Contemporary Readings in Law and Social Justice
ISSN: 1948-9137, e-ISSN: 2162-2752
Vol 16 (1), 2024
pp. 398–410

The Effect of Critical Thinking Skills and Learning Models on Students' Civics Learning Outcomes

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Abstract: This study aimed to examine the impact of learning models and critical thinking skills on students' Civics learning outcomes. This type of research is an experiment with a 2 x 2 treatment by level design. Using a multistage random sampling technique, 60 students were randomly chosen to make up the research sample. Instruments and questionnaires were used to gather data for this investigation. Analysis of variance (ANOVA) was used for the statistical analysis, and the significance threshold was set at 0.05. The findings indicated a significant interaction between the learning model and critical thinking skills on students' Civics learning outcomes and that students' Civics learning outcomes were higher for students who were taught using the discovery learning model than for students who were taught using the project-based learning model. This study concluded that students with excellent critical thinking skills should be taught utilizing project-based learning and discovery learning models because they can enhance Civics learning outcomes for students. The learning outcomes for Civics students did not differ significantly between groups of students with inadequate critical thinking skills taught using the discovery and project-based learning models.

Keywords: Learning Model, Critical Thinking, Civics Learning Outcomes

Received: 17 March 2024 **Revised:** 20 May 2024 **Accepted:** 18 June 2024

1. INTRODUCTION

The success of a learning process is influenced by various components, including objectives, lessons or materials, methods, media, learning strategies, teachers, and students. Improving the quality of learning and student learning outcomes will be impacted by optimizing the utilization of various learning components (Irawaty et al., 2021; Supriadi, 2017; Yulius, 2020). However, many teachers continue to carry out the learning process by delivering as much material to students as possible rather than allowing up room for an active, relevant, and engaging learning process, which will eventually have an impact on student learning outcomes (Anggrawan, 2019; Fatimatuzahroh et al., 2019; Hendra Anggryawan, 2020).

The problems of 21st-century learning include new learning paradigm shifts that put students at the center of instruction. The government is attempting to raise educational standards in response to these developments by implementing the 2013 Curriculum in classrooms. Implementing the 2013 curriculum using scientific methodology and learning models such as discovery, problem-based, and inquiry-based learning is advised. Students take an active part in learning activities thanks to these learning methods. The project-based learning model is an additional instructional strategy that can be used concerning the 2013 curriculum (Maubana & Sakbana, 2020).

School learning efforts frequently run into several issues. Many students receive poor scores in Civics studies because they believe it is a complicated and challenging science topic. Numerous students still score below the established standard, so the learning achievements have not been sufficient.

Civics is a junior high school (SMP) subject that frequently receives learning notes or predicates that have low scores compared to the scores of other subjects and are subjects that students resent. Civics is typically regarded as a dull and uninspiring topic. This demonstrates that additional scientific research is still needed to develop alternative learning models for Civics instruction that will enable students to maximize their educational experience.

The empirical data that supports this statement is marked by the achievement of student learning outcomes, namely the average grade VII students in Civics subjects at SMP Negeri 9 Kendari. Based on observation, the achievement of student learning outcomes, precisely the average value of class VII students in Civics subjects at SMP Negeri 9 Kendari, provides empirical data to support this statement. This demonstrates that SMP Negeri 9 Kendari students' Civics scores are still below the school's Minimum Completeness Criteria (KKM), which is 80,00. The percentage of students who met the KKM in the 2020/2021 school year was 14,3 percent, while 85,7 percent remained below the KKM. In the 2021/2022 school year, 12,5 percent met the KKM, while 87,5 percent fell short. In the 2022/2023 school year, 13 percent met the KKM, while 87 percent fell short. This empirical data clearly shows students' performance in Civics subjects at SMP Negeri 9 Kendari, which failed to meet the bare competency levels students must achieve (SMP Negeri 9 Kendari Curriculum Documents).

There is a need for improvement initiatives to improve Civic learning outcomes due to this low score acquisition, which is of considerable importance to all parties and significantly increases the quality of Civic learning. The quality of the learning process, the learning model, the type of assessment used, and students' critical thinking abilities may affect how well students learn. These factors come from the teacher and students themselves and the curriculum.

