

# The Influence of Guided Inquiry Learning Models on Procedural Learning Outcomes of Junior High School Students

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## Abstract

Learning outcomes in the procedural field of study are very much needed in learning because students are often confused in digesting the procedures explained, especially in complex science material. The aim of this research is to determine whether or not there is an influence of the guided inquiry learning model on the procedural learning outcomes of class VIII students at SMP Negeri 32 Surabaya. The material used by researchers in this research is the human circulatory system. This research is classified as quasi-experimental research using quantitative methods with a posttest control group design research design. The number of students in this study was 60 students who were divided into 2 groups. The average score for the experimental class was 84.70 and the control class was 76.77. Based on these results, after carrying out the Independent Sample t Test, it can be concluded that the results of this research indicate that there is an influence of the guided inquiry model on the procedural learning outcomes of class VIII students at SMP Negeri 32 Surabaya. Procedural learning outcomes can be improved with the guided inquiry learning model.

**Keywords:** Procedural Learning Outcomes; Guided Inquiry Model; Bloodstream system

## 1. Introduction

Learning according to Gagne and Briggs (1979) is a structure used to support students' learning process through a sequence of events arranged in such a way as to influence and facilitate the learning process. In reality, the message that teachers want to convey to their students in learning is sometimes not conveyed well because of the weak communication system between the two parties (Sixtya W.A, 2017). Teachers have not found the optimal method for conveying messages efficiently to students so that learning material can be conveyed clearly. If communication between students and teachers is hampered, communication and collaboration will not run smoothly.

According to Sherly et al (2020), the independent curriculum is a curriculum that gives schools, teachers and students the freedom to innovate freely, learn independently and be creative. A learning atmosphere is created without demanding that you achieve minimum graduation standards by emphasizing a quality learning process to produce quality students who are ready to face global challenges. The teacher's main role is to create fun learning through interesting learning models (Febrian R, et al, 2022). Natural Science subjects are related to the exploration of phenomena in nature. Science is not only about mastering information in the form of principles, concepts and facts but also a process of discovery (Af'idayani et al, 2018). Science becomes a vehicle for students to explore themselves and their surrounding environment, as well as an opportunity for further development for application

in everyday life (Mulyasa, 2010). Results of the PISA survey which is overseen by the OECD as a study to evaluate the education system, especially scientific literacy. Based on data from PISA 2018, Indonesia's scientific literacy is ranked 74th out of 79 countries. These results are relatively low compared to other countries therefore there is a need for improvements in the education sector.

The research was conducted at SMP Negeri 32 Surabaya because the quality of the school is in the middle, but there are several things that need to be improved in terms of facilities. The teachers who teach there have sufficient qualifications as demonstrated by the implementation of various routine teacher activities such as MGMP Surabaya, Teacher Mobilization, and so on. Apart from that, in the selection of female students, the highest percentage uses a zoning system (students whose homes are closer to the school have a greater chance of being accepted) so that most of the female students at the school live close to the school.

Based on observations made by researchers, teaching and learning activities at SMP Negeri 32 Surabaya showed that the science learning outcomes of students at SMP Negeri 32 Surabaya were still not optimal. Meanwhile, based on interviews conducted by researchers with students who obtained results below the KKM in one class, the students admitted that they were still confused about procedural questions. The type of content in the procedural field of study is very much needed in the learning process so that students can understand and even master the material provided by the teacher so as to support optimal learning outcomes. This is supported by research by Khamidah L (2017), which found that many students did not understand the correct procedures for solving mathematics problems. This can be seen from the behavior of dependence on help in solving problems. The material on the human circulatory system requires a learning model that is able to create a communicative and student-oriented learning atmosphere (Mu'arifah U, 2021). Degeng (1997) states that the learning process in the procedural content type is carried out in a coherent manner so that material cannot be skipped or chosen during the teaching process. Teachers have implemented various methods through the use of many models in learning activities using the independent curriculum. However, it turns out that many students still do not understand science material, so there is a need for an inquiry learning model.

The inquiry learning model was pioneered by Richard Suchman in 1962 (Joyce and Well, 2009). This model is defined as the process of finding one's own solution to a problem based on the results of observations and research (Fahyuni E.F & Nurdyansyah, 2016). Organizing the learning environment and providing sufficient direction to ensure that the learning stages need to be taken into account. Based on the problems at SMP Negeri 32 Surabaya because student learning outcomes are low so it is not enough to apply the inquiry learning model alone. Therefore, a guided inquiry model is used because if you only use the inquiry model, the output will not be optimal.

