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Application of Picture and Picture in Increasing Student Learning Activeness in Civic Education Subjects

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ABSTRACT

This research is an improvement in the learning methods students use during learning. Aims to increase mastery of civic education competencies by applying the Picture And Picture model. This type of research is called Classroom Action Research (CAR). Data was collected using the test method. This classroom action research has four stages, namely: (1) planning, (2) implementation, (3) observation, and (4) reflection. The results of this research show that the Picture and Picture Learning Model positively impacts student learning achievement. This result can be seen from students' increasingly solid understanding of the material the teacher presented. The increase occurred from Cycle I to Cycle II. So it can be concluded that the application of the Picture And Picture Model can improve mastery of civic education class II lesson competencies at SD 3 Muhammadiyah Surakarta

INTRODUCTION

Today's education world has experienced rapid progress due to the help of continuously developing technology. The realm of education can grow competent individuals to participate in the global era (Ibrohim et al., 2021). The educational process requires cultivating important cognitive and affective skills among individuals (Susilo & Sudrajat, 2020). Education stands as an important element in human existence. Hence, education is urgently needed in all societies worldwide (Widayanti, 2020).

Learning is a process used to increase individual knowledge in a particular field, facilitating educational exchange between providers and recipients of knowledge (Suarim, 2021). Continuously, humans are involved in the act of learning. The ultimate goal of the

learning process is to ensure maximum understanding and successful implementation of learning tasks (Sudrajat et al., 2018).

Following Lubis' statement (quoted in Rahayu, Nuryani, and Riyadi 2019), the learning process requires purposeful and deliberate efforts on the part of educators to actively involve students in increasing their cognitive creativity. The main goal of facilitating learning efforts is to guide students to independently understand and assimilate knowledge, competencies, and dispositions (Seknun, 2013). Students are anticipated to demonstrate enthusiasm and satisfaction while participating in stimulating and meaningful learning engagements (Sudrajat, Sari, et al., 2023; Susilo et al., 2020). Therefore, the importance of learning frameworks concerning achieving learning outcomes is underlined.

Using instructional frameworks is significant in its correlation with implementing educational procedures. Using an instructional framework makes the student teaching process more efficient and interesting (Fujii, 2019). Furthermore, the teaching framework plays an important role in structuring students' activities during the educational process. This framework consists of different steps or phases for educational implementation. Regarding educators, instructional frameworks offer the advantage of using appropriate educational implementation processes to deliver educational content to students (Magdalena et al., 2024). An example of an effective teaching framework that can capture student interest is the Picture and Picture model, which is based on visual media.

Features of drawing and drawing models are characterized by innovation and creativity. Innovation entails providing new and stimulating content to all customers, while creativity involves generating interest among educational participants. Each column must offer fresh, varied, and consistently interesting material for students (Nurrahman, 2021). Creativity should inspire curiosity and engagement in educational participants, leading them to create or innovate solutions using techniques and strategies acquired through the learning process. Every learning model implemented must prioritize student involvement to ensure active participation. The students will gain new knowledge and information with each learning experience. It is important to underline that learning models must captivate students' interest and foster their ability to create solutions or overcome challenges using the methods and techniques they have learned through the educational process (Imtinan et al., 2023).

Susanto (2017) suggests that the Picture and Picture instructional model requires visual stimuli. This pedagogical approach is useful in cultivating students' imaginative capacity, as it encourages creative ideas. By engaging with visual content, students can understand concepts

more wisely because the cognitive process progresses from mere observation to critical thinking (Sudrajat et al., 2020). These observations underscore the significant role of visual media in enhancing educational experiences. Yuliastanti (2014) further describes Pictures and Drawings as a didactic methodology based on the strategic deployment of visual aids. Strategic presentation of images requires a coherent organization to facilitate optimal understanding among students. These visual aids serve as important tools in educational environments. Eitel & Scheiter (2015) explained that the Picture and Drawing methodology uses visual media to enhance learning. This concept aligns with the statement made by Zulfadli et al. (2020) regarding the systematic organization of visual stimuli in Picture and Picture pedagogy.