Additionally, the findings of in-class observations of grade VII students at SMP Negeri 9 Kendari reveal that learning is highly watchful. At the same time, the teacher instructs, and students lack motivation to learn since they appear bored. Students' boredom with the teacher's teaching strategies, which do not vary and do not employ cutting-edge learning models that can inspire students' excitement for learning, is one reason they are not interested in studying Civics. As a result, it may be claimed that students' low learning outcomes in Civics are caused by their lack of interest in learning and process skills. As a result, a lack of critical and creative thinking impacts students' learning outcomes. (Observations on August 20^{th,} 2022).

Because the learning process is still teacher-centered, there are low learning outcomes and critical thinking skills. Kurniasih and Sani (2014) expressed that lecturing-style instruction is too common among Indonesian teachers. In Indonesia, teachers who do not speak for a long time in class give the impression that they have not taught anything yet, which makes students passive in class and more likely to accept ideas without understanding how to find them. Furthermore, based on (Rikawati and Sitinjak, 2020), the method is still in the lecture format, which results in passive learning on the part of the students. Additionally, students' capacity for critical thinking is still lacking because they are used to memorizing information rather than exploring the principles in the content being taught.

It is necessary to alter the teaching and learning model so that students are actively engaged in learning, and the teacher acts as a facilitator and mediator to address the low critical thinking skills and student learning outcomes. The discovery learning model can enhance students' learning outcomes and critical thinking skills. The discovery learning model encourages students to observe, inquire, attempt, reason, and communicate using syntax, which can help them develop critical thinking skills (Paramitha et al., 2023; Nurrohmi, 2017). Learning with the discovery learning model requires students to seek and discover concepts from knowledge gained through experience actively. Research by (Pratiwi et al., 2014) showed that the discovery learning model greatly influences students' critical thinking skills. (Astuti, et al., 2021; Amna & Muhammadi, 2020; Maubana & Sakbana, 2020; Windarti, et al., 2018), The discovery learning model improved students' learning outcomes and critical thinking skills. This discovery learning

model also encourages students to develop their concepts from previously acquired knowledge to improve student learning outcomes.

In addition to the discovery learning model, which can improve learning outcomes and students' critical thinking skills, project-based learning is another model. Project-based learning is an instructional strategy that allows students to express their knowledge and demonstrate their new understanding through different presentation models. (Klein, et al., (2009). Further to Isriani and Puspitasari (2015), project-based learning is a learning model that allows teachers to manage classroom learning by involving project work. This opinion implicitly states that project-based learning is a student-centered learning model that determines the teacher as a facilitator. Meanwhile, according to Fathurrohman (2016), project-based learning is a learning model that uses projects or activities as a learning tool to achieve competency in attitudes, knowledge, and skills. The project itself is defined as an activity that involves much work and requires coordination and specialization of supporting personnel to complete it.

Sani (2014) explains that the following will be prioritized through the use of the project-based learning model: (1) engaging students in complex real-world problems that allow them to define issues or problems that are important to them; (2) requiring a process of inquiry, research, planning skills, critical thinking, and problem-solving skills to make projects; (3) involving students in learning to apply knowledge and skills with various contexts when working on projects; and (4) providing opportunities for students to reflect on their learning.

The results of research conducted by (Hamuni et al., 2022; Anwar et al., 2021; Annissa & Yunisrul, 2020; Mayumi et al., 2019); found that the application of the project-based learning model has a significant effect on student learning outcomes. Further results of research conducted by Hutapea & Simanjuntak (2017) found that the application of the project-based learning model can improve thinking skills, decision-making skills, creative abilities, and problem-solving abilities and, at the same time, is seen as adequate for developing students' self-confidence and self-management. Other research conducted by Utama & Sukaswanto (2020), noticed that the project-based learning model can boost student learning activity and substantially impact students' learning outcomes. The same is true of the study that was carried out by Marbun & Tistiyanto (2022), who showed that the project-based learning model is particularly effective at increasing student engagement and accomplishing learning outcomes.

The learning model is thought to have the most decisive influence on how well students learn among these numerous additional aspects. The learning process, which is at the center of the entire educational process with the teacher as the primary role bearer, is thus one of the markers for accomplishing quality education goals. The teacher's application of the learning model in question is project-based and discovery learning. Discovery learning and project-based learning models can potentially enhance student learning outcomes as well as students' motivation, skills, and confidence in their ability to solve various challenges. They can also continuously improve students' critical thinking skills.

