



MEA learning model impact on Pancasila education outcomes based on motivation level

Khairunnisa Rizka¹, Daulat Saragi², Abdul Murad³

^{1,2,3}Universitas Negeri Medan, Kota Medan, Indonesia

khairunnisarizka99@gmail.com¹, saragidaulat@gmail.com², abudulmur4d@unimed.ac.id³

ABSTRACT

Learning outcomes in Pancasila and Citizenship Education (Pendidikan Pancasila dan Kewarganegaraan or PPKn) among elementary students still face challenges, particularly due to the use of less innovative learning models and low student motivation. This study aims to examine the differences in PPKn learning outcomes between students taught using the Means-Ends Analysis (MEA) model and those taught using the expository model, as well as the differences based on learning motivation levels and the interaction between learning models and motivation on learning outcomes. The study employed a quasi-experimental method with a two-by-two factorial design, involving fourth-grade students at SD Swasta Tunas Harapan Islam Medan. The results showed that students taught with the MEA model achieved better learning outcomes than those using the expository model. Students with high motivation also performed better than those with low motivation. Furthermore, a significant interaction was found between learning models and motivation levels, with the combination of the MEA model and high motivation yielding the most optimal outcomes. In conclusion, the MEA model is more effective in improving PPKn learning outcomes, especially for students with high motivation. These findings highlight the importance of selecting suitable learning models and taking into account students' internal factors to support learning success.

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ABSTRAK

Hasil belajar Pendidikan Pancasila dan Kewarganegaraan (PPKn) pada peserta didik sekolah dasar masih menghadapi tantangan, terutama karena penggunaan model pembelajaran yang kurang inovatif dan rendahnya motivasi belajar. Penelitian ini bertujuan untuk menganalisis perbedaan hasil belajar PPKn antara peserta didik yang menggunakan model pembelajaran Means Ends Analysis (MEA) dan peserta didik dengan model ekspositori, perbedaan berdasarkan tingkat motivasi belajar, serta interaksi antara model pembelajaran dan motivasi belajar terhadap hasil belajar. Penelitian menggunakan metode eksperimen semu dengan desain faktorial dua kali dua, melibatkan peserta didik kelas IV SD Swasta Tunas Harapan Islam Medan. Hasil penelitian menunjukkan bahwa peserta didik yang mengikuti pembelajaran dengan model MEA memiliki hasil belajar lebih tinggi dibandingkan dengan peserta didik yang menggunakan model ekspositori. Peserta didik dengan motivasi belajar tinggi juga menunjukkan pencapaian lebih baik dibandingkan peserta didik yang bermotivasi rendah. Selain itu, terdapat interaksi signifikan antara model pembelajaran dan motivasi belajar, di mana kombinasi model MEA dan motivasi tinggi menghasilkan capaian belajar paling optimal. Simpulan dari penelitian ini menegaskan bahwa model MEA efektif dalam meningkatkan hasil belajar PPKn, terutama pada peserta didik dengan motivasi belajar tinggi. Temuan ini menyoroti pentingnya pemilihan model pembelajaran yang tepat dan perhatian terhadap faktor internal peserta didik dalam mendukung keberhasilan pembelajaran.

Kata kunci: hasil belajar PPKn; model pembelajaran MEA; motivasi belajar; pendidikan Pancasila; sekolah dasar

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INTRODUCTION

According to Peraturan Pemerintah Republik Indonesia Nomor 57 Tahun 2021 concerning Standar Nasional Pendidikan, which was later revised by Government Regulation Number 4 of 2022, education is an effort to educate the nation's life in order to create a progressive, just, and prosperous society based on Pancasila and the 1945 Constitution of the Republic of Indonesia. To ensure educational quality, Content Standards are developed to specify the scope of learning materials in accordance with the expected graduate competencies. The preparation of Content Standards is carried out by formulating the scope of learning materials that are appropriate to develop student competencies according to graduate competency standards, making adjustments to learning progress (*learning progression*) students at each level, formulating the scope of learning materials that provide flexibility to educators to facilitate students in developing their competencies, and adopting the principle of differentiation in developing the scope of learning materials (Puspitasari & Resmalasari, 2022).

