



# Similarity Report

## Metadata

Name of the organization

**Universitas Muhammadiyah Sidoarjo**

Title

**Vonitasari Amir\_Submit\_1**

Author(s)

Coordinator

**Adinda Rheyna Vonitasari & Mohammad Faizal Amir**






Organizational unit

**FPIP**

## Alerts

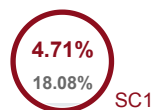
In this section, you can find information regarding text modifications that may aim at temper with the analysis results. Invisible to the person evaluating the content of the document on a printout or in a file, they influence the phrases compared during text analysis (by causing intended misspellings) to conceal borrowings as well as to falsify values in the Similarity Report. It should be assessed whether the modifications are intentional or not.

Please note that during auto translation editorial modifications may have been lost. To check for possible text manipulation attempts please see the Similarity report of original text.

Characters from another alphabet		0
Spreads		0
Micro spaces		0
Hidden characters		0
Paraphrases (SmartMarks)		46

## Record of similarities

SCs indicate the percentage of the number of words found in other texts compared to the total number of words in the analysed document. Please note that high coefficient values do not automatically mean plagiarism. The report must be analyzed by an authorized person.



**25**  
The phrase length for the SC 2

**4796**  
Length in words

**33605**  
Length in characters

## Active lists of similarities

This list of sources below contains sources from various databases. The color of the text indicates in which source it was found. These sources and Similarity Coefficient values do not reflect direct plagiarism. It is necessary to open each source, analyze the content and correctness of the source crediting.

### The 10 longest fragments

Color of the text

NO	TITLE OR SOURCE URL (DATABASE)	NUMBER OF IDENTICAL WORDS (FRAGMENTS)
1	The Effect of Process Oriented Guided Inquiry Learning (POGIL) Integrated Flipped Classroom on Problem Solving Ability and Self-Efficacy of High School Students on Thermochemistry Material Suyanta,Kurnia Lani Dwi;	40 0.83 %
2	<a href="https://researchvision.us/index.php/cognify/article/view/146">https://researchvision.us/index.php/cognify/article/view/146</a>	40 0.83 %

3	Pembelajaran Kaya Literasi dan Numerasi: Pendampingan Guru SD dalam Mendesain Pembelajaran Inovatif Elisantinia Endu , Lawe Yosefina Uge,Laksana Dek Ngurah Laba;	36 0.75 %
4	Integration of PJBL, STEAM, and Learning Tool Development in Improving Students' Critical Thinking Skills Sri Dwi Indahwati, Eko Hariyono, Fida Rachmadiarti;	35 0.73 %
5	<a href="https://jurnal.ulb.ac.id/index.php/eduscience/article/view/6560">https://jurnal.ulb.ac.id/index.php/eduscience/article/view/6560</a>	34 0.71 %
6	<a href="https://journal.unnes.ac.id/nju/index.php/jpii/article/view/30779">https://journal.unnes.ac.id/nju/index.php/jpii/article/view/30779</a>	33 0.69 %
7	The effect of problem based learning (PBL) model accompanied multirepresentation based LKPD on learning outcomes I Ketut Mahardika, Nur Ahmad,Fuji Tiasutik;	32 0.67 %
8	<a href="http://repository.upi.edu/83272/1/S_FIS_1802064_Title.pdf">http://repository.upi.edu/83272/1/S_FIS_1802064_Title.pdf</a>	32 0.67 %
9	<a href="http://repository.upi.edu/115972/1/T_IPA_2002052_Title.pdf">http://repository.upi.edu/115972/1/T_IPA_2002052_Title.pdf</a>	31 0.65 %
10	<a href="https://dinastipub.org/DIJDBM/article/view/1793">https://dinastipub.org/DIJDBM/article/view/1793</a>	30 0.63 %

from RefBooks database (7.40 %)