Previous research that became the researcher's guide was research by Mulyasari Z.I (2022) regarding the influence of the Flipped Classroom model on vocational school students' procedural programming learning outcomes. The results are learning activities using models *flipped classroom* effective enough. This effectiveness can be seen from the increase in procedural learning outcomes for students in the Basic Programming subject of the Computer and Network Engineering skills program at SMK Negeri 3 Malang. Second, in research by Afianti, N (2022) regarding improving procedural learning outcomes through *Microsoft*

*Mathematics* stated that the escalation of students' procedural learning outcomes through the use of applications *Microsoft Mathematics* compared to direct learning. From these two studies, researchers were guided by the guided inquiry model and students' procedural learning outcomes. As for research conducted by Degeng & Degeng (2016), the results of the research were that there were no differences in procedural learning outcomes between the groups of students who applied *learner control* with *design control*.

The differences between this research and previous research include: 1) the guided inquiry learning model used by researchers was rarely used by previous researchers to examine the effect of this model on procedural learning outcomes. 2) Research on procedural learning outcomes is rarely carried out by previous researchers, mostly just learning outcomes. 3) Most previous studies use *pre-test & post-test* whereas in this study only used *post-test*. Based on the explanation of the problem above, the researcher decided to use a guided inquiry learning model. The aim is to see whether or not there is an influence of this learning model on the procedural learning outcomes of junior high school students.

## 2. Method

This type of research approach is quantitative with research methodology *like an experiment type posttest only control group design* (Sugiyono, 2017). Subjects in this study were taken randomly. Class VIII C as the control class and class VIII D as the experimental class both have 30 students. A total of 60 students are taking the odd semester of the 2023/2024 academic year. The experimental class uses the model *Guided Inquiry Learning*, while in the control class using a model *Problem Based Learning*.

The first step in this research was to conduct observations and interviews with teachers and students at school. The second stage is to create and develop a procedural study content type test instrument to determine the procedural learning outcomes of class VIII students at SMP Negeri 32 Surabaya. The third stage is to trial the test instrument through validity and reliability testing. Class 8E was chosen by the researcher as this trial class because it is outside the research class. This third stage is included in the research data collection technique. The fourth stage is to test the validity and reliability of the trial test results. The fifth stage is implementing the learning model in the experimental class and control class for around 6 meetings. The final meeting held a question and answer learning reflection on the material from the five previous meetings for student recall and understanding. The sixth stage as the final stage contains analysis and interpretation of data.

Research data was taken from students' procedural content type tests as a benchmark for students' procedural learning outcomes. Normality and homogeneity tests were carried out first before testing the hypothesis to determine the results of this research. Furthermore Hypothesis testing is carried out *Independent Samples t Test* to compare the treatment results of the experimental class and the control class.

## 3. Results and Discussion

### 3.1 Result

Validity tests and reliability tests were carried out first on the procedural learning outcomes instruments. Based on these two tests, the results obtained were from 12 questions *essay*, the number of valid and reliable questions is 9 questions. Before the hypothesis test is

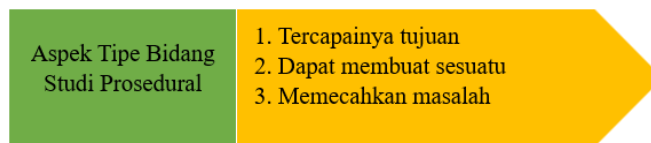
carried out, a prerequisite test is carried out. Based on the results of the normality and homogeneity test, the learning outcomes data for the two classes are normal and homogeneous. The equality of these variances is a requirement in carrying out the test *independent sample t-test*. Based on descriptive data, it is known that the average score for the control class is 76.77 and the experimental class is 84.70.

**Table 1. Test *Independent Sample T Test***

		Say.	t	Sig.(2-tailed)	Mean Difference
Experimental and control classes	Equal variances assumed	0,425	4,654	0,000	7,933

The results of the hypothesis test show the Sig value. (2-tailed) of  $0.000 < 0.05$ . Therefore, it can be concluded from these results that there are differences in procedural learning outcomes in classes that use the guided inquiry learning model and those that do not apply guided inquiry. This difference is significant, more precisely at 7.933.

