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Picture and Picture Visual Learning for Improving Economics Achievement: Evidence from a Pre-Experimental Classroom Study

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Abstract

The low level of student engagement in Economics learning, which remains predominantly teacher-centered, may negatively affect learning outcomes. One alternative to improve students' participation and academic achievement is the implementation of the Picture and Picture learning model, which utilizes visual media to facilitate the learning process. This study aimed to examine the effect of the Picture and Picture learning model on students' learning outcomes in Economics at the tenth grade of SMA Negeri 15 Bone. This research employed a quantitative approach using a pre-experimental design with a One-Group Pretest–Posttest Design. The sample consisted of 34 students from class X.G selected through random sampling. Data were collected using a learning achievement test and a student response questionnaire and were analyzed using descriptive statistics and the Wilcoxon Signed Rank Test because the data were not normally distributed. The results indicated that the implementation of the Picture and Picture learning model improved students' learning outcomes, as reflected in the increase in the mean score from 49.81 on the pretest to 87.84 on the Posttest. Furthermore, the Wilcoxon Signed Rank Test revealed a significance value of $p < 0.05$, indicating a statistically significant effect of the Picture and Picture learning model on students' learning outcomes. In addition, most students expressed positive responses toward the implementation of the learning model. Therefore, the Picture and Picture learning model can be considered an effective instructional alternative for improving students' learning outcomes in Economics.

Keywords: Picture And Picture Learning Model; Learning Outcomes; Economics; Instructional Model; Senior High School

1. Introduction

Education is a fundamental aspect of human resource development, as it plays a crucial role in enhancing students' knowledge, skills, attitudes, and character. Through education, individuals are expected to develop their full potential, enabling them to participate actively, creatively, and responsibly in society (Wahyudi et al., 2023). Furthermore, education is inherently dynamic, as it continuously evolves in response to changing societal needs and advancements in scientific knowledge. Therefore, the implementation of education must be aligned with the demands of the times to produce graduates who possess the competencies required for the 21st century (Widia Nanda et al., 2023).

The success of education is determined not only by the curriculum but also by the quality of the learning process implemented in the classroom. Effective learning is characterized by the active engagement of students in innovative, creative, effective, and enjoyable learning activities (Asnasari et al., 2024). In this process, teachers play a crucial role in selecting instructional models that are aligned with the characteristics of the subject matter and the needs of students. The implementation of appropriate instructional models can foster more dynamic classroom interactions, enhance student participation, and promote the development of student-centered learning (Asrianti;Haeril;Sandi, 2024).

One instructional model that can promote students' active engagement is the Picture and Picture learning model. This model is a form of cooperative learning that utilizes visual images as instructional media to help students understand concepts through activities involving observing, sequencing, and logically connecting images in accordance with the learning material (Sandi et al., 2021). The use of visual media not only facilitates the delivery of information but also encourages students to think critically, engage in discussions, and construct their own understanding independently. Consequently, the learning process is no longer centered on the teacher's delivery of information but rather on learning activities that actively involve students in the construction of knowledge (Nender et al., 2023b)

The effectiveness of the Picture and Picture learning model has been widely reported in previous studies. The findings indicate that this model can improve students' learning outcomes across various educational levels, particularly in elementary and junior secondary schools. However, the majority of these studies have primarily focused on science and mathematics subjects, leaving empirical evidence regarding the implementation of the **Picture and Picture** learning

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model in Economics at the senior high school level relatively limited. This condition suggests that there is still considerable scope for further investigation into the effects of this instructional model across different subject areas and educational levels.

This phenomenon is consistent with the learning conditions observed at SMA Negeri 15 Bone. Based on preliminary observations, the teaching of Economics in Grade X is still predominantly characterized by conventional teacher-centered instructional practices. As a result, students tend to be less actively engaged in the learning process, lose attention more easily, and demonstrate relatively low levels of learning enthusiasm. This limited student engagement may adversely affect learning outcomes, highlighting the need to implement an instructional model that can enhance students' active participation and involvement in constructing their understanding of the subject matter.