In addition to the learning model, another factor that significantly influences student learning outcomes is students' critical thinking skills. This is to what Yolanda, Amrina & Shislina said (Windarti et al., 2018) that critical thinking skills can be noted as a form of thinking that needs to be developed to solve a problem, formulate conclusions, gather various possibilities, and make decisions to get a solution. Purba (Windarti et al., 2018) continues to say that the capacity for complicated thought and applying analysis and evaluation techniques are other definitions of critical thinking. Critical thinking skills do not just appear; they need the appropriate stimuli or stimulation. Students should be able to think critically since they will need this skill in their daily lives and society. Critical thinking skills must be cultivated during the learning process; however, not all learning processes will do so automatically. Only the learning process, which includes conversations in its activities, gives students plenty of chances to voice their viewpoints, promotes group learning and information discovery, and can help students improve their critical thinking skills.

Sore (Astuti et al., 2021) defined critical thinking as a disciplined intellectual process that actively and intelligently conceptualizes, applies, analyzes, synthesizes, and evaluates data gathered or generated through observation, experience, reflection, reasoning, or communication to inform beliefs and decisions. Students with strong critical thinking abilities have excellent self-response and high self-control. Therefore,

instead of students who do not believe they can solve difficulties, those who think they can will opt to complete assignments.

In this situation, the teacher plays a crucial role in disseminating the information. Teachers are expected to grab students' attention, inspire them to engage actively in the learning process, and help them develop their creativity and independence to learn according to their talents, interests, and stage of development, particularly those studying Civics.

This is consistent with the findings of the study that was undertaken by (Rahayu et al., 2019; Komariyah & Laili, 2018; Saputri et al., 2020; Larasati & Damopolii, 2018), who recognized that developing critical thinking skills can enhance student motivation and learning outcomes. Students with strong critical thinking skills typically can monitor, assess, and manage their learning and time effectively, complete assignments more quickly, and score satisfactorily on tests. Results of additional research by (Goal et al. 2022; Azzura & Sulaiman, 2022; Puspitaningtyas, 2022; Khotimah et al., 2017) revealed that students with strong critical thinking abilities can improve learning outcomes and student engagement. Students also actively test and continually improve their thinking skills by completing tasks assigned to them by the teacher.

With the description given above, it is clear that actions must be taken to raise the standard of the teaching and learning process if student Civics learning outcomes are to be improved. How to deliver instruction full of purposeful and innovative activities so that students are more engaged and adept at problem-solving. This entails comparing how students learn using the project-based learning model as the treatment class and the discovery learning model as the control class and using the student's capacity for critical thought as a moderator variable. The learning process is meaningful and can be utilized as an alternative to enhance students' civics learning outcomes, as shown by comparing the results of the two learning models.

Looking at the findings of earlier studies, we can see that this research is innovative and sets it apart from other research. In contrast to prior research, which used a discovery learning model and problem-based learning moderated by autonomous learning, this study uses a project-based learning model controlled by students' critical thinking skills. This study aims to determine whether students who are taught Civics using the discovery learning model and students who are taught using the project-based learning model achieve different learning outcomes.

In addition, looking at the findings of earlier studies, we can see that the present study is innovative in setting it apart from other research. Unlike other studies, which employed a problem-based learning model and an inquiry learning model moderated by autonomous learning, this research uses a project-based learning model and a discovery learning model, which are mediated by critical thinking abilities. This study aims to determine whether students who are taught Civics using the discovery learning model and the project-based learning model achieve different learning outcomes.

2. METHOD

In this study, a pre-experiment with treatment by level 2 x 2 design was the methodology utilized. The multistage random sampling technique was used to sample a total of 60 students, 15 of whom were taught the discovery learning model with high critical thinking skills (A1B1), 15 of whom were taught the model with low critical thinking skills (A1B2), 15 of whom were taught the model with high critical thinking skills (A2B1), and 15 of whom were taught the model with low learning autonomy (A2B2).

The research sample is anticipated to be similar because all students follow the same curriculum, complete their schoolwork during the same semester, experience somewhat similar learning environments, and are typically the same age.