### 3.2 Discussion



**Chart 1. Aspects of Content Types in the Field of Procedural Studies According to Reigeluth and Merrill (1979)**

The content type in the procedural field of study according to Anderson & Krathwohl (2010) is knowledge about how to do something such as techniques, methods, algorithm knowledge, and skills. Another term for this type of material content is a series of steps or procedures. According to Reigeluth and Merrill (1979), aspects of procedural content types include: 1) achieving goals. The steps that students go through during learning are to achieve the expected learning goals. 2) Can make something: after students go through several steps, new knowledge and skills will emerge that can be developed further in the future.

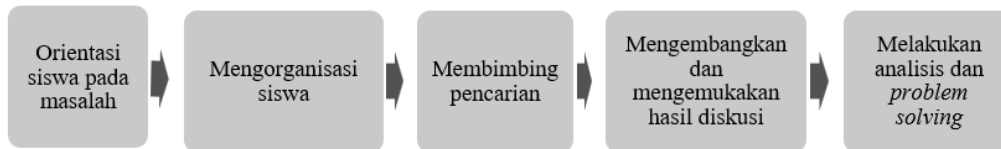
3) Solving problems: the problem solving process needs to be practiced. This exercise can involve guiding students with various questions that lead students to discover new knowledge.



**Chart 2. Experiment Class Syntax (*Guided Inquiry Learning*) According to Sanjaya (2016)**

The steps for implementing the learning model in the experimental class include: 1) asking questions: the teacher presents problems in order to arouse curiosity so that students' activeness in asking questions increases. In this initial step, questions and answers between students and teachers must be arranged so that the teacher's answers to students' questions

are limited to "yes" or "no" answers. Open-ended questions must be avoided and students are prohibited from asking the teacher to explain the problem. Therefore, students must formulate their questions to find their own knowledge in order to find solutions. 2) Students propose a hypothesis: after determining what questions must be answered, students make temporary answers first without the help of textbooks or learning media. 3) Collecting hypotheses: there may be more than one hypothesis or temporary answer. Some groups will collect as many answers as possible from textbooks and the internet. 4) Data analysis: after the answers have been collected, verification will be carried out to check the correctness of the answers. 5) Draw conclusions; 6) Reporting results: through presentations in class.



**Chart 3. Control Class Syntax (*Problem Based Learning*) According to Sani (2014)**

The steps for implementing the learning model in the control class include: 1) student orientation to problems: the teacher directs students to solve problems in groups that students can find on LKPD/reading materials. Students will observe and understand the problems presented by the teacher. 2) The teacher organizes students: this is done so that each student does their own job to solve the problem. 3) Guiding the search: this means students search for data to use as material for group discussions. The teacher's task in this step is to monitor student involvement in data collection. 4) Develop and present the results of the discussion: each group carries out a discussion to find a solution and the results will be presented in front of the class. The teacher monitors discussion activities and makes reports. 5) Carry out analysis and problem solving: each group presents the results of their activities and then continues to draw conclusions from input from other groups and the teacher.

According to Wilson in Trowbridge (1990) the inquiry model is a teaching process model based on learning and behavioral theories. The guided inquiry learning model involves students to design investigations and formulate their own procedures. The existence of procedural improvements can be seen from the way students formulate conclusions regarding the assignments given. After students have gone through learning activities applying the guided inquiry model in groups, students will write down the conclusions they have obtained for that day's learning. The teacher and students will have a discussion at the end to find the right answer to the problem. Students can also give *feedback* to the teacher's answer. Problem solving *essay* The human circulatory system that the students have worked on can be seen from the students' answers as well as observations of the increase in the type of content in the procedural field of study. Make it clearer about the structure of the sentences and key words in the answers written by the students. Students can ask questions from a situation according to their understanding. Then write down temporary answers to these questions and collect various temporary answers. After that, start analyzing the data by sorting and selecting appropriate and credible information. Sources of information are not only from teachers, but also from books, the internet, and so on. Procedural improvements can also be seen from students' ability to make reports. At several meetings in this research, students were invited to carry out simple experiments such as checking human heart rate through pulse. Students' procedural understanding is trained through several written steps/procedures. Then students

make experimental reports in groups by filling in the report table. This is in line with aspects of the content type in the procedural field of study, namely achieving goals, being able to make things, and solving problems (Reigeluth & Merrill, 1979). To solve a question or problem on a test, all students must first complete the learning process step by step to get a good type of procedural content.

