investigate Multi-Matobe integration in social studies learning to be a reference for educational institutions. In this case, Multi-Matobe is multicultural based on religious tolerance.

Critical thinking skills are significant for preparing students to face global competition (Cáceres et al., 2020). The educational law states that students’ critical thinking skills significantly affect their competence and criticality when facing social issues (Suardana et al., 2018). Many studies show that the critical thinking skills of Indonesian students in social studies learning are apprehensive. Social studies learning has the potential to develop character (Komalsari & Saripudin, 2018; Maba et al., 2018). The Multi-Matobe learning strategy requires students to explore their ability to enhance their critical thinking skills to become a democratic and responsible society (Siebers, 2019; Swalwell & Payne, 2019). The effectiveness of the Multi-Matobe learning strategy on critical thinking skills is tested by giving students real social issues regarding religious tolerance in our environment. Students are allowed to map and determine problem priorities before conducting social investigations about tolerance issues (Behery et al., 2016; Conklin, 2010; Fahmi et al., 2019).

This study aims to analyze the effectiveness of the Multi-Matobe learning strategy in enhancing elementary-school students’ critical thinking skills. Multicultural societies include various ethnicities, races, languages, cultures, and religions (Parkhouse et al., 2019). It aims to build cooperation, equality, and appreciation of an increasingly complex world (Sipayung & Dwiningrum, 2020). Multiculturalists can see differences, work together positively with others, and continue to be aware of all forms of attitudes that can reduce multiculturalism (Nguyen et al., 2018; Raihani, 2018). In the steps of the Multi-Matobe learning strategy, multiculturalism can be seen in the step of student orientation on problems, mapping and prioritizing problems, social investigations of religious tolerance issues, group and classical discussions, and the development and
presentation of work (Muizzuddin, 2021). The Multi-Matobe strategy can enhance students' critical thinking skills through the learning steps. When students are given a problem, they do orientation and map based on the priority of the given problem. Next is conducting a social investigation of various religious tolerance issues. The investigation results are communicated in group and classical discussions before finally being presented as a work. Some activities are conducted to formulate and solve the problem through social investigations concerning religious tolerance issues to optimize the students' critical thinking skill training. It aims to maximize critical thinking skills. It is inversely proportional if students are only taught using various lecture strategies. If the teacher becomes dominant in learning, students will be more passive in waiting for instructions.

**METHODS**

This research was quasi-experimental with a Randomized Pretest-Posttest of Control Group Design. During the experiment, the students were divided into two treatment classes: one class was taught using a Multi-Matobe strategy, and one class was taught using a conventional strategy. Students took a pretest and posttest before and after treatment to measure their ability to think critically regarding issues of religious tolerance. The treatment of learning strategies was given thrice in each class. The duration of each treatment was 3x35 minutes. Table 1 presents the research design.

| Table 1. Randomized Pretest-Posttest Control Group Design |
|-------------|-------------|-------------|-------------|
| **Experimental Class** | R | O | X | O |
| **Control Class** | R | O | C | O |

The research population was 640 elementary school students in Salatiga, Indonesia. Using purposive sampling, 160 students from four classes were chosen as samples. The class was determined using the entire group by testing the equality of the treatment class using the base value of the card from the previous study. Test for class equivalence used ANOVA. The results of the ANOVA test showed that the p-value (0.253) was more significant than 0.050, so it was concluded that the class used for treatment was in equal initial conditions. Statistical analysis techniques are used in this study: (1) ANOVA test to analyze the difference in the average between the experimental and control groups; and (2) Paired Samples t-test to analyze the difference in mean before and after treatment in the experimental and control classes. Before statistical analysis to test the hypothesis, normality and homogeneity tests were performed to test the basic assumptions. Students' critical thinking skills are measured by an essay test containing real religious tolerance issues. The quality of critical thinking skills was assessed using the critical thinking skill rubric developed by the researcher. Two experts who assessed the accuracy of religious tolerance issues and critical thinking aspects validated the test and the rubric. The experts stated that the test and the rubric were valid and suitable for data collection.

The Multi-Matobe strategy was used in the experimental class and varied lectures in the control class. The researchers themselves developed the steps of the Multi-Matobe learning strategy through development research. The steps for developing the Multi-Matobe learning strategy refer to Creswell (2009) & Daniel and Paul (2019). The lecture class steps vary following the usual learning activities in the classroom, with the teacher's dominance in explaining the material to students. Three experts evaluated the learning resources that researchers had developed. The feasibility test was carried out to assess the accuracy of the learning tools on Multi-Matobe steps and critical thinking skills. The learning materials were feasible, according to the assessment results. The teacher received training on how to use the Multi-Matobe learning tools prior to the experiment. The purpose of this training is to make sure that partner teachers are using Multi-Matobe learning strategies throughout treatment with accuracy and consistency. Two observers supervised and assessed the teacher's consistency in implementing the Multi-Matobe strategy in the classroom.