Test instruments and questionnaires were used to gather the data for this research. Researchers employed tests to measure students' civics learning outcomes, and questionnaires were utilized to measure their level of learning autonomy. A number of experts first examine the instrument's content and construct validity before it is deployed. Before the instrument was delivered to research volunteers, trials were conducted to assess its validity and reliability. Five of the 35 questions that were designed for the learning

outcomes exam were found to be invalid based on the test results. Of the 40 items produced for the student learning autonomy instrument, five were invalid. The research instrument omitted any measures that were found to be invalid during testing, including the learning autonomy test instruments and instruments used to measure civics learning outcomes.

Analysis of variance (ANOVA) was used with the Univariate GLM procedure in the SPSS 24 program to assess the study hypothesis. The ANOVA t-test is used as a follow-up test if there is an interaction between the treatment factors and the attribute variables. A multivariate analytic technique called analysis of variance (ANOVA) evaluates variances to look for variations between mean scores across two data groups. To determine whether there is a significant difference between the mean scores of two or more samples, an analysis of variance (ANOVA) is carried out.

3. RESULT AND DISCUSSION

Result

Proving a hypothesis that has been put forward in this research is carried out using analysis of variance (ANOVA) techniques. Testing using variance analysis techniques aims to determine the influence of learning models and critical thinking skills on students' Civics learning outcomes. The ANOVA t-test followed the results of the analysis of variance (ANOVA) obtained to determine the average differences in Civic learning outcomes for students taught using the discovery learning model and the project based learning model in groups of students who have different critical thinking abilities. The results of testing the hypothesis using analysis of variance (ANOVA) are shown in Table 1.

Table 1. Parameter Estimates of Factors A, B, and X

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	746.495[a]	4	186.624	9.717	.000
Intercept	2030.680	1	2030.680	105.729	.000
A	120.467	1	121.467	6.328	.015
B	81.814	1	81.814	4.260	.043
A * B	302.642	1	302.642	15.758	.000
X	59.112	1	59.112	3.075	.085
Error	1056.355	55	19.205		
Total	118227.000	60			
Corrected Total	1802.852	59			

Based on the analysis results summarized in Table 2, hypothesis 1 H_0 is rejected with a significance value of 0.015. Because the significance value is smaller than the significant level $\alpha = 0.05$, the hypothesis testing is substantial.

Table 2. Parameter Estimates of Factors AB and X

Parameter	B	Std. Error	T	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Intercept	37.168	3.404	10.918	.000	30.346	43.990
[A=1.00]	-1.542	1.623	-.950	.346	-4.795	1.710
[A=2.00]	0[a]	.	.	.	.	.
[B=1.00]	-1.896	1.680	-1.129	.264	-5.263	1.470
[B=2.00]	0[a]	.	.	.	.	.
[A=1.00] * [B=1.00]	8.989	2.265	3.970	.000	4.451	13.528
[A=1.00] * [B=2.00]	0[a]	.	.	.	.	.
[A=2.00] * [B=1.00]	0[a]	.	.	.	.	.
[A=2.00] * [B=2.00]	0[a]	.	.	.	.	.
X	.166	.095	1.754	.085	-.024	.356

Based on the analysis results summarized in Table 2, hypothesis 2 H0 is rejected with a significance value of 0.000. Because the significance value is smaller than the significant level $\alpha = 0.05$, the hypothesis

testing is significant. Thus, there is an interaction between the learning model and the ability to think critically about Civics learning outcomes.

Because the learning model and critical thinking skills interacted with Civics learning outcomes, further hypothesis testing was carried out (one side) with the ANOVA t-test statistic. The calculation results of each group pair are presented in Table 3.

Table 3. Parameter Estimates of Hypothesis Test Results 3 and 4

					95% Confidence Interval		Partial Eta
Parameter	**B**	**Std. Error**	**T**	**Sig.**	**Lower Bound**	**Upper Bound**	**Squared**
Intercept	37.168	3.404	10.918	.000	30.346	43.990	.683
X	.166	.095	1.754	.084	-.024	.356	.052
[B=1.00]	-1.896	1.680	-1.129	.283	-5.263	1.470	.022
[B=2.00]	0[a]	.	.	.	.	.	.
[A=1.00] * [B=1.00]	7.447	1.639	4.544	.000	4.163	10.731	.274
[A=1.00] * [B=2.00]	-1.542	1.623	-1.428	.238	-4.795	1.710	.015
[A=2.00] * [B=1.00]	0[a]	.	.	.	.	.	.
[A=2.00] * [B=2.00]	0[a]	.	.	.	.	.	.