According to Munandar et al. (2024), the steps involved in the Picture and Picture learning model can be described as follows: 1) Educators provide the competencies needed to be acquired, 2) Introduce the material, 3) Show or present pictures depicting activities relevant to the material, 4) Guiding students in arranging pictures in a logical sequence, 5) Encouraging discussion about the reasons behind the order of pictures, 6) Based on the reasoning behind the order of pictures, educators proceed to provide relevant concepts or material in line with the desired competency, and 7) Facilitate conclusions and summaries by students.

To make the learning process effective in encouraging students to be active, it is also necessary to use media and learning methods that are appropriate, easy, and, of course, able to explain the material that can be understood and easily accepted by students in the learning process (Cook et al., 2013). One learning model teachers can apply to explain to students or elementary school students so that they can digest and receive material easily is that teachers can use the Picture and Picture method or a learning method based on image media. Therefore, researchers conducted research using the Picture and Picture learning model or based on images displayed via a projector, which will make it easier for students to learn in elementary school, especially for students or students who are still in the lower grades. Because elementary school students still think in concrete operational terms, an image-based learning model displayed via a projector will better understand the learning material according to students' thinking abilities. So, by using the IT-based picture and picture model, students are expected to be able to understand the learning material easily, have fun, and be more enthusiastic about actively participating in the learning process.

METHOD

This research method is Classroom Action Research. Classroom action research is

research carried out by teachers to improve learning processes and practices (Sugiyono, 2008). This Classroom Action Research has four stages, namely: (1) planning, (2) implementation, (3) observation, (4) reflection.

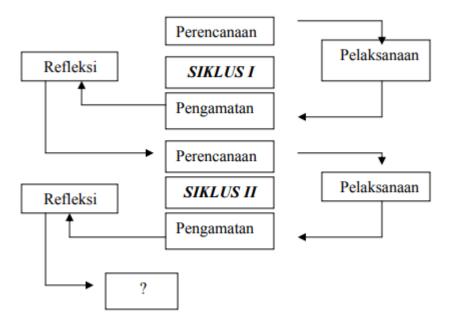


Figure 1. Classroom Action Research Flow (Sriyati, 2010)

This research uses an action research design for class II at SD Muhammadiyah 3 Surakarta. The study was carried out from September to October 2023. The classroom action research model carried out consisted of four different stages, namely: (1) the planning stage, which involved planning based on the challenges faced by teachers and students during the learning process; (2) action stage, which requires the implementation of the planned strategy; (3) the observation stage, focusing on observing the actions carried out; and (4) the reflection stage, where the researcher analyzes the weaknesses that persist in the learning process to design appropriate steps for the next cycle.

RESULTS AND DISCUSSION

Planning Stages

The Planning Stage includes various important tasks carried out by the researcher. These tasks include: 1) Identifying lesson material in Cycle I, specifically focusing on the role and significance of Pancasila. 2) Formulate a learning plan. 3) Set learning objectives for Cycle I. 4) Develop student activity sheets. 5) Create learning tools and resources. During this stage,

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researchers created learning tools consisting of lesson plans, formative test problems, and additional teaching aids.

Regarding the instructional process, teaching involves adjusting lesson plans based on the revisions made in Cycle I to avoid repeating errors or deficiencies from Cycle I in Cycle II. This result aligns with Fuji's (2019) opinion that learning plans are very important in the educational process because they provide structure and guidance for teachers to achieve learning goals effectively (Fujii, 2019). Through lesson plans, teachers help set clear and specific learning goals. This research ensures that each learning session has the right direction and goals to be achieved (Putri, 2016).

The findings show that in Cycle II, there was a slight increase in classical learning skills compared to Cycle I. This increase in student learning outcomes was associated with the teacher conducting tests at the end of each lesson, thus encouraging increased student motivation to study in the next session. This condition is proven based on research results, with structured lesson plans helping teachers implement learning to achieve learning objectives.