The Ministry evaluates the curriculum framework and structure for their relevance and impact on learning practices and outcomes. This curriculum evaluation and development is part of an effort to improve overall educational success (Fatmawati, 2021). Education is considered successful if it produces high-quality human resources (HR), as education is a primary driver of efforts to improve HR quality (Halawa & Mulyanti, 2023). Through education, Indonesian people will develop strong values and character, enabling them to contribute to the realization of their ideals in building the nation's civilization (Hamdani et al., 2022). However, education in Indonesia remains dominated by the view that the classroom centers on the educator as the primary source of knowledge. This is evident in learning practices that still rely on lecture methods and one-way knowledge transfer. This condition leads to a lack of active learning experiences for students during the teaching-learning process, resulting in monotonous learning and limited development of critical thinking skills (Oktavian, 2016).

Given the current teacher-centered learning environment, innovation is needed, including in Pancasila Education. Pancasila Education is a development of Pancasila and Citizenship Education (PPKn) in the previous curriculum. The success of the Pancasila Education learning process must also be evaluated against the 2013 curriculum, prior to the name change from PPKn to Pancasila Education. PPKn learning plays a role in shaping the character of law-abiding citizens, maintaining a balance between rights and obligations, and developing the nation's values, morals, and character, thereby fostering a multicultural mindset (Bukoting, 2023). The subject of PPKn is important for students from elementary school through university, as it helps them develop an understanding of nationalism and a positive personality aligned with the values embedded in the subject (Lastari & Saragi, 2023). Despite its important role, Civics is still considered a less engaging subject for students. Therefore, engaging learning is needed to increase student interest in Civics; one way to do this is to implement a Means-Ends Analysis (MEA) learning model.

Several previous studies have demonstrated the effectiveness of the MEA model in improving problem-solving skills and student learning outcomes in various subjects, particularly mathematics. The MEA model is effective because it requires students to solve problems, thereby cultivating critical thinking skills and ultimately improving student learning outcomes (Asmedy, 2021). Results from other studies also indicate that the MEA model can enhance communication skills and students' problem-solving abilities (Hossaini & Kamiluddin, 2021). Apart from the learning model, one of the things that influences students' learning outcomes is students' learning motivation because motivation has an important role in the learning process so that it has an impact on students' learning outcomes, students with high learning motivation are likely to achieve high learning outcomes and vice versa, students with low learning motivation are likely to achieve low learning outcomes (Fernando et al., 2024). This study examines the combined influence of the MEA learning model and learning motivation on learning outcomes in Pancasila Education, in contrast

to previous studies that generally examined only the influence of the MEA learning model on learning outcomes, without considering students' learning motivation.

In contrast to previous studies that generally examined only the influence of the MEA learning model on learning outcomes, without considering students' learning motivation, this study examines the combined influence of the MEA learning model and learning motivation on learning outcomes in Pancasila Education. The novelty of this study lies in integrating two variables (learning model and motivation) within Pancasila Education at the elementary school level. Based on initial observations conducted by researchers at SD Swasta Tunas Harapan Islam Medan, students' learning outcomes in Pancasila Education were suboptimal. Several problems identified include: 1) students have relatively low learning motivation, seen from the lack of interest and attention to the lesson so that students are lazy to learn and reluctant to carry out responsibilities in doing assignments; 2) the learning outcomes of fourth grade students in Pancasila Education learning in Semester I have not reached the Minimum Completion Criteria (KKM) of 70, which is influenced by low learning motivation in the teaching and learning process; 3) the learning model used by educators is less innovative, tends to be monotonous and boring because the educator's teaching style is limited to delivering material.

As a result, learning is solely teacher-centered, and students are left to memorize material without developing a deep understanding. Educators should be able to identify creative approaches to implementing innovative learning models (Bukit *et al.*, 2022). To address these learning challenges, innovative learning models, such as the Mechanical Learning Approach (MEA), are needed. The MEA model is a variation of problem-solving learning that aims to achieve a specific objective. The advantages of this model are that it facilitates student problem-solving, increases student engagement during the learning process, and provides students with accessible ways to solve problems within their own abilities.