The results of the analysis with the ANOVA t-test, summarized in Table 4, for hypothesis 3 H0 are rejected with a significance value of 0.000. Because the significance value is smaller than the significant level $\alpha = 0.05$, the hypothesis testing is significant. Furthermore, based on the analysis results for the 4 H_0 hypothesis, it is accepted with a significance value of 0.238. Because the significance value is greater than the significant level $\alpha = 0.05$, the test is not significant.

Discussion

The research results show that the learning model and critical thinking skills significantly influence students' Civics learning outcomes, both individually and in interaction. Next, it will be discussed based on research findings and hypothesis testing results, in detail as follows:

The results of hypothesis testing 1, based on the analysis of variance (ANOVA), revealed that groups of students who were taught using the discovery learning model and groups of students who were taught the project-based learning model had different Civics learning outcomes. The obtained significance value, equal to 0.015 and lower than the significant level of = 0.05, supports this conclusion. The level of the significant value produced in testing this hypothesis originates solely from the impact of the instruction provided to students using the learning model.

The findings of these computations indicate that the group of students taught using the discovery learning model has a higher average score for Civics learning outcomes than those taught using the project-based learning model. These findings demonstrate that students who learn Civics using a discovery learning model have better learning outcomes than those who learn Civics using a project-based model. The discovery learning model's participation in Civics education significantly impacts students' Civics learning outcomes. As stated by Hosnan (2014), the discovery learning model to education encourages students to build independent learning strategies so that the knowledge they get will stick with them and stay in their memories for a long time. Through discovery learning, students can learn to think critically and attempt to solve their problems. More in line with Bruner (Hosnan, 2014), the learning process will proceed smoothly and creatively if the teacher gives students a chance to discover a concept, theory, rule, or understanding through instances they encounter in their daily lives. The use of exploration learning in the classroom can transform inactive learning situations into dynamic and imaginative ones. Similarly, according to Wilcox (Hosnan, 2014), students are encouraged to learn primarily by their active engagement with ideas and principles in learning by discovery, and teachers encourage students to have.

This is confirmed by findings from a study done by Paramitha et al. (2023) that the discovery learning model can enhance student learning outcomes. Students who learn using the discovery learning model must actively seek out and discover ideas from knowledge acquired via experience. When using the discovery learning model, students learn in a meaningful way because they apply the knowledge they

already possess or look for the knowledge they need to solve a problem. Learning can be enhanced and given additional significance when students encounter circumstances where concepts are used. Thus, this may strengthen comprehension and academic results for students. According to the findings of research by (Astuti et al., 2021 Maubana & Sakbana, 2020; Windarti et al., 2018; Melani, 2012) discovered that the discovery learning paradigm significantly improved students' learning outcomes and critical thinking skills. In order to improve student learning outcomes, this discovery learning model also encourages students to develop their concepts from the acquired knowledge.

Students who are taught using the discovery learning model eagerly complete the teacher's assignments. Students also have autonomy in problem-solving and selecting the appropriate answers to challenges presented by the teacher. In contrast, students who are taught using a project-based learning model rely heavily on the teacher to complete the tasks assigned, particularly for complex projects. When planning projects and presenting project findings, students who have been taught PjBL techniques need teacher direction and are not independent when solving problems.

Mastering the Civics concept, which calls for students to have strong critical thinking and analytical skills that help locate and resolve challenging challenges, aligns with the discovery learning model. Civics assignments presented difficulties to students who were taught utilizing the discovery learning model, but these challenges motivated them to work even harder. On the other hand, students who are taught using a project-based learning model are more likely to give up when they believe that their goals are challenging to reach because they lack confidence in their capacity to overcome challenges in completing the tasks set. As a result, especially when they do not receive supervision from the teacher, students will feel bored and unmotivated when completing assignments. As a result, students will be less motivated to learn, which may affect their learning outcomes. This explanation demonstrates that, in comparison to the use of the project-based learning model, the application of the discovery learning model in learning makes an enormous contribution to the attainment of students' Civics learning outcomes.