NO	TITLE	NUMBER OF IDENTICAL WORDS (FRAGMENTS)
<b>Source: Paperity</b>		
1	The Effect of Process Oriented Guided Inquiry Learning (POGIL) Integrated Flipped Classroom on Problem Solving Ability and Self-Efficacy of High School Students on Thermochemistry Material Suyanta,Kurnia Lani Dwi;	<b>75 (6) 1.56 %</b>
2	Pembelajaran Kaya Literasi dan Numerasi: Pendampingan Guru SD dalam Mendesain Pembelajaran Inovatif Elisantinia Endu , Lawe Yosefina Uge,Laksana Dek Ngurah Laba;	<b>36 (1) 0.75 %</b>
3	Integration of PJBL, STEAM, and Learning Tool Development in Improving Students' Critical Thinking Skills Sri Dwi Indahwati, Eko Hariyono, Fida Rachmadiarti;	<b>35 (1) 0.73 %</b>
4	The effect of problem based learning (PBL) model accompanied multirepresentation based LKPD on learning outcomes I Ketut Mahardika, Nur Ahmad,Fuji Tiasutik;	<b>32 (1) 0.67 %</b>
5	Pengaruh Media Kartu Kata Bergambar Terhadap Kemampuan Membaca Permulaan Siswa Kelas I SD Bau Intang, Nur A. Muafiah, Nadrah;	<b>30 (1) 0.63 %</b>
6	Science Process Skills as Learning Outcomes in Inquiry-Based Learning: A Literature Review Purtadi Sukisman, Eli Rohaeti, Suyanta Suyanta;	<b>27 (1) 0.56 %</b>
7	The Influence of Card Sort Active Learning Model on Learning Outcomes of PPKn Class V SDN 91 Palembang Disurya Ramanata,Fadilah Fadilah, Dedy Adrianus;	24 (3) 0.50 %
8	Meta-analysis: The effect of guided inquiry on students' critical thinking skills in biology learning Farnia Farnia, Mujuna Hatuala,Ridzal Dewi Asriani, Haswan Haswan;	19 (3) 0.40 %
9	Building Self-Efficacy in Physics Learning Using Scaffolds Mandala Arif Sapta,Raisal Abu Yazid, Sugiyo Rukiyati;	18 (1) 0.38 %
10	The Effect Of Using Kamishibai Through Interactive Strategy On Students Ability In Listening Narrative Text Puput Afrianti;	17 (3) 0.35 %

11	The Using Effect of Blended Learning on Students' Persistence and Learning Outcomes Salma Samputri, Suryani Hamidah;	11 (1) 0.23 %
12	Penerapan Model Inkuiri Terbimbing dalam Meningkatkan Kemampuan Berpikir Lancar Siswa pada Materi Asam Basa Rudibyani Ratu Betta, Nainggolan Yanna Kristina, Sunyono Sunyono;	8 (1) 0.17 %
13	Application of STEM-Integrated Guided Inquiry Model to Improve Science Process Skills of Junior High School Learners on Human Respiratory System Material Kusnadi, Lestari Alvyn Karina, Any Fitriani;	6 (1) 0.13 %

**Source: Paperity - abstrakty**

1	Pengaruh PBL dengan Scaffolding Prosedural terhadap Kemampuan Berpikir Tingkat Tinggi Ditinjau dari Kemampuan Tinggi dan Rendah Siswa Supriyono Koes Handayanto, Feny Puspitaningsih, Wartono Wartono;	17 (1) 0.35 %
---	---	---------------

from the home database (0.00 %)

NO	TITLE	NUMBER OF IDENTICAL WORDS (FRAGMENTS)
----	-------	---------------------------------------

from the Database Exchange Program (0.10 %)

NO	TITLE	NUMBER OF IDENTICAL WORDS (FRAGMENTS)
1	Kevin Kõiv_Uurimusliku õppe olemus – negatiivsed ja positiivsed aspektid.docx.pdf 2/15/2024 Estonian Academic Database (Estonian University)	5 (1) 0.10 %

from the Internet (10.57 %)