The objectives of the guided inquiry model (Gulo, 2008) are as follows: 1) systematic directed activities according to learning objectives; 2) Students are fully involved in the learning process; and 3) Students' self-confidence in various things found increases. The application of the learning process using the guided inquiry model was carried out to test the validity of the guided inquiry model on the type of content in students' procedural fields of study. This guided inquiry learning model can increase students' freedom to solve problems in their own way with the help of teacher guidance. The first finding obtained based on the results of learning observations from the results of group work on the LKPD was that students from the experimental class included more detailed answers on the LKPD than students from the control class. The level of activity and focus of students in the experimental class was also higher when they received treatment using the guided inquiry model. In the control class, students only write down the important points so that their answers are more concise. The second finding from the results of experimental observations was that students from the experimental class showed a quicker understanding of an experiment that had been prepared, especially an experiment to determine the human heart rate, proven by the steps carried out according to the provisions. This was concluded by researchers from observations made during classroom learning activities. The third finding from the test results was that students from the control class had some difficulty in concluding answers from an experiment compared to students from the experimental class so it took quite a long time. At the first meeting, students from the experimental and control classes took quite a long time to write answers to the problems discussed. However, the more meetings held by both students from the experimental and control classes, the more they understood the procedures for participating in learning using these two learning models.

The guided inquiry learning stage increases students' opportunities to develop ideas regarding the problems presented. This can improve students' thinking processes according to procedures for discovering the concepts being studied. In implementing this guided inquiry model, the teacher guides students in carrying out activities by asking initial questions and directing students to discuss. The teacher's active role lies in the ability to determine the problem and the stages of the solution. Through this guided inquiry approach, student learning focuses on instructions and guidance from the teacher until students can understand science learning concepts. Students are given assignments to complete through group formation in order to find solutions and can draw conclusions independently. According to Puspitasari D (2019), careful planning is needed that is prepared jointly between teachers and students in the form of questions that focus on finding solutions. Student activities take the form of discussions and expressing opinions with the help of leading questions from the teacher. These questions aim to direct students to understand and be able to discover the concepts of the material being studied. These various questions will guide students to solve problems, prepare temporary answers, collect data, analyze data and draw conclusions. Guidance is provided by the teacher until students can solve problems independently.

The results of the research stating that this influence is in accordance with previous research by Darneli T, et al with the finding that there is an influence of the guided inquiry learning model on the factual, conceptual and procedural knowledge of class V students. Meanwhile, research by Rika R (2020) states that there is a difference students' mathematical procedural knowledge after implementing the STAD model compared to those given teaching materials. Other research conducted by Harisa (2022) found that the abilities of class VIII students who used the TPACK approach on pressure material and its implementation in daily life were in the medium and high categories.

Another research was conducted by Fang, Su-Chi (2016) with the aim of developing a computer-based inquiry curriculum and investigating how this curriculum influences students' science learning. The results of this research are that the web-based learning environment combined with the guided inquiry model influences the type of content in students' procedural study areas. In the discussion section contained in the article, the findings show that the curriculum helps build integrated scientific knowledge significantly thereby increasing students' conceptual knowledge and inquiry abilities in the context of 6 scientific topics. However, students do not appear to be able to transfer what they have learned about conceptual knowledge to different settings. Based on path analysis, it is known that students' integrated knowledge construction is related to previous conceptual knowledge and inquiry abilities developed during class. Based on the guidelines for these three studies, the results are relevant to the phenomena and findings in research conducted by researchers who state that there is an influence of the use of the guided inquiry model on the procedural learning outcomes of junior high school students.

#### 4. Conclusion

Students can be independent and actively participate in the learning process through group activities using the guided inquiry learning model. In this research, it is proven that procedural learning outcomes can be improved with a guided inquiry learning model for class VIII students at SMP Negeri 32 Surabaya on the material of the human circulatory system. The limitations of the type of content of students' procedural material on the human circulatory system material, so that further research can be carried out by examining other topics and materials. Apart from that, it is hoped that research on guided inquiry learning models can be developed over a longer period of time.