Results of hypothesis testing two, according to the results of the analysis of variance (ANOVA) used in this study, there was a significant interaction impact between the usage of learning models and critical thinking skills on the learning outcomes for Civics. This finding is supported by the obtained significance value, which is equal to 0.000 and lower than the significant level of = 0.05. The magnitude of the substantial value achieved in testing this hypothesis comes solely from the impact of adopting a learning model and focusing on students' critical thinking skills during treatment.

This implies that based on the learning outcomes measured by learning achievement exams, students who get high-quality learning demonstrate more tremendous success than those who receive low-quality learning. Higher student scores will be attained due to the deployment of an efficient learning model. As a result, when developing lessons, educators must consider relevant learning models. However, the selection of suitable learning models must take into account the various traits and learning preferences of students. To maximize student involvement in learning and improve learning outcomes, it is essential to choose a learning model that is relevant to both the features of the subjects being studied and the qualities of the students. This will foster motivation and creativity.

The outcomes of earlier research by (Nurrohmi, 2017; Pratiwi et al., 2014) are used to corroborate the findings of this study that the project-based learning model and the capacity for critical thought have a major impact on the learning outcomes of students, as does the discovery learning model. Research undertaken by Astuti et al. (2021) discovered that groups of students who were taught using the discovery learning model had learning outcomes that were more academically successful. This is so that learning occurs based on the qualities of the students and because the content's structure and nature are compatible with the discovery learning model. Likewise, studies by Maubana & Sakbana (2020) found that the discovery learning model and project-based learning significantly impact students' learning outcomes.

Student learning outcomes are influenced by two factors: learning models and critical thinking skills. However, for students to acquire Civics to the fullest extent possible, there must be a balance between learning models and critical thinking skills (according to circumstances and events). Because they can complete the teacher-assigned tasks independently by following the steps established in learning with

discovery learning models and project-based learning, students with high critical thinking skills are more engaged and challenged in learning Civics material.

Nevertheless, in light of (Rahayu et al., 2019, Saputri et al., 2020 Larasati & Damopolii, 2018) discovered that critical thinking skills can enhance student motivation and learning outcomes. Students with strong critical thinking skills typically can monitor, assess, and manage their learning and time effectively, complete assignments more quickly, and score well on tests. Results of additional research by (Goal et al., 2022 Azzura & Sulaiman, 2022 Wardani & Fiorintina, 2023 Mareti & Hadiyanti, 2021 Mariskhantari et al., 2022) revealed that students with excellent analytical skills could improve learning outcomes and student engagement. Students also actively test and continually improve their thinking skills by completing tasks assigned to them by the teacher.

According to the description above, critical thinking skills can be used in various scientific activities as valuable tools for thinking, capturing information, formulating problems, or solving problems. Suppose the teacher considers the students' intelligence and uses the model of proper learning. In that case, these two aspects will significantly impact the students' learning outcomes in Civics. This is consistent with the assertion made by Puspitaningtyas (2022), that critical thinking skills include the capacity to think critically, creatively, and innovatively; the inability to be easily swayed by the opinions of others; the inability to avoid problems; the ability to solve problems alone, without seeking assistance from others; the inability to feel inferior if one must be different from others; and the ability to work diligently, with discipline, and to take responsibility for one's actions. Students with excellent critical thinking skills will be competent problem solvers. For instance, they do not imitate other people's work when completing an assignment, especially if the subject at hand is challenging. Instead, they seek other learning resources, like books, to comprehend concepts they don't understand before modeling their teacher.

The explanation given above suggests that learning models and critical thinking skills interact and have an impact. The learning outcomes of civics students were taught using the discovery learning model in groups of students with higher thinking skills than the project-based learning model. In comparison, the learning outcomes of Civics students taught using the discovery learning model in groups of students with lower critical thinking skills than the project-based learning model demonstrate this.

Results of hypothesis testing 3 According to the analysis of variance (ANOVA), students who were taught using the discovery learning model performed better than those taught using the project-based learning model. This result is indicated by the significance value obtained, which is equal to 0.000, which is smaller than the significant level $\alpha = 0.05$. The magnitude of the significant value generated in testing this hypothesis originates solely from the impact of teaching strategies such as project-based learning and discovery learning on students with strong critical thinking skills. The provision of discovery learning models, as well as those taught with project-based learning models in groups of students who have high critical thinking skills in this research, then, means that the average student Civics learning outcomes obtained are not influenced by other variables such as students' initial abilities, but rather due solely to these methods of classroom instruction. This circumstance suggests that students with high levels of learning autonomy can study Civics more effectively when taught using the discovery learning model instead of project-based learning models.