NO	SOURCE URL	NUMBER OF IDENTICAL WORDS (FRAGMENTS)
1	<a href="https://jurnal.ulb.ac.id/index.php/eduscience/article/view/6560">https://jurnal.ulb.ac.id/index.php/eduscience/article/view/6560</a>	43 (2) 0.90 %
2	<a href="https://researchvision.us/index.php/cognify/article/view/146">https://researchvision.us/index.php/cognify/article/view/146</a>	40 (1) 0.83 %
3	<a href="https://journal.unnes.ac.id/nju/index.php/jpii/article/view/30779">https://journal.unnes.ac.id/nju/index.php/jpii/article/view/30779</a>	33 (1) 0.69 %
4	<a href="https://www.journal.iel-education.org/index.php/ijocer/article/view/137">https://www.journal.iel-education.org/index.php/ijocer/article/view/137</a>	32 (2) 0.67 %
5	<a href="http://repository.upi.edu/83272/1/S_FIS_1802064_Title.pdf">http://repository.upi.edu/83272/1/S_FIS_1802064_Title.pdf</a>	32 (1) 0.67 %
6	<a href="http://repository.upi.edu/115972/1/T_IPA_2002052_Title.pdf">http://repository.upi.edu/115972/1/T_IPA_2002052_Title.pdf</a>	31 (1) 0.65 %
7	<a href="https://www.ejmste.com/article/combining-gpt-and-colab-as-learning-tools-for-students-to-explore-the-numerical-solutions-of-13905">https://www.ejmste.com/article/combining-gpt-and-colab-as-learning-tools-for-students-to-explore-the-numerical-solutions-of-13905</a>	31 (2) 0.65 %
8	<a href="https://dinastipub.org/DIJDBM/article/view/1793">https://dinastipub.org/DIJDBM/article/view/1793</a>	30 (1) 0.63 %
9	<a href="https://repository.upi.edu/79869/1/S_BIO_1801566_Title.pdf">https://repository.upi.edu/79869/1/S_BIO_1801566_Title.pdf</a>	26 (1) 0.54 %
10	<a href="https://www.businessperspectives.org/index.php/journals/problems-and-perspectives-in-management/issue-455/exploratory-and-confirmatory-factor-analysis-of-digital-entrepreneur-skills">https://www.businessperspectives.org/index.php/journals/problems-and-perspectives-in-management/issue-455/exploratory-and-confirmatory-factor-analysis-of-digital-entrepreneur-skills</a>	25 (1) 0.52 %
11	<a href="https://www.ejmste.com/article/lets-transform-a-systematic-literature-review-of-science-learning-in-covid-19-pandemic-era-12875">https://www.ejmste.com/article/lets-transform-a-systematic-literature-review-of-science-learning-in-covid-19-pandemic-era-12875</a>	24 (1) 0.50 %
12	<a href="https://ijphrd.com/scripts/IJPHRD%20June%202019.pdf">https://ijphrd.com/scripts/IJPHRD%20June%202019.pdf</a>	19 (3) 0.40 %
13	<a href="http://www.ijfnt.com/scripts/IJFMT_April-June%202020_DOI.pdf">http://www.ijfnt.com/scripts/IJFMT_April-June%202020_DOI.pdf</a>	19 (3) 0.40 %
14	<a href="https://files.eric.ed.gov/fulltext/EJ1270832.pdf">https://files.eric.ed.gov/fulltext/EJ1270832.pdf</a>	18 (1) 0.38 %

15	<a href="https://iopscience.iop.org/article/10.1088/1742-6596/1175/1/012165">https://iopscience.iop.org/article/10.1088/1742-6596/1175/1/012165</a>	17 (1) 0.35 %
16	<a href="https://repository.uinsaizu.ac.id/25297/1/NGAFIFURROHMAN%20ACC%20FIX.pdf">https://repository.uinsaizu.ac.id/25297/1/NGAFIFURROHMAN%20ACC%20FIX.pdf</a>	17 (1) 0.35 %
17	<a href="https://www.oecd.org/pisa/publications/PISA2018_CN_VNM.pdf">https://www.oecd.org/pisa/publications/PISA2018_CN_VNM.pdf</a>	16 (1) 0.33 %
18	<a href="https://sfl.education.springeropen.com/track/pdf/10.1186/s40862-020-00090-2.pdf">https://sfl.education.springeropen.com/track/pdf/10.1186/s40862-020-00090-2.pdf</a>	14 (2) 0.29 %
19	<a href="https://www.ejurnalskalakesehatan-poltekkesbjm.com/index.php/JSK/article/download/279/189/">https://www.ejurnalskalakesehatan-poltekkesbjm.com/index.php/JSK/article/download/279/189/</a>	12 (1) 0.25 %
20	<a href="https://files.eric.ed.gov/fulltext/EJ1319105.pdf">https://files.eric.ed.gov/fulltext/EJ1319105.pdf</a>	11 (1) 0.23 %
21	<a href="http://www.ijsrp.org/research-paper-0322/ijsrp-p12336.pdf">http://www.ijsrp.org/research-paper-0322/ijsrp-p12336.pdf</a>	10 (1) 0.21 %
22	<a href="https://jppipa.unram.ac.id/index.php/jppipa/article/view/7169">https://jppipa.unram.ac.id/index.php/jppipa/article/view/7169</a>	7 (1) 0.15 %