#### References

- Abdullah, Sani Ridwan. (2014). *Pembelajaran Saintifik untuk Kurikulum 2013*. Jakarta: Bumi Aksara
- Abdurrozak, R., & Jayadinata, A. K. (2016). Pengaruh Model Problem Based Learning Terhadap Kemampuan Berpikir Kreatif Siswa. *Pengaruh Model Problem Based Learning Terhadap Kemampuan Berpikir Kreatif Siswa. Jurnal Pena Ilmiah*, 1(1), 871-880.
- Afianti, N., Sugilar, H., & Susilawati, W. (2022). Peningkatan Kemampuan Kelancaran Prosedural Matematika Siswa melalui Microsoft Mathematics. *Al-Khwarizmi: Jurnal Pendidikan Matematika dan Ilmu Pengetahuan Alam*. 10(2), 85-94.
- Af'idayani, N., Setiadi, I., & Fahmi, F. (2018). The effect of inquiry model on science process skills and learning outcomes. *European Journal of Education Studies*, 4(12), 180-181.
- Anderson, L.W. & Krathwohl, D.R. (2010). *Kerangka Landasan untuk Pembelajaran, Pengajaran, dan Asesmen*. Yogyakarta: Pustaka Pelajar
- Andreas Schleicher. (2019). PISA 2018 Insight and Interpretations. In *OECD*.

- Darneli, T., Koto, I., & Susanta, A. (2023). Pengaruh Model Inkuiri Terbimbing Berbantuan Video Youtube Terhadap Pengetahuan Faktual, Konseptual, dan Prosedural IPA Siswa Kelas V. *Jurnal Pembelajaran Dan Pengajaran Pendidikan Dasar*, 6(1), 142–148.
- Deborah Loewenberg. (2003). *Mathematical Proficiency for All Students: Toward a Strategic Research and Development Program in Mathematics Education*. Rand Corporation.
- Degeng, M. D. K., Setyosari, P., Degeng, I. N. S., & Kuswandi, D. (2017). Pengaruh Learning Control dalam Pembelajaran Menggunakan Media Web terhadap Hasil Belajar Pengetahuan Prosedural. *Jurnal Pendidikan dan Pembelajaran (JPP)*, 23(2), 90–95.
- Djagom, D., Kuswandi, D., & Praherdhiono, H. (2023). Pengaruh Blended Learning Enriched Virtual Model Terhadap Hasil Belajar Materi Konflik Sosial Di SMA. JKTP: *Jurnal Kajian Teknologi Pendidikan*, 6(3), 143.
- Fang, S. C., Hsu, Y. S., Chang, H. Y., Chang, W. H., Wu, H. K., & Chen, C. M. (2016). Investigating the effects of structured and guided inquiry on students' development of conceptual knowledge and inquiry abilities: a case study in Taiwan. *International Journal of Science Education*, 38(12), 1945–1971.
- Febriyani, I., & Susilawati. (2022). *Keterampilan Proses Sains Peserta Didik SMP*. 01(01), 27–35.
- Gagne, Robert M & Briggs, Leslie J. (1979). *Principles Of Instructional Design (2nd Edition)*. New York : Holt, Rinehart and Winston.
- Ghozali, Imam. (2018). *Aplikasi Analisis Multivariate dengan Program IBM SPSS 25*. Badan Penerbit Universitas Diponegoro: Semarang
- Gunantara et al., (2014). Penerapan Model Pembelajaran Problem Based Learning Untuk Meningkatkan Kemampuan Pemecahan Masalah Matematika Siswa Kelas IV. *Jurnal Mimbar PGSD Universitas Pendidikan Ganesha*, 2(1).
- Hadi, S. A., Susantini, E., & Agustini, R. (2018). *Training of students' critical thinking skills through the implementation of a modified free inquiry model*. Paper presented at Education International Conference (MISEIC), 9 September 2017, Surabaya, Indonesia, In *Journal of Physics: Conference Series* Vol. 947, No. 1, IOP Publishing.
- Harisa, Saenab, S., & Rusli, M. A. (2022). Penerapan Pendekatan Technological, Pedagogical, Content, Knowledge (TPACK) terhadap Kemampuan Prosedural IPA Siswa Kelas VIII SMP Telkom Makassar. *Jurnal Pendidikan Dan Pembelajaran Sains Indonesia (JPPSI)*, 5(2), 128–134.
- Hutahaean, J., & Siagian, H. D. (2016). Pengaruh Model Pembelajaran Inkuiri Terbimbing (*Guided Inquiry*) Terhadap Hasil Belajar Siswa Pada Materi Listrik Dinamis Di Kelas X Semester. *Jurnal Ikatan Alumni Fisika Universitas Negeri Medan*. 2(3) ISSN: 2461-1247, 31-35.
- Joyce, B & Weil. (2009). *Model-model Pengajaran. Edisi 8. Terjemahan A. Fuwaid & A. Mirza*. Yogyakarta: Pustaka Pelajar.
- Khamid, L. (2017). Pemahaman Konseptual dan Pengetahuan Prosedural Siswa Kelas VIII dalam Penyelesaian Masalah Matematika Pada Materi Sistem Persamaan Linear Dua Variabel di SMPN 7 Kediri. *Simki-Techsain*, 01(08), 1–10.
- Martin, M. O., Mullis, I. V. S., & Foy, P. (2007). TIMSS 2007 International Science Report. In *Science*.
- Mu'arifah, U., & Abbas, M. L. H. (2021). Pengaruh Strategi Pembelajaran Berorientasi Aktivitas Siswa terhadap Kemampuan Berpikir Kritis dan Hasil Belajar Siswa. *Jurnal Riset Dan Inovasi Pembelajaran*, 8(1), 1–7.
- Mulyasa, E. (2010). *Kurikulum Tingkat Satuan Pendidikan*. Bandung: Remaja Rosdakarya.
- Mulyasari, Z. I., Herlambang, A. D., & Afirianto, T. (2022) Pengaruh Pembelajaran Flipped classrom terhadap Hasil Belajar Prosedural pada Konteks Mata Pelajaran Pemrograman Dasar Program Keahlian Teknik Komputer dan Jaringan di SMK Negeri 3 Malang. *Jurnal Pengembangan Teknologi Informasi Dan Ilmu Komputer*. 6(11), 5313–5319.
- Nurdyansyah, N., & Fahyuni, E. F. (2016). *Inovasi model pembelajaran sesuai kurikulum 2013*. Sidoarjo: Nizamia Learning Center.
- Puspitasari, D. R., Mustaji, & Rusmawati, R. D. (2019). Model Pembelajaran Inkuiri Terbimbing Berpengaruh Terhadap Pemahaman dan Penemuan Konsep dalam Pembelajaran PPKn. *Jurnal Ilmiah Pendidikan dan Pembelajaran*. 3(1), 96–107.
- Reigeluth, C.M. dan Merrill, M.D., (1979). Classes of Instructional Variables. *Educational Technology*, 19(3), 5-24.