The outcomes of earlier research by Windarti et al. (2018) are used to corroborate the findings of this study that the discovery learning model is particularly effective in increasing student learning activities in class because it develops students' basic skills in problem-solving and problem-solving strategies. Contrary to traditional learning models, which do not engage students and make learning enjoyable. This outcome is consistent with what was claimed by Sore (Astuti et al., (2021), that critical thinking is a disciplined intellectual process that employs information gathered or generated through observation, experience, reflection, reasoning, or communication as a guide regarding what is believed and what is accomplished. Students with strong critical thinking skills have excellent self-response and high self-control. Therefore, as opposed to students who do not believe they can solve challenges, those who believe they are will opt to complete assignments.

Additionally, students taught using discovery learning models and with excellent critical thinking skills tend to be more engaged in their studies. The outcomes of the studies done by (Komariyah & Laili,

2018 Pratiwi et al., 2014 Dahlan et al., 2023 Wafiqni et al., 2023 Nurrohmi et al. 2017; Lieung, 2019) back this up, who came to the conclusion that students with strong skills in critical thinking can improve civics students' active learning and learning outcomes when they are taught using the discovery learning model. Furthermore, students are more engaged in studying the challenges they are presented by their teachers, working to solve them, and continuously honing their critical thinking skills. Because this model can help students organize subject matter, guide individual/group experiences, develop and present work, and analyze and evaluate problem-solving processes in learning, the discovery learning model places a greater emphasis on student activity to improve learning outcomes. This can be successful if students are supported with strong critical thinking skills.

When taught using a project-based learning model, students would feel bored and unmotivated to participate in learning, which might affect the learning outcomes attained, as opposed to students with inadequate critical thinking skills. Due to the project-based learning model, students rely on their teachers for support and direction in completing the provided project tasks. The teacher's role, engagement, and creativity are essential in project-based learning because they enable the teacher to plan lessons and mentor students as they work on projects. In order for students to follow and discuss contextual concerns in the learning process activities, excellent critical thinking skills are required in this learning activity. Suppose the teacher does not assist students in learning activities. In that case, students being taught using a project-based learning model will tend to be passive and less active in discovering their knowledge based on their experiences.

In response to the explanation above, students who are taught using the discovery learning model will give groups with excellent skills in critical thinking internal stimulation so they can process the information presented to them with challenging tasks and help them increase their understanding of the subject matter. On the other hand, students who are taught using a project-based learning model will avoid work that they find challenging, be less willing to strive harder, give up readily when presented with challenges, and pay less attention to tasks that must be finished. The learning outcomes of Civics students who are taught using the discovery learning model in classes of students with stronger critical thinking skills than those taught using the project-based learning model show this to be accurate.

Results of hypothesis testing four based on the analysis of variance (ANOVA) found that the group of students with low critical thinking skills who the discovery learning model taught did not differ significantly from the group of students who the project-based learning model taught. This result is indicated by the significance value obtained, which is equal to 0.238, which is greater than the significant level $\alpha = 0.05$. The significance value generated in testing this hypothesis primarily stems from the effects of teaching students with low critical thinking skills utilizing the discovery learning model and project-based learning model. In other words, the supply of discovery and project-based learning models to groups of students with adequate critical thinking skills is the only factor that impacts the average student's learning outcomes in Civics. Other factors, such as students' baseline talents, have no bearing on these outcomes. This circumstance shows that the civics learning outcomes for students with inadequate critical thinking skills who are taught using the discovery learning model are similar to those for students who are taught using project-based learning models.

This is due to the fact that students who lack excellent critical thinking skills rely more on their teachers' instructions and justifications when learning. Because students who are taught using the project-based learning model depend greatly on the teacher, pupils with limited critical thinking skills benefit more in the learning process. Teachers always help students with problem-solving and project design. The teacher's role in helping and leading students to finish their project assignments and address challenges is significant. This is consistent with the assertion made by (Hamuni et al. 2022; Astri et al., 2022; Harizah et al., 2022) that a project-based learning model will be more helpful in teaching students with weak critical thinking skills since it makes them feel more engaged and active in their education. This is the case with research results by Mayuni et al. (2019), who observed that the project-based learning model enables students to conduct in-depth research under the direct supervision of teachers while assisting those with limited critical thinking skills in choosing appropriate learning paths to attain learning objectives. Other studies conducted by Rizkasari (2022) demonstrated that the project-based learning model can boost creativity and student learning outcomes when applied to students with weak critical thinking skills.