#### WWW pages omitted in analysis

<https://jurnal.fkip.unila.ac.id/index.php/jpmipa/index>

### List of accepted fragments

NO	CONTENTS	NUMBER OF IDENTICAL WORDS (FRAGMENTS)
	<b>The effect of problem based learning (PBL) model...</b>	<b>32 (0.67%)</b>
1	Anggraini, M, Huda, I, Safrida, S, Rahmatan, H, & Djufri, D. (2022). Pener...	32 (0.67%)
	<b>Pembelajaran Kaya Literasi dan Numerasi: Pendamp...</b>	<b>36 (0.75%)</b>
1	Bopo, G, Ngura, E. T, Fono, Y. M, & Laksana, D. n l (2023). Peningkatan kem...	36 (0.75%)
	<b><a href="https://researchvision.us/index.php/cognify/arti...">https://researchvision.us/index.php/cognify/arti...</a></b>	<b>40 (0.83%)</b>
1	Clemente, J, Kilag, O, k Ypon, A, Groenewald, E, Groenewald, C. A, & Ubay,...	40 (0.83%)
	<b><a href="http://repository.upi.edu/115972/1/T_IPA_2002052...">http://repository.upi.edu/115972/1/T_IPA_2002052...</a></b>	<b>31 (0.65%)</b>
1	Fitriansyah, R, Werdhiana, I. K, & Saehana, S. (2021). Pengaruh pendekatan...	31 (0.65%)
	<b><a href="https://journal.unnes.ac.id/nju/index.php/jpii/a...">https://journal.unnes.ac.id/nju/index.php/jpii/a...</a></b>	<b>33 (0.69%)</b>
1	Haidar, D. A, Yulianti, L, & Handayanto, S. K (2020). The effect of inquiry...	33 (0.69%)
	<b><a href="http://repository.upi.edu/83272/1/S_FIS_1802064_...">http://repository.upi.edu/83272/1/S_FIS_1802064_...</a></b>	<b>32 (0.67%)</b>
1	Husnaini, S. J, & Chen, S. (2019). Effects of guided inquiry virtual and p...	32 (0.67%)
	<b><a href="https://www.ejmste.com/article/combining-gpt-and...">https://www.ejmste.com/article/combining-gpt-and...</a></b>	<b>31 (0.65%)</b>
1	Jatisunda, M. G, Suciawati, V, & Nahdi, D. S. (2020). Discovery learning w...	26 (0.54%)
2	11(2), 351-370. <a href="https://doi.org/10.24042/ajpm.v11i2.6903">https://doi.org/10.24042/ajpm.v11i2.6903</a>	5 (0.10%)
	<b><a href="https://files.eric.ed.gov/fulltext/EJ1270832.pdf">https://files.eric.ed.gov/fulltext/EJ1270832.pdf</a></b>	<b>18 (0.38%)</b>
1	Katz, S. (2015). Enhancing self-efficacy of elementary school students to lear...	18 (0.38%)
	<b>The Effect of Process Oriented Guided Inquiry Le...</b>	<b>40 (0.83%)</b>
1	Kurnia, L. D. & Suyanta. (2024). The effect of process oriented guided inq...	40 (0.83%)
	<b><a href="https://repository.upi.edu/79869/1/S_BIO_1801566...">https://repository.upi.edu/79869/1/S_BIO_1801566...</a></b>	<b>26 (0.54%)</b>