Based on the background and problems that have been described, this study aims to analyze the differences in PPKn learning outcomes between students who use the MEA learning model and students with the expository model, differences in learning outcomes based on the level of learning motivation (high and low), and the interaction between learning models and learning motivation on learning outcomes.

LITERATURE REVIEW

The Nature of Learning and Learning Outcomes

Learning is the process by which individuals acquire new, comprehensive behavioral changes. These changes result from experiences gained through the individual's interactions with their environment. Learning aims to develop intelligence and acquire knowledge, whereby individuals not only gather information but also integrate new knowledge and skills, enabling them to adapt to and thrive in various situations (Azani *et al.*, 2024; Salsabila *et al.*, 2024). Based on the opinions above, it can be concluded that learning is a process in which an organism experiences behavioral changes as a result of acquired experience. This process allows individuals to adapt to their environment and the situations they encounter. Through experience, organisms not only acquire new information but also change the way they think, act, and respond to existing stimuli, ultimately influencing their behavioral patterns.

The learning process involves more than mastering knowledge or skills; it can also change how individuals think, feel, and interact with others. Through learning, individuals not only acquire new information but also experience transformations in their thought patterns, attitudes, and social behavior. This process enables individuals to be more open to new ideas, increase empathy, and improve their ability to communicate and collaborate with others (Amin *et al.*, 2020). Learning outcomes are closely related to the mental processes that occur in students and to the knowledge acquired during learning. These mental processes include understanding, information processing, and the application of prior knowledge. Learning outcomes are a

direct result of the learning process, which encompasses various experiences, interactions, and teaching methods applied in the learning environment. When students are actively engaged in learning, they develop understanding and skills that are reflected in their learning outcomes. The quality of learning is determined not only by the material taught but also by how students internalize and apply knowledge in their daily lives (Henniwati, 2021; Subakti *et al.*, 2024).

A person's learning success must always refer to three domains inherent in the student: the cognitive, affective, and psychomotor domains. By understanding the development of students' abilities across these three aspects, educators can comprehensively evaluate and develop them (Harahap *et al.*, 2023). The following presents a description of the assessment aspects according to Bloom's taxonomy, as shown in Table 1, which outlines the stages and assessment instruments for the cognitive domain.

Table 1. Bloom's Cognitive Aspect Assessment

Stages	Instrument
Knowledge Level	Mentioning, defining, describing, matching, identifying, naming, outlining, and restating.
Level of Understanding	Explain, formulate in your own words, change, state broadly, give examples, estimate, differentiate, and draw conclusions.
Implementation Level	Calculate, use, appreciate, demonstrate, modify, relate, solve, and produce.
Level of Analysis	Describe, categorize, detail, select, separate, diagram, create schemes, and differentiate.
Synthetic Stage	Combine, collect, arrange, organize, design, rearrange, revise, tell, and make modifications.
Evaluation Stage	Compare, evaluate, contrast, criticize, interpret, and conclude.

Source: Harahap *et al.*, 2023

Table 2 presents the stages and assessment instruments for the affective aspect:

Table 2. Bloom's Affective Aspect Assessment

Stages	Instruments
Acceptance Level	Following, observing, asking, pointing, localizing, describing, identifying, and naming
Responding Stage	Welcoming, discussing, adjusting, agreeing, informing, describing, answering, practicing, and collecting.
Level of Appreciation	Proposing, identifying oneself, completing, explaining, considering the truth, reporting, exchanging experiences, cooperating, and following.
Organizing Stage	Integrating, maintaining, harmonizing, combining, drawing general conclusions, organizing, creating organizations, and synthesizing.
Characteristic Stage	Firm in their stance, consistent in their actions, self-confident, and self-improving.

Source: Harahap *et al.*, 2023

The stages and assessment instruments for the psychomotor aspects are presented in **Table 3**.

Table 3. Bloom's Psychomotor Aspect Assessment

Stages	Instruments
Imitation Stage	Following, repeating, and imitating.
Level of Manipulation	Follow the instructions and try it yourself.
Articulation Stage	Perform harmoniously and perform regularly.
Naturalization Stage	Act naturally and skillfully.