In project-based learning, a teacher typically models problem-solving techniques and project design methods step-by-step. Students are then asked to utilize the same procedures/steps as the teacher to solve problems and finish a specific project. This demonstrates that, if applied to students with low levels of learning autonomy, the project-based learning model is quite suitable and offers considerable benefits.

Students who are taught using the discovery learning model will be passive in expressing ideas, unable to use learning resources appropriately, less creative in independently investigating and resolving problems given by the teacher, imprecise in their decision-making, unable to use scientific concepts independently, and uninterested in learning activities or activities utilizing the discovery learning model. As a result, students become disinterested in their assignments, negatively affecting their learning outcomes. This is in line with (Maubana & Sakbana, 2020; Rahayu et al., 2019; Nadiya & Tirtoni, 2023) research. They discovered that civics learning is closely tied to students' critical thinking skills, making it easier for students with high thinking abilities to build their knowledge utilizing the discovery learning model than those with low critical thinking skills. Students' inability to control their learning leads to low learning accomplishment. To benefit the learning outcomes students accomplish, the management of autonomous learning should allow students to pursue their interests and learn without outside pressure. Because the teacher is actively involved in the class, organizing the teaching materials in such a way to guide students in completing projects will be very appealing to students in completing assignments given; students with low critical thinking skills are very suitable when taught with a project-based learning model.

According to the explanation given above, students who are taught using a project-based learning model will give low critical thinking skill groups internal stimulation so they can process the knowledge they are provided with tasks that challenge them and help them build on their existing knowledge to gain a deeper understanding of the subject matter. Students who are taught using the discovery learning method, however, in classes of students with weak skills in critical thinking would avoid things they find challenging, be unwilling to put up more effort, give up easily when faced with challenges, and pay less attention to work that must be finished. This fact can be noted from the Civics students' learning outcomes, which show no difference between students who are taught using project-based learning models and groups of students who use the discovery learning model and have inadequate critical thinking skills.

The results of this research study's implications offer knowledge regarding purposeful learning procedures and can be applied as a substitute to raise students' academic performance and creativity. Teachers can use discovery and project-based learning models in the learning process, improve student learning outcomes, and help students understand the subject quickly. This is hoped to take place by paying attention to students' critical thinking skills. The suggestions in this study also include the following: First, teachers should prioritize the discovery learning model while teaching civics in the classroom since it significantly impacts students' learning outcomes. Second, teachers must consider each student's unique qualities, particularly their capacity for critical thinking, while deciding on civic learning approaches. Third, since only the discovery learning model and the project-based learning model were used in this study, other researchers who are interested in this topic should carry out additional research on learning models and students' critical thinking skills on learning outcomes for students in different subjects, in order to enrich the learning model for teachers of Civics or other subjects that can be used as a reference.

4. CONCLUSION

The study's findings show a significant increase in student Civics learning outcomes with the application of discovery learning models and project-based learning models, especially in groups of students with high critical thinking skills. However, this research found no significant differences in Civics learning outcomes for groups of students who had low essential thinking skills, whether they were taught using the discovery learning model or those taught using the project-based learning model. Based on the research results, it can be concluded that the application of the discovery learning model and the project-based learning model is efficient in improving students' Civics learning outcomes. This conclusion is supported by the significant increase in scores obtained by students before and after being taught using the discovery and project-based learning models. In addition, students' critical thinking skills show extraordinary progress from low to high levels. Through the use of discovery learning models and project-based learning models for students with high critical thinking skills, the tasks given by the teacher are

completed independently by following the steps determined in the lesson. Apart from that, students who are taught the discovery learning model and the project-based learning model have independence in solving problems and selecting the right solution to solve the problems given by the teacher and encourage students to openly explore and find innovative solutions to their challenges. Considering this critical thing, it is proven that the discovery and project-based learning models are practical choices for improving students' learning outcomes and critical thinking skills.

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