1	Luzyawati, L. (2018). Analisis kemampuan berpikir kritis siswa sma materi alat...	26 (0.54%)
	<b><a href="https://jurnal.ulb.ac.id/index.php/eduscience/ar...">https://jurnal.ulb.ac.id/index.php/eduscience/ar...</a></b>	<b>43 (0.90%)</b>
1	Makmur, W., Susilo, H., & Indriwati, s e 2019). Implementation of guided i...	34 (0.71%)
2	effectiveness of guided inquiry learning model to improve students critical th...	9 (0.19%)
	<b><a href="https://repository.uinsaizu.ac.id/25297/1/NGAFIF...">https://repository.uinsaizu.ac.id/25297/1/NGAFIF...</a></b>	<b>17 (0.35%)</b>
1	Penerapan model pembelajaran guided inquiry dengan LKPD berbasis scaffolding u...	17 (0.35%)
	<b><a href="https://www.oecd.org/pisa/publications/PISA2018_...">https://www.oecd.org/pisa/publications/PISA2018_...</a></b>	<b>16 (0.33%)</b>
1	OECD. (2019). PISA 2018 Results (Volume III): What school life means for stude...	16 (0.33%)
	<b><a href="https://www.businessperspectives.org/index.php/j...">https://www.businessperspectives.org/index.php/j...</a></b>	<b>25 (0.52%)</b>
1	2), 272 292 capron Puozzo, i Audrin, C. (2021). Improving self-efficacy and cr...	25 (0.52%)
	<b>Pengaruh PBL dengan Scaffolding Prosedural terha...</b>	<b>17 (0.35%)</b>
1	Pengaruh PBL dengan scaffolding prosedural terhadap kemampuan berpikir tingkat...	17 (0.35%)
	<b>Science Process Skills as Learning Outcomes in I...</b>	<b>27 (0.56%)</b>
1	Rahayu, M., Asyhari, A., & Anjani, a v 2022). Scaffolding in guided inquir...	27 (0.56%)
	<b>Integration of PJBL, STEAM, and Learning Tool De...</b>	<b>35 (0.73%)</b>
1	Rusmansyah, R., Rahmah, s a Syahmani, S., Hamid, A., Isnawati, I., & Kusum...	35 (0.73%)
	<b><a href="https://www.ejmste.com/article/lets-transform-a-...">https://www.ejmste.com/article/lets-transform-a-...</a></b>	<b>24 (0.50%)</b>
1	Sotiriou, s a Lazoudis, A., & Bogner, f x 2020). Inquiry-based learning an...	24 (0.50%)
	<b><a href="https://www.journal.iel-education.org/index.php/...">https://www.journal.iel-education.org/index.php/...</a></b>	<b>27 (0.56%)</b>
1	Suryani, Y., Ningrum, a r Hidayah, N., & Dewi, n r 2021). The effectivenes...	27 (0.56%)
	<b>Building Self-Efficacy in Physics Learning Using...</b>	<b>18 (0.38%)</b>
1	sanabria. rodríguez Effect of a metacognitive scaffolding on self-efficacy, me...	18 (0.38%)
	<b><a href="https://dinastipub.org/DIJDBM/article/view/1793">https://dinastipub.org/DIJDBM/article/view/1793</a></b>	<b>30 (0.63%)</b>
1	Wale, B. D., & Bishaw, K. S. (2020). Effects of using inquiry-based learni...	30 (0.63%)
	<b>Penerapan Model Inkuiri Terbimbing dalam Meningk...</b>	<b>8 (0.17%)</b>
1	Penerapan model inkuiri terbimbing dalam meningkatkan efikasi diri	8 (0.17%)
	<b>Pengaruh Media Kartu Kata Bergambar Terhadap Kem... <input checked="" type="checkbox"/></b>	<b>30 (0.63%)</b>
	<b>Kevin Kõiv_Uurimusliku õppe olemus – negatiivsed... <input checked="" type="checkbox"/></b>	<b>5 (0.10%)</b>