**RESULT AND DISCUSSION**

Table 2 presents the paired samples t-test results of the control class’ pretest and posttest to analyze the Multi-Matobe learning strategy on critical thinking skills.
Table 2. The Results of the Paired Sample T-Test Analysis of Research Data

<table>
<thead>
<tr>
<th>Paired differences</th>
<th>mean</th>
<th>Std, Deviation</th>
<th>Std, error mean</th>
<th>95% confidence interval of the difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest control class-posttest control class</td>
<td>-2.45313</td>
<td>3.50002</td>
<td>39131</td>
<td>-3.23202</td>
<td>-1.67423</td>
<td>-6,269</td>
<td>79</td>
</tr>
</tbody>
</table>

Table 3. The t-test results of the pretest and posttest data of the experimental class

<table>
<thead>
<tr>
<th>Paired differences</th>
<th>mean</th>
<th>Std, Deviation</th>
<th>Std, error mean</th>
<th>95% confidence interval of the difference</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest experimental class-posttest experimental class</td>
<td>-3.93125</td>
<td>2.72528</td>
<td>30470</td>
<td>-4.53773</td>
<td>-3.32477</td>
<td>12,902</td>
<td>79</td>
</tr>
</tbody>
</table>

Based on the t-test results, the average pretest was 71.31 and increased to 75.24 during the posttest, so the increase was 3.93. The t-test also shows that the t-count is 12.902 with a significance level of 0.00. 1.99045 is the t-table value with a significance level of 5%. As a result, the t-count > t-table value is 12.902 > 1.99045 and the significance level is 0.000 (0.05).

Additionally, the posttests in the experimental class and the control class must be subjected to an independent samples t-test. It seeks to establish whether there was a statistically significant difference between the experimental and control classes' posttest results. The analysis's findings were deemed significant if t-count > t-table, sig value 0.05, and 5% significance level were met. The independent samples t-test results on the pretest and posttest scores for the control class are shown in Table 4.
The average learning outcomes for the experimental class were 71.95 and for the control class were 75.24, according to the findings of the posttest t-test, which are presented in Table 4. The experimental class's average learning outcomes are 3.29 higher on average than those of the control class. The table shows that the t-count is 6.207 and that its significance is 0.000. These calculations result in the t-table being 1.975092 at a 5% significance level. As a result, the t count value is more than the t table value (.207 > 1.975092), and the significance level is below 0.05 (sig = 0.000 0.05). It can be said that the learning outcomes between the experimental class and the control class differ significantly.

The results showed different scores in the critical thinking skills with different learning models. Students taught using the conventional method have lower critical thinking skills than those taught using the Multi-Matobe learning strategy. The teacher dominates learning in the conventional methods so that during the lesson, the teacher explains the subject matter, gives case examples, and asks students to practice solving cases. The results of this study were in line with Titikusumawati et al. (2020), who states that the application of learning strategies designed in such a way is adapted to the conditions and needs in the classroom to be effective in critical thinking skills. Multicultural strategies based on religious tolerance in learning have been proven to be effective in training critical thinking skills and significantly contribute to the effectiveness of critical thinking skills scores. The results of this study were strengthened by Warsah et al. (2021), who reveal that through the cases (problems) given, students can explore their ideas and ideas in various ways through discussions in fun learning. Opportunities to explore ideas in various ways and comfortable and fun learning conditions are the capital to develop aspects of students' critical thinking skills (Marcia & Jade, 2019).

The habituation method (habits of mind) provides critical thinking skills to students, so it will appear the habit of feeling everything and finding things that are not working as they should. Students become critical people with argumentative understanding, have high complexity analytical and evaluation skills, are objective toward existing problems, and have elaboration and metacognition abilities (Saputra, 2009). According to Saleh (2019), the following are the aspects of critical thinking skills: 1) Interpretation, the capacity to comprehend and articulate the significance of a specific religious tolerance issues 2) Analysis, the capacity to recognize inferential connections to articulate convictions, conclusions, experiences, justifications, knowledge, or opinion, 3) Evaluation, determining the veracity of claims or other assertions, 4) Inference, the capacity to locate and gather the components required to draw a conclusion, 5) Self-regulation, awareness themselves to monitor one's cognitive activity, and 6) Explanation, the capacity to present the conclusions of one's reasoning in a persuasive and cohesive manner.