Based on the theoretical review and the observed classroom phenomena, this study presents a clear research gap. Although numerous studies have demonstrated the effectiveness of the Picture and Picture learning model in improving learning outcomes at the elementary and junior secondary school levels, research examining its effects on learning outcomes in Economics at the senior high school level remains limited. Furthermore, the characteristics of Economics as a subject, which require conceptual understanding and the ability to relate theoretical knowledge to real-life phenomena, may lead to findings that differ from those reported in studies conducted in other subject areas. Therefore, empirical evidence is needed to examine the effect of the Picture and Picture learning model within the context of Economics instruction at the senior high school level.

The novelty of this study lies in examining the effect of the picture and Picture learning model on students' learning outcomes in Economics among Grade X students at SMA Negeri 15 Bone. This study extends the application of the *Picture and Picture learning model, which has previously been investigated primarily in other subject areas and educational levels, thereby providing empirical evidence of its effectiveness in the context of Economics education. The findings are also expected to serve as a valuable reference for teachers in selecting instructional models that enhance student engagement while supporting the achievement of improved learning outcomes.

2. Literature Review

2.1. Picture and Picture Learning Model

The Picture and Picture learning model is a cooperative learning approach that utilizes visual images as the primary instructional medium to facilitate students' understanding of learning concepts. This model positions students as active participants through activities such as observing, sequencing, matching, and connecting images according to the logical sequence of the learning material (Suleman & Idayanti, 2024). This process encourages students to construct their understanding through critical thinking, collaborative discussion, and providing logical justifications for the sequence of images they have arranged. Consequently, the learning process becomes more student-centered than conventional teacher-centered instruction (Nender et al., 2023a).

The implementation of the Picture and Picture learning model is consistent with instructional approaches that emphasize students' active engagement in the learning process. Through the use of visual media, students do not merely receive information from the teacher but also actively participate in identifying systematic relationships among concepts (Gustiawan et al., 2023). Such engagement can enhance students' attention, learning interest, and interaction throughout the learning process. Therefore, the Picture and Picture learning model is regarded as an innovative instructional alternative that can create a more active, creative, effective, and enjoyable learning environment (Asrianti;Haeril;Sandi, 2024).

2.2. Learning Outcomes

Learning outcomes are indicators of students' success after participating in the learning process. The achievement of learning outcomes reflects the extent to which students have mastered the predetermined competencies and demonstrates the effectiveness of the instructional process. Learning outcomes are influenced not only by individual abilities but also by various external factors, one of which is the instructional model employed by the teacher. Selecting an appropriate instructional model can create more meaningful learning experiences, thereby supporting the improvement of students' learning outcomes (Lubis et al., 2024).

In Economics education, learning outcomes serve as an important indicator of students' success in understanding the economic concepts, principles, and phenomena addressed in the learning process. Therefore, an instructional model that actively facilitates students' construction of knowledge is essential to enable them to understand and retain the learning material more effectively.

2.3. Relationship Between the Picture and Picture Learning Model and Learning Outcomes

The Picture and Picture learning model is closely associated with the improvement of learning outcomes because it provides students with opportunities to acquire meaningful learning experiences through the use of visual media. Activities such as observing, sequencing, and discussing images help students understand the relationships among concepts in a more systematic manner. This process enables students to actively construct their understanding, making the acquired information easier to comprehend and reta in (Asnasari & Kuntari, 2024).

Several previous studies have demonstrated that the Picture and Picturelearning model is effective in improving students' learning outcomes across various educational levels. A study conducted by (Fitri, 2025) and (Mema & Mete, 2022) reported that the implementation of the Picture and Picture learning model had a positive effect on students' learning outcomes. Nevertheless, these studies have primarily been conducted at the elementary and junior secondary school levels, particularly in science and mathematics subjects. Consequently, empirical evidence regarding the effect of the Picture and Picture learning model on learning outcomes in Economics at the senior high school level remains relatively limited (Pangestu & Fitri Puspa Sari, 2025).