Activity and Implementation Stage

Implementing educational activities for the second cycle of research at SD Muhammadiyah 3 Surakarta class II involving 25 students is very important. The teaching process, on the other hand, is based on carefully prepared lesson plans. Simultaneously, observations are made during the teaching and learning process. During this phase, as per the researcher's observations, there was limited student interaction, possibly due to their newness and lack of understanding of the teacher's intentions. This phase necessitated the utilization of picture and drawing learning models. The implementation of learning follows the learning implementation sheet based on the lesson plan that has been designed. This result supports the application of the Picture and Picture learning model. This result aligns with Savitri et al. (2019) opinion that testing learning plans in real situations allows teachers to see how theories and plans are applied in practice.

The compatibility between learning designs has an impact on improving learning outcomes in the second cycle, which is associated with increasing teacher proficiency in using picture and picture learning models, fostering student familiarity with this pedagogical approach, and facilitating a better understanding of the material provided.

Observation Stage

At this point, analysis will be carried out to evaluate the effectiveness of the teaching and learning process using the Picture and Picture Learning Model. The observation stage in Lesson Study (LS) is an important phase where the teacher and his team observe the implementation of learning directly to collect data that supports reflective analysis (Susilo & Sudrajat, 2021). This stage ensures that the learning plan designed in the planning stage (plan) can be implemented well in the classroom (Savitri et al., 2019). Findings revealed the following: 1) Instructor implementation of the teaching process was inadequate, with basic elements still in place; 2) Cycle I exposed shortcomings, especially in the suboptimal implementation of the Picture and Picture Learning Model; 3) Student performance during cycle I lacked consistency, indicating below-standard engagement that was not aligned with the process skills approach.

In subsequent cycles, improved learning outcomes were noted, attributed to improved instructional methods that encouraged teacher-student interaction. The data illustrates: 1) The teacher effectively facilitates the learning process, although there are small problems that are not yet perfect, showing a commendable level of implementation; 2) Observation data confirms students' active participation during learning sessions; 3) Previous deficiencies have been corrected and improved, leading to overall improvement; 4) Student academic achievement in Cycle II shows real progress.

Reflection Stage

In Cycle I, educators have not effectively implemented the Picture and Picture Learning Model in teaching and learning, as evidenced by student engagement and academic performance. Consequently, substantial revisions are required to improve current approaches for successful instructional delivery. This result is in line with the opinion of Savitri et al. (2019), which evaluates the extent to which learning objectives have been achieved based on observations and data collected during the "Do" (implementation) stage.

During subsequent phases, instructors have skillfully used the Picture and Picture Learning Model, leading to positive student engagement and academic outcomes. Therefore, extensive revision is unnecessary; instead, the focus should be on optimizing existing practices and further integrating the Picture and Picture Learning Model to improve the educational process and effectively achieve learning goals.

Learning Activeness

Learning involves mental, physical, or social experiences aimed at growing ideas or knowledge (Sudrajat, Andriningrum, et al., 2023). It should be noted that learning outcomes refer to the skills students acquire through educational efforts (Brooks et al., 2014). These results include specific competencies students achieve following a structured teaching and learning process, including cognitive, affective, and psychomotor domains (Halimah & Adiyono, 2022). Brooks et al. (2014) argue that learning outcomes summarize all the achievements made by participants based on assessments determined in the educational curriculum. By synthesizing various perspectives, learning outcomes can be interpreted as the culmination of cognitive, affective, and psychomotor learning processes and assessed harmoniously with the educational curriculum.

Cycle I is based on thematic learning scenarios/blueprints developed using themes to connect various subjects. Teacher-designed evaluation assessments are carried out at the peak of the learning process. This assessment aims to measure students' academic progress compared to their level of involvement during the learning process.