- Reigeluth, C.M. dan Stein, FS., (1983). The Elaboration Theory of Instruction. Dalam C.M. Reigeluth (Ed). Instructional-Design Theories and Models: An overview of their current status. Hillsdale, N.J.: Lawrence Erlbaum Associates, 335-381.
- Riani, R., Sarassanti, Y., & Sukardi, S. (2020). Penerapan Model Pembelajaran Kooperatif Tipe Student Team Achievement Divisions Terhadap Pengetahuan Prosedural Pada Materi Bangun Datar. *J-PiMat : Jurnal Pendidikan Matematika*, 2(1), 150-157.
- Rina Febrian, Muhtadin, M. H. (2022). Implementasi Metode Pembelajaran Inkuiri Dalam Merdeka Belajar Untuk Meningkatkan Prestasi Belajar Siswa. Paper presented at Islamic Religion Education Conference (IRECON). Gunung Djati Conference Series, 10, 185-194.
- Romadhoni, I., Mahardika, I. K., & Harijanto, A. (2017). Penerapan Model Pembelajaran Problem Based Learning (Pbl) Disertai Media Cd Interaktif Terhadap Hasil Belajar Dan Aktivitas Belajar Siswa Pada Pembelajaran Fisika Sma Di Kabupaten Bondowoso. *Jurnal Pembelajaran Fisika Universitas Jember*, 5(4), 329-336.
- Sanjaya, W. (2016). *Strategi Pembelajaran*. Jakarta: Prenada Media Group.
- Sherly Dharma, Edy. Sihombing, Humiras Betty. (2020). Merdeka Belajar: Kajian Literatur. UrbanGreen Conference Proceeding Library, 1, 183-190.
- Sixtya Widya. (2017). Hambatan Komunikasi Dalam Proses Belajar Mengajar Antara Guru dan Murid yang Berbeda Budaya di SMP Negeri 16 Sigi. *Jurnal Online Kinesik* (4)1, 132.
- Sugiyono. (2017). *Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif, R&D* (Cetakan ke-25). Bandung: CV Alfabeta.
- Trianto. (2007). *Model-model Pembelajaran Inovatif Berorientasi Konstruktivistik*. Jakarta: Prestasi Pustaka.