Based on the theoretical review and the findings of previous studies, it can be assumed that the implementation of the Picture and Picture learning model has the potential to positively influence students' learning outcomes. By promoting students' active engagement and incorporating visual media into the learning process, this model is expected to enhance conceptual understanding and contribute to more optimal learning outcomes in Economics.

3. Research Methods and Materials

This study employed a quantitative approach using a pre-experimental research design, specifically the **One-Group Pretest–Posttest Design**. The design involved a single experimental group that completed a pretest prior to receiving the intervention in the form of the **Picture and Picture** learning model, followed by a posttest to assess changes in students' learning outcomes after the intervention. This design was selected to evaluate the effect of the instructional model on students' learning outcomes by comparing their pretest and posttest scores.

The study was conducted at SMA Negeri 15 Bone, Bone Regency, South Sulawesi Province, during the second semester of the 2025/2026 academic year, from February to April 2026. The research site was selected based on preliminary observations indicating the need for a more innovative instructional model to improve students' learning outcomes in Economics.

The study population consisted of all Grade X students at SMA Negeri 15 Bone, totaling 250 students distributed across eight classes. The research sample comprised 34 students from Class X.G. The sample was selected using a random sampling technique, ensuring that each member of the population had an equal opportunity to be included in the study. Class X.G was subsequently designated as the experimental group and received instruction using the Picture and Picture learning model.

This study involved two variables: the Picture and Picture learning model as the independent variable (X) and students' learning outcomes as the dependent variable (Y). The Picture and Picture learning model was implemented through image-based learning activities emphasizing the logical sequencing of images, classroom discussion, and concept reinforcement. Meanwhile, learning outcomes were measured based on students' cognitive abilities, including remembering, understanding, applying, and analyzing the learning material.

The primary research instrument was a 15-item multiple-choice achievement test developed according to the competency indicators of the Economics curriculum. In addition to the achievement test, a student response questionnaire was administered to obtain supporting data regarding students' perceptions of the implementation of the

learning model, while documentation was collected to complement the information obtained throughout the research process.

Before being administered in the study, the achievement test was piloted in a class outside the research sample. The quality of the test items was evaluated through item difficulty and discrimination index analyses, and only items meeting the established criteria were retained for data collection.

The research procedure consisted of five stages: (1) the preparation stage, including preliminary observation, the development of instructional materials, and the development and pilot testing of the research instruments; (2) administration of the pretest to assess students' initial abilities; (3) implementation of the Picture and Picture learning model as the research intervention; (4) administration of the posttest and distribution of the student response questionnaire after the completion of the learning activities; and (5) data processing and interpretation to draw the research conclusions.

The data were analyzed using both descriptive and inferential statistical techniques. Descriptive analysis was conducted to summarize the characteristics of the learning outcome data using the mean, median, standard deviation, minimum score, and maximum score. Prior to hypothesis testing, the normality of the data was assessed using the Shapiro–Wilk test. Because the data did not satisfy the assumption of normality, the hypothesis was tested using the Wilcoxon Signed - Rank Test at a 5% significance level to determine the effect of the Picture and Picture learning model on students' learning outcomes. In addition, data obtained from the student response questionnaire were analyzed descriptively using frequency distributions and percentages to describe students' responses to the implemented instructional model.

4. Results and Discussion

4.1. Students' Learning Outcomes Before and After the Implementation of the Picture and Picture Learning Model

Students' learning outcomes were assessed through a pretest administered before the intervention and a posttest conducted after the implementation of the Picture and Picture learning model. Descriptive analysis was employed to provide an overview of the changes in students' learning outcomes following the instructional intervention.