The six critical thinking components can be trained through the Multi-Matobe strategy in social studies learning. Students' critical thinking skills are trained when students achieve the social investigation phase of religious tolerance issues. In this case, students' skills to investigate social issues about religious tolerance are trained through discussing ideas, making plans, exchanging ideas, finding solutions, raising arguments and curiosity, and students' critical thinking. Critical thinking is an ability beyond memorizing (Ichsan et al., 2019; Singh et al., 2018). When students use critical thinking, they think independently, generate their own hypotheses, evaluate and synthesize the examples or events being examined, develop new hypotheses, and
test them against the available evidence. Critical thinking, which is a source of new knowledge production, requires the ability to ask questions as a foundation, hence it must be taught as the framework for all learning.

Student learning styles were frequently shaped by classroom activities that were solely guided by teachers and textbooks (Foster & Yaoyuneyong, 2016). For modern educators, who favor fresh methods and models that are more effective at getting people to think, this situation was troubling. When students analyze, evaluate, interpret, or synthesize information and use critical thinking to create arguments, address issues, or draw conclusions, critical thinking becomes important (Prayogi & Yuanita, 2018). Independent thought, self-reliance, and logical considerations in decision-making are necessary for students to develop their critical thinking skills so that a strong character can be formed in students. They must have principles and a firm stance, not easily swayed by the opinions of others, and have a coherent, organized, and logical flow of thought. If students have strong character, they will also have strong self-confidence. They will also possess the courage to express opinions to others and have good leadership skills.

In contrast, in conventional classroom learning, students tend to learn individually and become more passive because the teacher dominates the class. The lecturing strategies in conventional classrooms are very nuanced in teacher-centered learning, with the teacher as an information center. Students listen more passively in varied lecture classes, so learning success is measured more by how many students can memorize the material explained. Students are rarely involved, let alone trained, in activities requiring them to explore ideas during the learning process, resulting in students' minimum critical thinking skills. Danielle et al. (2012) stated that learning dominated by varied lecture methods affects students' thinking skills compared to learning that requires students to construct their own knowledge (Ayertei, 2018).

The contribution of the Multi-Matobe strategy on students' critical thinking skills is obtained from the Multi-Matobe strategy steps when students (1) orient the problem, (2) do mapping and determine problem priorities, (3) conduct social investigations on religious tolerance issues, (4) group and classical discussion, and (5) develop and present the work. The social investigation stage forms the basis for learning the Multi-Matobe strategy. Problem investigation involves students, individually and in groups, finding things that must be discussed and resolved with or without the teacher. Group discussion activities and classical discussions discuss the results of case investigations to find solutions to the given case problems. Students solve problems by collecting all information, materials, or learning resources by exploring the surrounding environment, observing natural phenomena and events, comparing, listening, simulating, and others.

This statement is corroborated by Mahanal et al. (2019), that the feeling of not being satisfied quickly and not being able to quickly accept what is given to him without reviewing it first shows that attitude from the Multi-Matobe strategy step. The investigations carried out by students proved to foster their critical thinking skills through the exploration of questions and by learning how to develop hypotheses, helping students learn in a fun way, helping students gain depth in the concepts of the material they were learning, and helping students use the higher-order thinking, including critical thinking skills. According to the level of thinking development, the research samples showed that prospective educator students at the elementary level are at the stage of higher-order thinking skills. Students can think abstractly and logically at this stage and analyze and combine to solve problems from various tolerance cases (Aslan & Aybek, 2020). Optimal critical thinking skills training supported by optimal mutual learning also causes the Multi-Matobe strategy to enhance students' critical thinking skills effectively. It places the Multi-Matobe strategy as a recommended learning strategy to empower critical thinking skills on other themes and fields.

CONCLUSION

The study results conclude that utilizing a Multi-Matobe, a multicultural learning strategy based on religious tolerance issues, can effectively improve students' critical thinking skills. Two things are considered when teachers apply the Multi-Matobe strategy: the conditions of multicultural learning and the religious tolerance issues to work together. Problem-solving done by students in groups must focus on how scaffolding and peer learning. This process requires the teacher's efforts to examine the learning process in groups actively. Before the model is put into practice, practitioners must know about the Multi-Matobe strategy. Accordingly, future research should pay more attention to and study religious tolerance problem-solving strategies with more diverse and real cases to close the gap in achievement and problem-solving skills in the classroom. There are groups of students with high and low academic skills in the class. It must be seriously considered so that the gap between them is not too large through a Multi-Matobe learning strategy. Suggestions are to combine Multi-Matobe learning strategies with group-based learning by adjusting to the learning problems faced by the class.
REFERENCES