Guided Inquiry with Scaffolding Towards Students' Self-Efficacy

Adinda Rheyna Vonitasari , Mohammad Faizal Amir\*  
Primary School Teacher Education Study Program, Universitas Muhammadiyah Sidoarjo, Indonesia

\*Corresponding author: faizal.amir@umsida.ac.id

Abstract: Students' self-efficacy towards mathematics is still low. High self-efficacy is an essential factor in supporting learning success. Guided inquiry elaborated with scaffolding techniques is thought to affect students' self-efficacy. Therefore, this study aims to identify the effect of guided inquiry with

scaffolding techniques on students' self-efficacy. The study design used was the posttest-only control group. In this study, data collection techniques were used using a questionnaire containing 20 questions to measure students' self-efficacy in facing and completing academic tasks. Study participants included fourth-grade students' who were drawn through purposive sampling. ANOVA test and post hoc analysis were used for data analysis. The data analysis showed differences in students' self-efficacy between the implementation of guided inquiry with scaffolding techniques, the implementation of guided inquiry without scaffolding techniques, and the implementation of conventional learning. It was concluded that guided inquiry implemented with scaffolding techniques can enhance students' self-efficacy in learning. This shows sufficient scaffolding during the implementation of guided inquiry. In addition, students received sufficient scaffolding in the exploration process, which resulted in students being more confident in understanding the material and completing tasks independently.

Keywords: Guided Inquiry learning; scaffolding techniques; self-efficacy

## 1. INTRODUCTION

Self-efficacy is one of the basic self-concepts in the teaching and learning process. Several experts have explained the need for self-efficacy among students. According to Wale and Bishaw (2020), self-efficacy provides students with confidence in organizing actions effectively to achieve the ultimate goal. In addition, Puozzo and Audrin (2021) state that self-efficacy makes students more precise in decision-making. Self-efficacy can also affect a person in facing the challenges they are facing (Rusmansyah et al., 2023). Self-efficacy can also influence the way a person thinks, feels, and acts when facing various challenges (Bandura, 1997). Primary students should have a high level of self-confidence. Self-efficacy can also be used to build self-confidence through social interaction and emotion regulation (OECD, 2019).

For primary students, self-efficacy is essential to support their learning development and success. Katz (2015) state that students with high self-efficacy tend to have stronger motivation in facing academic tasks and can also regulate their emotions in the face of difficulties. Students who have high self-efficacy in math skills will be more open to challenges in the subject, which in turn enhances academic achievement (Anggraini et al., 2022). Academic self-efficacy is based on Bandura's social cognitive theory, which suggests a reciprocal influence between personal, behavioral, and social or environmental factors (Schunk & DiBenedetto, 2022).

Students' self-efficacy is still not ideal, especially primary students. Many students still have low self-efficacy, which affects their learning achievement. This low self-confidence is the result of the wrong use of learning models that are still often used by teachers. Many teachers at this time still apply a teacher-centered learning system. It also has an impact on the self-efficacy of students (Luzyawati, 2018). In this learning, students are more likely to be listeners, so there is no mutual involvement between students and teachers (Prasanti et al., 2023). Therefore, their self-efficacy is not developed, because students are not appropriately included during the learning process.

Guided inquiry is an appropriate strategy a teacher uses to implement effective learning. Primary school education aims to provide students with basic skills to continue their education to the next level. Therefore, the implementation of learning in primary schools must be carried out optimally (Bopo et al., 2023). Previous research mentioned that guided inquiry can enhance students' self-efficacy. Inquiry-based learning is a learning model that emphasizes the process of critical thinking and analysis to seek and find an answer to a problem given (Haidar et al., 2020). Meanwhile, a study by Wibowo et al. (2015) stated that guided inquiry can enhance students' self-efficacy.