Tabel 4.1.1. Descriptive Statistics of Students' Learning Outcomes

Statistics	Pretest	Posttest
Sample Size	34	34
Minimum Score	13	60
Maximum Score	80	100
Mean	49.81	87.84
Standard Deviation	18.728	13.481

The results of the descriptive analysis indicate an improvement in students' learning outcomes following the implementation of the Picture and Picture learning model. This improvement is reflected in the increase in the mean score, accompanied by higher minimum and maximum scores on the posttest. In addition, the distribution of posttest scores was more homogeneous than that of the pretest, suggesting that students' learning outcomes became more consistent after the intervention.

To provide a clearer overview of the changes in the distribution of learning outcomes, students' scores were subsequently classified into several performance categories, as presented in Table 2.

Tabel 4.1.2. Distribution of Students' Learning Outcome Categories

Category	Pretest n (%)	Posttest n (%)

Very High	0 (0.00%)	17 (50.00%)
High	0 (0.00%)	11 (32.35%)
Moderate	6 (17.65%)	2 (5.88%)
Low	17 (50.00%)	4 (11.76%)
Very Low	11 (32.35%)	0 (0.00%)

The distribution of learning outcome categories demonstrates a clear shift following the implementation of the instructional model. Prior to the intervention, most students were classified in the low and very low performance categories. After the intervention, the majority of students were classified in the high and very high categories, while no students remained in the very low category. This shift in the distribution indicates an overall improvement in students' learning outcomes following the instructional intervention.

4.2. Students' Responses to the Implementation of the Picture and Picture Learning Model

Students' responses to the implementation of the Picture and Picture learning model were assessed using a questionnaire consisting of five indicators: the ease of understanding the learning material through visual images, students' interest in the learning process, active participation during learning activities, the contribution of group discussions, and improvement in conceptual understanding.

Tabel 4.2 Students' Responses to the Implementation of the Picture and Picture Learning Model

Statement	Agree	Less Agree	Disagree
Images help me understand the learning material.	79.41%	17.65%	2.94%
The learning process becomes more interesting.	82.35%	14.71%	2.94%
I am more actively engaged during the learning process.	76.47%	20.59%	2.94%
Group discussions help me understand the learning material.	79.41%	17.65%	2.94%
The Picture and Picture learning model helps improve my understanding.	82.35%	14.71%	2.94%

The questionnaire results indicate that the majority of students expressed positive responses across all measured indicators. Most respondents agreed that the use of visual images facilitated their understanding of the learning material, made the learning process more engaging, increased their active participation during classroom activities, enhanced the effectiveness of group discussions, and improved their overall understanding of the subject matter. Overall, these findings suggest that the Picture and Picture learning model was well received by students throughout the instructional process.

4.3. Hypothesis Testing

Before conducting the hypothesis test, the data were first examined using the Shapiro–Wilk normality test to determine the appropriate statistical analysis technique.

Tabel 4.3.1 Normality Test Results

Group	Sig.	Interpretation

Pretest	0.189	Normally Distributed
Posttest	< 0.001	Not Normally Distributed

The results of the normality test indicated that the pretest data satisfied the assumption of normality, whereas the posttest data did not. Therefore, hypothesis testing was conducted using the nonparametric Wilcoxon Signed-Rank Test.

Table 4.3.2. Results of the Wilcoxon Signed-Rank Test

Statistics	Value
Z	-5,099
Asymp. Sig. (2-tailed)	<0,001

The results of the Wilcoxon Signed-Rank Test showed that the significance value was below the 0.05 significance level. Therefore, the research hypothesis was accepted, indicating that the implementation of the Picture and Picture learning model had a significant effect on students' learning outcomes in Economics.

4.4. Discussion

The findings of this study indicate that the implementation of the Picture and Picture learning model had a positive effect on students' learning outcomes in Economics. These findings suggest that instruction incorporating visual media creates a more active learning process, enabling students to understand the concepts being taught more effectively. In the Picture and Picture learning model, students do not merely receive information from the teacher; instead, they actively engage in observing, sequencing, discussing, and relating images to learning concepts. This active involvement enables students to construct their understanding progressively, making the learning material easier to comprehend and retain.