Table 1. Comparison of Learning Activity

Aspect	Cycle I	Cycle II
Ask	76	77,3
Respond to questions	68	77,3
Participate in group discussions	58,6	68
Collaborative group work	60	72
Articulate a point of view	62,6	65,3
Actively listen to the presentation	70,6	73,3
Learning compliance	66%.	72,2%.

Based on Table 1, the average score in cycle I was 76 for students who asked the teacher, 68 for students who responded to questions, 58.6 for participating in group discussions, 60 for collaborative group work, and 62.6 for articulating an angle view, and 70.6 for active listening to the presentation. The level of learning compliance achieved in cycle I was 66%.

During Cycle 2, students achieved scores of 77.3 for questioning the teacher, 77.3 for answering questions, 68 for engaging in group discussions, 72 for collaborating in group activities, 65.3 for expressing opinions, and 73.3 for listening fully attention during the presentation. The level of learning compliance achieved in Cycle 2 reached 72.2%. Students' academic performance in the second cycle proved to be very satisfactory, underlining the effectiveness of the thematic learning approach in the second-grade curriculum at SD 3

Muhammadiyah Surakarta.

Using pictures or diagrams in learning helps students visualize abstract or complex concepts (Anggrella & Sudrajat, 2024). This statement can make it easier for them to understand because images can convey information more directly and easily digestibly than text or verbal explanations alone. This research is in line with research by Hasna (2022) that the Picture and Picture model can help students make connections between the concepts being taught. By looking at pictures or diagrams that show the relationship between various elements or concepts, students can more easily relate the information they learn in a broader context (Hasna, 2022).

Based on data obtained from the researcher's findings regarding the affective evaluation of Cycle I, it can be confirmed that most of the 25 students involved in assessing student influence during the learning process using picture and drawing models remained in the adequate category. The evaluation results of students' affective scores in cycle I were then examined. The educator begins the session with a prayer, proceeds to attend, assesses the student's attire, and explains the learning objectives and competencies the learner is expected to achieve. In addition, educators introduce instructional material, illustrate relevant activities through pictures, and engage students in the cognitive task of arranging pictures in a coherent sequence. Next, the educator encourages discussion about the reasons behind the order of the images, thereby starting the process of providing concepts or material that aligns with the targeted competency. A conclusive summary is provided, followed by a question and answer session between students and educators to measure achievement of competency indicators and basic skills. Finally, students and educators collectively reflect on the material covered before praying based on their respective religious beliefs. After that, educators give formative assessment questions to students.

Observers carry out observation activities while implementing teaching and learning in cycle 2. This activity is carried out while the researcher is involved in the teaching and learning. The scope of observations by Observers includes supervising teacher learning management, as well as teacher and student activities during the learning process. At the end of each teaching and learning session, students assess the researcher's effectiveness in facilitating the learning process. Furthermore, at the end of the teaching and learning process, students undergo the first formative tests to evaluate their success in the activities. The implementation of teaching and learning activities has produced valuable insights. Findings indicate that teachers tend to utilize less time during instruction, lack depth in communicating learning objectives, and struggle to

build a conducive classroom environment conducive to student engagement. The Picture and Picture model facilitates interesting images or visualizations that can increase students' interest in learning. This interest can encourage students to be more active in taking lessons and participate more actively in learning activities. This result aligns with research by Ayuni & Adriyani (2022) that shows that images or visualizations used in the picture and picture model often attract students' attention more than text or oral explanations. Attractive and relevant visuals can arouse students' curiosity and make them more involved in learning.