Source: [Harahap et al., 2023](#)

One subject in elementary school is Civics. For some students, Civics is a boring subject because it contains a lot of complex material ([Mu'afifah et al., 2023](#)). PPKn is an integrated subject in schools, and its content can help students become better individuals within the school environment and society, as PPKn materials are highly useful in students' lives ([Nugroho, 2019](#)).

MEA Learning Model (*Means-Ends Analysis*)

The Learning Model Means-Ends Analysis (MEA) consists of three elements: means, ends, and *analysis*. MEA is a learning model that analyzes a problem in various ways to obtain a final result or goal ([Mariani & Susanti, 2019](#)). The MEA learning model, in its application, breaks down the overall objective into several steps or actions based on applicable concepts. MEA was first developed by Newell and Simon, who stated that MEA is a technique used in Artificial Intelligence to control search in problem-solving computer programs ([Ferdiansyah & Kasiono, 2024](#)).

Over time, the MEA model has been adapted for educational contexts and has had various practical applications. One example is the MEA learning model, which is used to clarify one's ideas when proving mathematical theorems. In this context, the MEA helps students identify the steps required to arrive at a mathematical solution in a structured and systematic manner. By dividing large problems into smaller parts, students can more easily understand and organize the proof process, and are encouraged to think logically and plan appropriate actions ([Puspitasari, 2018](#)).

The MEA steps involve problem-solving and communication processes at each step. In the first stage, problem solvers are required to read and interpret the problem. In the second stage, they must observe and make predictions, then gather information. In the third stage, students are required to communicate and explain their thinking about mathematical ideas, using mathematical language to present ideas that illustrate relationships and create models ([Fitri & Sari, 2021](#)).

The steps in implementing the MEA learning model are as follows ([Hossaini & Kamiluddin, 2021](#)).

1. Understanding of the problem can be identified by the information contained in the problem, which the students require.
2. Understanding the concepts contained in the problem so that the differences between the current situation and the previous situation required by students can be identified.
3. Subgoals in problem solving should be more focused on solving problems in stages so that the goals are achieved as formed by students.
4. Problems at every subgoal are gradually reduced until the goals are achieved and completed by the students.

Learning Motivation

Motivation is a crucial part of life, as it is the primary driving force behind achieving goals and overcoming challenges. Without motivation, a person may feel lost and find it difficult to strive for more. In certain circumstances, motivation is the primary driving force for action, especially when faced with challenges or situations that require action. In the context of learning, students with strong learning motivation are encouraged to continue learning to achieve targets and goals, supported by an awareness of the value of learning itself (Yulika, 2019). Moreover, motivation enables students to regulate their behavior and become more disciplined (Sari *et al.*, 2020).

METHODS

This research employs a quantitative, quasi-experimental design. Quasi-experimental research was conducted by providing treatments to both the experimental and control classes using different learning models. The researcher used existing classes rather than creating new ones. Researchers used pre-formed classes rather than creating new ones. This research employed a 2×2 factorial design, with two independent variables at two levels, to examine main effects and interactions on learning outcomes.

This research was conducted at SD Swasta Tunas Harapan Islam Medan, located in Bajak V, Amplas, on September 21, 2023. On the same day, the researcher also held an initial discussion with educators regarding the curriculum and student characteristics. The population in this study was all fourth-grade students of V in the 2023/2024 academic year, consisting of two classes, namely class IV-A and IV-B, each consisting of 28 students, resulting in a total population of 56 students. The sample is part of the population that will be the study's primary focus. The sample is a portion of the population selected representatively. The sample for this study was determined using cluster random sampling. Using this technique, samples were randomly drawn from all classes, with class IV-A selected for the MEA learning model and class IV-B for the expository learning model.

The data collection techniques used in this study included tests and questionnaires. The tests used were multiple-choice items to measure student understanding. In addition to the tests, a questionnaire was administered to assess students' learning motivation using a scale. The learning motivation questionnaire in this study consisted of 30 statements. Students were given complete freedom to answer each statement.