From a theoretical perspective, these findings are consistent with the concept of student-centered learning, which emphasizes that knowledge becomes more meaningful when students actively participate in the learning process. The use of visual images as instructional stimuli helps students connect new information with their prior knowledge. In addition to enhancing students' attention and learning motivation, visual media also facilitates the understanding of abstract concepts in Economics. Consequently, the Picture and Picture learning model provides a more effective learning experience than conventional instruction that relies primarily on teacher-centered explanations (Asrianti;Haeril;Sandi, 2024).

The findings of this study are also consistent with those reported by (Yusal et al., 2022) and (Nender et al., 2023a), who reported that the implementation of the Picture and Picture learning model improved students' learning outcomes by enhancing learning activities and integrating visual media into the instructional process. The similarity between the present study and previous research lies in the positive effect of the Picture and Picture learning model on students' learning outcomes. These findings suggest that the use of images as instructional media helps students understand the learning material more systematically while increasing their engagement throughout the learning process.

Nevertheless, this study differs from previous research in several respects. Most earlier studies investigated the implementation of the Picture and Picture learning model at the elementary or junior secondary school level and in subjects other than Economics. In contrast, the present study was conducted among Grade X students at SMA Negeri 15 Bone and focused specifically on Economics. This difference in context demonstrates that the effectiveness of the Picture and Picture learning model is not limited to specific subjects but is also applicable to Economics education, which requires conceptual understanding and the ability to relate interconnected economic phenomena. Therefore, this study extends the existing empirical evidence regarding the application of the Picture and Picture learning model at the senior high school level.

Students' positive responses to the implementation of the Picture and Picture learning model further support the findings of this study. The use of visual images made the learning process more engaging, enhanced interaction among students during group discussions, and encouraged active participation in completing learning tasks. These conditions created a more conducive learning environment, thereby increasing students' motivation to participate in classroom activities. The increased level of student engagement throughout the learning process is likely to have contributed to the improvement in students' learning outcomes.

The contribution of this study lies in providing empirical evidence regarding the effect of the Picture and Picture learning model in Economics education at the senior high school level. This study not only reinforces the findings of previous research but also extends the application of the Picture and Picture learning model to a subject area that has received relatively limited scholarly attention. The novelty of this study lies in examining the effectiveness of the Picture and Picture learning model in Economics instruction at SMA Negeri 15 Bone using a One-Group Pretest–Posttest Design. Consequently, the findings provide empirical insights that may serve as a valuable reference for teachers and researchers in developing visual media -based instructional practices for Economics education.

5. Conclusion

This study aimed to analyze the effect of the Picture and Picture learning model on students' learning outcomes in Economics. The findings demonstrate that the implementation of the Picture and Picture learning model made a positive contribution to improving students' learning outcomes. These results indicate that instruction incorporating visual media and actively engaging students can support a more effective learning process in achieving the objectives of Economics education.

This study contributes empirically to the growing body of research on the implementation of the Picture and Picture learning model, particularly in the context of Economics education at the senior high school level. The findings provide further evidence that instructional models emphasizing active student participation and the use of visual media can serve as effective alternative strategies for enhancing both the quality of instruction and students' learning outcomes. From a practical perspective, the results may serve as a reference for teachers in selecting and implementing more innovative, interactive, and student-centered instructional models. The application of the Picture and Picture learning model is expected to increase students' engagement throughout the learning process, thereby making learning more meaningful and engaging.

This study has several limitations. First, it employed a One-Group Pretest–Posttest Design without a control group. Second, the sample was limited to a single class in one school, which restricts the generalizability of the findings to broader educational contexts. Therefore, future research is recommended to employ more rigorous experimental designs incorporating control groups, larger sample sizes, and more diverse school settings. In addition, future studies may investigate the effects of the Picture and Picture learning model on other educational outcomes, such as learning motivation, critical thinking skills, problem-solving abilities, and students' collaborative skills.

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