The first cycle was the initial introduction of this method to students. Many students were still confused about how to apply this in their daily learning activities. Meanwhile, the second cycle is the result of the application carried out by researchers to analyze what happens to learning methods,

In this case, students are still learning, which focuses on how students think. The shortcomings in cognitive learning groups are always assuming that all students' memory is the same, not paying attention to how to explore knowledge by how students search for it. The Picture and Picture learning model is a learning model that uses pictures and is paired/sorted into a logical sequence. This learning model relies on images as a medium in the learning process. These pictures are the main factor in the learning process, while the shortcomings of the Picture and Picture learning model are that it takes up much time, and there are concerns that there will be chaos in the classroom. This result is in line with the opinion of Prihatini et al. (2022) that although the Picture and Picture learning model has many advantages, such as strengthening visual understanding and student involvement in learning, several disadvantages need to be considered, including the process of arranging the pictures in a logical sequence and ensuring all students understand each step can be time-consuming quite a lot. This condition can challenge teachers in planning and implementing learning activities with this model, especially in a busy curriculum. In addition, this model can assume that all students have a uniform understanding and memory of the information conveyed through images. However, each student has a different way of learning and remembering, such as visual, auditory, or kinesthetic. This model may not effectively accommodate these diverse learning needs.

Applying the Picture and Picture learning model in learning is linked to students' cognitive learning outcomes. The Picture and Picture learning model is a learning model that uses pictures and is paired/sorted into a logical sequence. This learning model relies on pictures as a medium in the learning process so that students can read one by one according to the instructions in the pictures given, concentrate more, and feel engrossed because the tasks given

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by the teacher are related to their daily games, namely playing with pictures. Students can more strongly remember the concepts or readings in the pictures. This result aligns with the opinion (Wahyuni & Huriyati, 2020) that the Picture and Picture learning model relies on using images as the main media in the learning process. In this context, this model can contribute significantly to improving students' cognitive learning outcomes, because the images used in this model help students visualize the concepts being studied in a more concrete and easy-to-digest way. This model helps people understand and remember information more effectively.

The research results can provide insight into the effectiveness of the Picture and Picture model in improving student understanding and learning outcomes. These implications can help develop more effective and appropriate learning strategies for student needs in the 21st-century educational context.

CONCLUSION

The consistency of student educational outcomes is demonstrated through the findings of this research. This study shows the beneficial influence of the Picture and Picture Learning Model on improving students' academic performance. There was a real increase in students' understanding of instructional material from Cycle I to Cycle II. Examination of the data reveals student involvement in the Citizenship Education learning process when using the Picture and Picture Learning Model. The main activities observed included actively listening to the teacher's explanations and engaging in discussions with peers or the teacher. Thus, it is clear that student engagement can be characterized as active. Regarding teacher involvement in the teaching process, they effectively implement the Picture and Picture Learning Model steps. Their actions involve guiding and monitoring students in various school tasks, such as understanding concepts, providing explanations, offering feedback, evaluating, and asking questions. The teacher's performance in this activity was very commendable.

REFERENCES

Anggrella, D. P., & Sudrajat, A. K. (2024). Development of an Integrated Project-Based Learning Module Based on Black Soybean Ethnoscience to Improve Students' Science Process Skills.

Jurnal Penelitian Pendidikan IPA, 10(6), 3038–3045. https://doi.org/10.29303/jppipa.v10i6.5855

Ayuni, R., & Adriyani, R. (2022). Pengaruh model pembelajaran picture and picture terhadap hasil belajar siswa di SMP negeri 02 kota bengkulu. Jurnal Multidisiplin Dehasen (MUDE), 1(3), 231-234. https://doi.org/10.37676/mude.v1i3.2517