The data analysis techniques employed were descriptive and quantitative, including hypothesis testing. Descriptive analysis was conducted to describe or summarize the data in the first stage of data analysis. The descriptive methods used in this study were measures of central tendency and variability. Central tendency measures were used to determine the general value of a group of values. Meanwhile, hypothesis testing was conducted using a 2x2 ANOVA, an inferential technique for testing differences in means. ANOVA can be used to determine whether the mean values of two or more samples differ significantly or not. A significant F value indicates to researchers that the samples studied came from different populations.

RESULTS AND DISCUSSION

Student Learning Outcomes Using the MEA Model and the Expository Model

After the learning process is completed, a posttest is administered to the class of 28 students using the MEA learning model. The posttest implementation results are presented in Table 4.

Table 4. Comparison of the Frequency Distribution of Students' Civics Learning Outcomes Based on the MEA and Expository Learning Models

No	MEA model			No	Expository Model		
	Interval Class	Frequency	Percentage		Interval Class	Frequency	Percentage
1	75 -79	2	7,14	1	60 - 67	3	10,71
2	80 - 84	2	7,14	2	68 - 75	6	21,43
3	85 - 89	6	21,43	3	76 - 83	4	14,29
4	90 - 94	12	42,86	4	84 - 91	10	35,71
5	95 - 100	6	21,43	5	92 - 100	5	17,86
Total		28	100	Total		28	100

Source: 2023 Research

Based on Table 4, students taught using the MEA learning model obtained a maximum score of 100, a minimum score of 75, an average score of 88.75, a mode of 90, a median of 90.00, a variance of 41.89, and a standard deviation of 6.47. Based on the average score, 6 students (21.43%) are at the average learning outcomes score, and 4 students (4.29%) are below the average. As many as 18 students (64.29%) exceeded the average score for learning outcomes.

Meanwhile, the learning outcomes of PPKn students taught using the expository learning model achieved a maximum score of 100, a minimum score of 60, an average of 82.86, a mode of 90, a median of 85.00, a variance of 130.42, and a standard deviation of 11.42. Based on the average score, 4 people (14.29%) are at the average score for learning outcomes, 9 people (32.14%) are below the average score, and 15 people (53.57%) are above the average score. Based on the average results, students who learn with the MEA model achieve higher average learning outcomes than those who learn with the expository model.

PPKn Learning Outcomes of Students with High Learning Motivation and Low Learning Motivation

Before the learning process was implemented, a questionnaire was administered to students in each class, both in the MEA and expository learning model classes. The learning outcomes of students with high learning motivation are presented in Table 5.

Table 5. Comparison of the Frequency Distribution of Students' Civics Learning Outcomes Based on High Learning Motivation and Low Learning Motivation

No	High Learning Motivation			No	Low Learning Motivation		
	Interval Class	Frequency	Percentage		Interval Class	Frequency	Percentage
1	75 -79	1	3,70	1	60 - 67	3	10,34
2	80 - 84	2	7,41	2	68 - 75	7	24,14
3	85 - 89	5	18,52	3	76 - 83	4	13,79
4	90 - 94	13	48,15	4	84 - 91	10	34,48
5	95 - 100	6	22,22	5	92 - 100	5	17,24
Total		27	100	Total		29	100

Source: 2023 Research

Based on the results of the frequency distribution in Table 5, it is known that the learning outcomes of PPKn students have high learning motivation, the maximum score is 100, the minimum score is 75, the average value is 89.63, the mode is 90, the median is 90.00, the variance is 38.32, and the standard

deviation is 6.19. Based on the average score, 5 people (18.52%) are at the average score for learning outcomes, 3 people (11.11%) are below the average score, and 19 people (70.73%) are above the average score.

Meanwhile, the PPKn learning outcomes of students who have low learning motivation obtained a maximum score of 100, a minimum score of 60, an average score of 82.24, a mode of 90, a median of 85, a variance of 120.69, and a standard deviation of 10.99. Based on the average score, 4 people (13.79%) are at the average score for learning outcomes, 10 people (34.48%) are below the average score, and 15 people (51.72%) are above the average score. The learning outcomes of students with high learning motivation are higher than the learning outcomes of students with low learning motivation.