- Brooks, S., Dobbins, K., Scott, J. J., Rawlinson, M., & Norman, R. I. (2014). Learning about learning outcomes: The student perspective. Teaching in Higher Education, 19(6), 721-733. https://doi.org/10.1080/13562517.2014.901964
- Cook, D., Feuz, K. D., & Krishnan, N. C. (2013). Transfer learning for activity recognition: A survey. Knowledge and information systems, 36, 537-556. https://link.springer.com/article/10.1007/s10115-013-0665-3
- Eitel, A., & Scheiter, K. (2015). Picture or text first? Explaining sequence effects when learning with pictures and text. Educational psychology review, 27, 153-180. https://link.springer.com/article/10.1007/s10648-014-9264-4
- Fujii, T. (2019). Designing and adapting tasks in lesson planning: A critical process of lesson study. Theory and Practice of Lesson Study in Mathematics: An International Perspective, 681-704. https://link.springer.com/chapter/10.1007/978-3-030-04031-4_33
- Halimah, N., & Adiyono, A. (2022). Unsur-unsur penting penilaian objek dalam evaluasi hasil belajar. EDUCATIONAL JOURNAL: General and Specific Research, 2(1), 160-167. https://adisampublisher.org/index.php/edu/article/view/84
- Hasna, L. (2022). Penerapan model pembelajaran picture and pictures untuk meningkatkan hasil belajar IPA siswa sekolah dasar (Doctoral dissertation, Universitas Pendidikan Indonesia). http://repository.upi.edu/id/eprint/78488
- Ibrohim, Sudrajat, A. K., & Saefi, M. (2021). Assessing Indonesian Teacher's Perspective on the Implementation of Distance Learning due to COVID-19 Based on Online Survey. Journal of Turkish Science Education, 18, 46–59. https://doi.org/10.36681/tused.2021.71
- Imtinan, A. N. V., Diniyyah, M., Sudrajat, A. K., Susilo, H., & Balqis. (2023). Application of digital mindmap through the process-oriented guided inquiry learning (POGIL) model to improve high school students' collaboration skills and biology concepts understandings during the online learning period. AIP Conference Proceedings, 2614(1), 20018. https://doi.org/10.1063/5.0126995
- Magdalena, I., Syaifulloh, A., & Salsabila, A. (2024). Asumsi dasar dan desain pembelajaran. Sindoro: Cendikia Pendidikan, 2(5), 41-50. https://ejournal.warunayama.org/index.php/sindorocendikiapendidikan/article/view/1721
- Munandar, A., Afifah, J., & Fitri, D. (2024, March). Cooperative learning types of pictures and pictures in increasing student learning activity. In Proceeding International Conference on Religion, Science and Education (Vol. 3, pp. 515-521). http://sunankalijaga.org/prosiding/index.php/icrse/article/view/1115
- Prihatini, A. S., Gustiawati, S. G., & Sutisna, S. (2022). Pengaruh penerapan model pembelajaran picture and picture terhadap hasil belajar siswa kelas ii pada mata pelajaran fiqih di mi alikhlas cicadas bogor. Koloni, 1(3), 393-402. https://koloni.or.id/index.php/koloni/article/view/180