PPKn Learning Outcomes of Students with High Learning Motivation and Low Learning Motivation Using the MEA Model

After learning is completed, posttest questions are administered to students in the class using the MEA learning model, who have high learning motivation; results are presented in Table 6.

Table 6. Comparison of the Frequency Distribution of Students' Civics Learning Outcomes Based on High Learning Motivation, Low Learning Motivation, and the MEA Model

No	High Learning Motivation and the MEA Model			No	Low Learning Motivation and the MEA Model		
	Interval Class	Frequency	Percentage		Interval Class	Frequency	Percentage
1	80 - 84	1	6,67	1	75 - 80	3	23,08
2	85 - 89	4	26,67	2	81 - 86	2	15,38
3	90 - 94	7	46,67	3	87 - 92	5	38,46
4	95 - 100	3	20,00	4	93 - 100	3	23,08
	Total	15	100	Total	13	100	

Source: 2023 Research

Based on the results of the frequency distribution in Table 6, it is known that the learning outcomes of PPKn students who have high learning motivation are taught using the MEA learning model, the maximum score is 100, the minimum score is 80, the average score is 89.67, the mode is 90, the median is 90.00, the variance is 30.24 and the standard deviation is 5.49. Based on the average score, 4 people (26.67%) are at the average score for learning outcomes, 1 person (6.67%) is below the average score, and 10 people (66.67%) are above the average score.

Meanwhile, the PPKn learning outcomes of students with low learning motivation using the MEA learning model obtained a maximum score of 100, a minimum score of 75, an average of 87.69, a mode of 90, a median of 90.00, a variance of 56.73, and a standard deviation of 7.53. Based on the average score, 5 people (38.46%) are at the average score for learning outcomes, 5 people (38.46%) are below the average score, and 3 people (23.08%) are above the average score. The learning outcomes of students with high learning motivation and those who learn with the MEA model are higher than those of students with low learning motivation and those who learn with other models.

PPKn Learning Outcomes of Students with High Learning Motivation and Low Learning Motivation Using the Expository Model

After learning is completed, questions are administered in class to students using the expository learning model who have high learning motivation; results, post-test, are presented in Table 7 that follows.

Table 7. Comparison of the Frequency Distribution of Students' Civics Learning Outcomes Based on High Learning Motivation, Low Learning Motivation, and the Expository Model

No	High Learning Motivation and the Expository Model			No	Low Learning Motivation and the Expository Model		
	Interval Class	Frequency	Percentage		Interval Class	Frequency	Percentage
1	75 - 80	2	16,67	60 – 67	3	23,08	
2	81 - 86	1	8,33	68 – 75	5	15,38	
3	87 - 92	6	50,00	76 – 83	3	38,46	
4	93 - 100	3	25,00	84 – 91	3	23,08	
5				92 – 100	2	12,50	
	Total	12	100	Total	16	100	

Source: 2023 Research

Based on the results of the frequency distribution in Table 7, it is known that the learning outcomes of students who have high learning motivation using the expository learning model obtained a maximum score of 100, a minimum score of 75, an average value of 89.58, a mode of 90, a median of 90.00, a variance of 52.08 and a standard deviation of 7.22. Based on the average score, 6 people (50.00%) are at the average score for learning outcomes, 3 people (25.00%) are below the average score, and 3 people (25.00%) are above the average score.

Meanwhile, the learning outcomes of PPKn students with low learning motivation using the expository model obtained a maximum score of 100, a minimum score of 60, an average of 77.81, a mode of 75, a median of 77.50, a variance of 133.23, and a standard deviation of 11.54. Based on the average score, 3 people (18.75%) are at the average score for learning outcomes, 8 people (50.00%) are below the average score, and 5 people (31.25%) are above the average score. The learning outcomes of students with high learning motivation and those who learn using the expository model are higher than those of students with low motivation who learn using the same model.

Hypothesis Testing Results

Before hypothesis testing, normality and homogeneity tests were conducted. The results of the normality test showed that all p-values exceeded $\alpha = 0.05$, indicating that all data were normally distributed. The homogeneity test showed that the calculated X^2 value = 4.049 and the table $X^2 = 7.820$ at a significance level of $\alpha = 0.05$, $dk = 3$. Because the calculated $X^2 <$ the X^2 table value, it was concluded that the samples came from a population with homogeneous variance.