- Putri, A. (2016). EFL teachers'understanding in developing lesson plan. Indonesian EFL Journal, 2(1), 1-11. https://doi.org/10.25134/ieflj.v2i1.632
- Rahayu, A., Nuryani, P., & Riyadi, A. R. (2019). Penerapan model pembelajaran savi untuk meningkatkan aktivitas belajar siswa. Jurnal Pendidikan Guru Sekolah Dasar, 4(2), 102-111. https://ejournal.upi.edu/index.php/jpgsd/article/view/20489
- Savitri, S., Araina, E., & Haryono, A. (2019). Lesson study (LS) untuk meningkatkan kompetensi profesional guru dan kualitas pembelajaran di kelas. Jurnal Pendidikan, 20(2), 87-93.
- Seknun, M. F. (2013). Strategi pembelajaran. BIOSEL (Biology Science and Education): Jurnal Penelitian Science dan Pendidikan, 2(2), 120-128. https://jurnal.iainambon.ac.id/index.php/BS/article/view/376
- Sriyati, S., & Si, M. (2010). Penelitian tindakan kelas (PTK). Bandung: Pustaka Book. http://file.upi.edu/Direktori/FPMIPA/JUR._PEND._BIOLOGI/196409281989012-SITI_SRIYATI/Kumpulan_artikel_5/PTK.pdf
- Suarim, B., & Neviyarni, N. (2021). Hakikat belajar konsep pada peserta didik. Edukatif: Jurnal Ilmu Pendidikan, 3{1), 75-83. https://edukatif.org/index.php/edukatif/article/view/214/0
- Sudrajat, A. K., Andriningrum, H., Supartinah, S., Anggrella, D. P., Supartinah, N. A., & Anggrella, D. P. (2023). Accelerating pre-service elementary school teacher students' problem-solving skills through online case study discussion. International Journal of Innovation and Learning, 34(4), 398–413. https://doi.org/10.1504/IJIL.2023.134749
- Sudrajat, A. K., Saptasari, M., & Tenzer, A. (2018). Pengembangan Asesmen Formatif pada Materi Sistem Sirkulasi untuk Mengukur Kemampuan Berpikir Kritis Siswa Kelas XI SMA Laboratorium UM. Jurnal Penelitian Pendidikan, 18(3), 243–251.
- Sudrajat, A. K., Sari, D. A. W., & Anggrella, D. P. (2023). Hubungan antara Faktor Eksternal dan Internal selama Pembelajaran Daring pada Siswa Sekolah Menengah. SAP (Susunan Artikel Pendidikan), 8(1), 121. https://doi.org/10.30998/sap.v8i1.17089
- Sudrajat, A. K., Susilo, H., & Rohman, F. (2020). Student perspective on the importance of developing critical thinking and collaboration skills for prospective teacher students. AIP Conference Proceedings, 2215. https://doi.org/10.1063/5.0000558
- Susanto, S. (2020). Efektifitas small group discussion dengan model problem based learning dalam pembelajaran di masa pandemi Covid-19. Jurnal Pendidikan Modern, 6(1), 55-60. https://doi.org/10.37471/jpm.v6i1.125
- Susilo, H., & Sudrajat, A. K. (2020). STEM Learning and its Barrier in Schools: The Case of Biology Teachers in Malang City. Journal of Physics: Conference Series, 1563(1). https://doi.org/10.1088/1742-6596/1563/1/012042

ISSN: 2775-3182 (E) ISSN: 2775-3190 (P)

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- Susilo, H., & Sudrajat, A. K. (2021). Quality improvement of guiding online-first field practice training through use of reflective essay and lesson study. Journal of Physics: Conference Series, 1760, 012054. https://doi.org/10.1088/1742-6596/1760/1/012054
- Susilo, H., Kristiani, N., & Sudrajat, A. K. (2020). Development of 21st century skills at the senior high school: Teachers' perspective. AIP Conference Proceedings, 2215(1), 30018. https://doi.org/10.1063/5.0000559
- Wahyuni, L., & Huriyati, N. (2020). Pengaruh model pembelajaran picture and picture terhadap hasil belajar matematika siswa pada pokok bahasan teorema phytagoras. Tarbawi: Jurnal Ilmu Pendidikan, 16(2), 154-159. https://doi.org/10.32939/tarbawi.v16i2.678
- Widayanti, R., & Nur'aini, K. D. (2020). Penerapan model pembelajaran problem based learning untuk meningkatkan prestasi belajar matematika dan aktivitas siswa. Mathema: Jurnal Pendidikan Matematika, 2(1), 12-23. https://doi.org/10.33365/jm.v2i1.480
- Yuliastanti, D., & Zuhdi, U. (2014). Penerapan model pembelajaran picture and picture untuk meningkat hasil belajar pada pembelajaran tematik di sekolah dasar. Jurnal Penelitian Pendidikan Guru Sekolah Dasar, 2(2), 1-10. https://core.ac.uk/download/pdf/230630628.pdf
- Zulfadli, Z., Mardhatillah, M., & Kistian, A. (2020). The effect of picture and picture learning models on elementary school student learning outcomes. Jurnal Ilmiah Teunuleh, 1(2), 69-79. https://doi.org/10.51612/teunuleh.v1i2.26