Comparison of MEA and Expository Models

The ANOVA results show a significant effect ($p = 0.033$). Since $sig = 0.033 < sig = 0.05$, then H_0 rejected and H_1 accepted, so it can be concluded that students who are taught using the MEA model obtain higher PPKn learning outcomes than students who are taught using the expository model.

Comparison of High and Low Learning Motivation

The results of the ANOVA test show sig = 0.004. Since sig = 0.004 < 0.05, H₀ is rejected, and H₁ is accepted, indicating that students with high learning motivation obtain higher PPKn learning outcomes than students with low learning motivation.

Interaction Between Learning Models and Learning Motivation

The results of the ANOVA test show sig = 0.036. Because sig = 0.036 < 0.05, H₀ is rejected and H₁ is accepted, indicating that the interaction between learning models and learning motivation influences students' PPKn learning outcomes.

Because there is an interaction between the learning model and learning motivation in influencing student learning outcomes, it is necessary to carry out further testing (*post hoc test*) to determine the average learning outcomes of which samples showed differences. To examine the interaction between the learning model and learning motivation in influencing student learning outcomes, a post hoc Scheffe test was conducted. A summary of the Scheffe test results is presented in Table 8.

Table 8. Summary of Test Calculation Results: Chef

No	Interaction	F _{count}	F _{table} (α = 0.05) dk (3,58)
1	μA ₁ B ₁ with μA ₂ B ₁	0,6215	2,783
2	μA ₁ B ₁ with μA ₂ B ₂	0,0276	2,783
3	μA ₁ B ₁ with μA ₁ B ₂	3,9252	2,783
4	μA ₂ B ₁ with μA ₁ B ₂	3,6661	2,783
5	μA ₂ B ₂ with μA ₂ B ₁	3,1473	2,783
6	μA ₂ B ₂ with μA ₁ B ₂	0,5616	2,783

Source: 2023 Research

The results of the Scheffe test in Table 8 above show significant differences in interactions 3, 4, and 5 (F count > F table = 2.783), while interactions 1, 2, and 6 do not show significant differences (F count < F table = 2.783).

Discussion

Effectiveness of the MEA Model Compared to the Expository Model

The study's results indicate that the MEA model is more effective than the expository model in improving student learning outcomes, particularly for highly motivated students. This finding aligns with previous research showing that implementing the MEA model affects student learning outcomes, with improvements observed both before and after its use. (Mulasari *et al.*, 2020). An appropriate learning model can enhance students' understanding, motivation, and engagement, thereby improving learning outcomes. Conversely, using an inappropriate learning model can make it difficult for students to understand the material and reduce their interest in learning (Susanti *et al.*, 2024).

MEA learning model (*Means-Ends Analysis*) is a learning approach designed to develop critical thinking and problem-solving skills through activities that require students to build, revise, and apply models in real-world contexts. In this model, students are given complex, open-ended problems and asked to work collaboratively to develop solutions that can be tested and adapted. MEA encourages students not only to

seek answers but also to explain their reasoning logically and systematically. This model is highly effective in improving higher-order thinking skills, mathematical communication, and adaptability to new situations, making it relevant to 21st-century learning (Amaliyah & Supardi, 2022; Qusyairi & Watoni, 2021).

Advantages of the MEA Model and Its Impact on Learning

The MEA learning model has several advantages that enhance its effectiveness in improving student learning outcomes. The advantages of the MEA model include the development of problem-solving skills, as MEA accustoms students to solving problems systematically. This advantage is crucial because it equips students with analytical thinking skills that can be applied to various learning contexts and everyday life (Mulasari et al., 2020). In addition, MEA encourages students' active participation in learning and provides frequent opportunities to express their ideas, thereby fostering students' self-confidence and communication skills (Septiani & Andiani, 2021).

Furthermore, the MEA model optimizes knowledge and skills by providing students with more opportunities to apply their existing knowledge and skills. This aligns with the principle of meaningful learning, which emphasizes activating students' prior knowledge as a foundation for building new understanding (Asih & Ramdhani, 2019). Finally, MEA can accommodate differences in ability, allowing students with lower abilities to respond to problems in their own way, thereby creating an inclusive and non-discriminatory learning environment. The collaborative learning aspect of MEA provides students with numerous opportunities to learn by answering questions in group discussions, thereby facilitating social learning and the development of interpersonal skills (Hossaini & Kamiluddin, 2021).

The Influence of Learning Motivation on Academic Achievement

This study confirms that students with high learning motivation achieve significantly higher learning outcomes than those with low learning motivation. This finding supports previous research showing that student learning motivation influences learning outcomes and that students with high learning motivation achieve better outcomes than those with low learning motivation (Sudirman et al., 2024; Winahyu et al., 2024). Learning motivation helps students achieve their learning goals because they have a high ability to learn and achieve learning goals, so that students who have high learning motivation will feel that learning is interesting and get better learning results compared to students who have low learning motivation who feel bored in the learning process because of their low motivation to learn (Mangangantung et al., 2022; Umar et al., 2023).

Interaction Between Learning Models and Learning Motivation

The significant interaction between learning model and learning motivation indicates that the effectiveness of teaching methods depends on learner characteristics. This finding suggests that educators should consider both the instructional approach and learner motivation levels when designing learning experiences. An appropriate learning model should be aligned with learner characteristics, learning objectives, and the material to be delivered (Khaira et al., 2023). The right model not only helps students understand the material more easily but also encourages their active involvement in the learning process (Mansir, 2021).

For conceptual material, cooperative learning models or group discussions can enhance students' critical thinking and collaboration skills. Meanwhile, for material that requires practical skills, a project-based or problem-based learning approach may be more effective. Other research suggests that implementing the MEA model positively affects student learning processes and outcomes by teaching students to solve

problems in various ways, thereby achieving desired goals (Mariani & Susanti, 2019; Sudarman & Linuhung, 2021).

Implications and Limitations of the Research

This research provides educators with an understanding of how learning models and student motivation influence student learning outcomes. Educators are expected to implement other innovative learning models to create engaging learning experiences for students. They must also attend to student motivation, as it influences learning outcomes.

The limitations of this study include its limited application of the MEA model, its study of student learning motivation limited to Civics and Fourth Grade students, and its narrow focus on a single topic. Future research should broaden the scope to provide more comprehensive insights into effective teaching and learning strategies across various educational contexts.

CONCLUSION

Based on research on the effectiveness of the Means-Ends Analysis (MEA) learning model for PPKn learning outcomes in terms of student learning motivation, three main findings were obtained that address the problem formulation. First, the MEA learning model proved significantly more effective than the expository model in improving PPKn learning outcomes. The advantage of MEA lies in its ability to foster critical thinking, problem-solving, and active student involvement through a constructivist approach and contextual activities. Second, learning motivation significantly influences learning outcomes. Students with high motivation demonstrate higher academic achievement than those with low motivation, as evidenced by findings from SD Tunas Harapan Islam.

Third, there is a significant interaction between the learning model and learning motivation. The effectiveness of the MEA model increases substantially when supported by high learning motivation, indicating a synergistic effect. Conversely, under conditions of low motivation, the model's effectiveness also tends to decrease. This finding confirms that learning success is influenced not only by the method employed but also by students' readiness and internal conditions. This research not only answers the three research questions but also provides a practical contribution to efforts to improve the quality of PPKn learning.

In light of these findings, it is recommended that Civics and Citizenship Education (PPKn) teachers begin implementing the MEA learning model as a more effective alternative for improving student learning outcomes, particularly in developing critical thinking and problem-solving skills. Furthermore, educators should attend to students' motivational factors by implementing strategies tailored to their characteristics and needs. The selection of an appropriate learning model should be tailored to students' levels of motivation to ensure an optimal and meaningful learning process. The combination of an interactive learning approach and efforts to enhance learning motivation is expected to significantly improve the quality of Civics and Citizenship Education (PPKn) instruction in elementary schools.

AUTHOR'S NOTE

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