Guided inquiry alone is not enough to enhance self-efficacy. Teachers must also provide guidance using scaffolding techniques (Jatisunda et al., 2020). The scaffolding technique is one way that can be applied to overcome learning difficulties in students. Using this scaffolding technique can also correct the students' misunderstanding of concepts (Puspitaningsih & Handayanto, 2018). Scaffolding techniques also have several other advantages; among others, students can enhance their investigation and performance, avoid students from failure or misunderstanding, and bridge students' learning difficulties (Haidar et al., 2020). Five types of scaffolding techniques can be used: providing explanations, inviting students' participation, verifying and clarifying students' understanding, modeling desired behavior, and inviting students to contribute presentations (Bikmaz et al., 2010). In this inquiry learning, an educator should also give more freedom to students to collaborate during learning activities (Luce, 2024).

The existing studies have not integrated guided inquiry with scaffolding techniques on students' self-efficacy. Some studies on guided inquiry on self-efficacy include studies by Husnaini [and Chen \(2019\), the effect of guided inquiry](#) virtual and physical laboratories on scientific inquiry self-efficacy. [Guided inquiry learning model to enhance students' science literacy skills and self-efficacy](#) (Pitaloka et al., 2020). [Guided inquiry](#) in chemistry learning to enhance students' self-efficacy level (Luce, 2024). There is also a study by Kurnia and Suyanta (2024), which discusses [the effect of process-oriented guided inquiry](#) integrated with flipped classrooms on high school students' problem-solving ability and self-efficacy.

Several studies also discuss scaffolding techniques toward self-efficacy, including the discovery learning model with scaffolding techniques to enhance creative thinking and self-efficacy in students (Jatisunda et al., 2020). There is also a study by Vallejo et al. (2019) on the effect of metacognitive scaffolding on self-efficacy, metacognition, and student achievement. [The effectiveness of blended learning-based scaffolding strategies assisted by Google Classroom on learning outcomes and students' self-efficacy](#) (Suryani et al., 2021). Other studies discuss guided inquiry with scaffolding techniques, including implementing guided inquiry with scaffolding strategies to enhance students' critical thinking skills (Makmur et al., 2019). A study by Ningrum et al. (2021) discusses guided inquiry with scaffolding-based worksheets to train students' science process skills. Lastly, scaffolding in guided inquiry learning on the conceptual understanding of Physics students (Rahayu et al., 2022).

Hence, it is suspected that guided inquiry elaborated in depth with scaffolding techniques can affect students' self-efficacy. Existing studies have not examined guided inquiry with scaffolding techniques that are applied not separately to enhance students' self-efficacy. Meanwhile, according to Pitaloka et al. (2020), the stages of guided inquiry can enhance self-efficacy because students are guided to understand concepts, connect concepts with several scientific phenomena, and express their ideas during learning. Scaffolding is used to solve problems that arise during the learning process; with this, scaffolding has been proven to minimize students' cognitive load when learning, which can affect students' self-efficacy. Therefore, this study aims to identify the effect of guided inquiry with scaffolding techniques on students' self-efficacy.

## 2. METHOD

### Research Design and Participants

This study, which focuses on implementing inquiry learning with scaffolding techniques on self-efficacy owned by students, uses quantitative [research methods with the true experiment method](#). [The study design used is the posttest-only control group](#). This study has a control group and an experimental group. This study used three different classes in the same grade. At the beginning of the study, researchers gave special treatment in the form of inquiry learning with scaffolding techniques and inquiry learning without scaffolding techniques. In contrast, the control class researchers applied conventional learning. Furthermore, at the end of the study, the three classes were given a posttest in the form of the same questionnaire to determine the difference [between the experimental and control](#) classes. The participants in this study were primary students from Sekolah Dasar

Negeri Sugihwaras Sidoarjo at the fourth-grade level. The participants involved were 81 out of 119 who were selected using purposive sampling.

Procedure

Guided inquiry is implemented based on six learning phases (Sotiriou et al., 2020), including: i) Problem orientation. Teachers convey learning objectives, motivate students to learn, and present problems in the classroom. ii) Hypothesis design. Students are asked to make predictions related to the problem that has been presented. iii) Designing an experiment. Students are asked to design the steps that must be taken to solve the existing problems. iv) Conducting experiments. Students collect relevant information or data related to the problem that has been presented. v) Data analysis. Students analyze data to find patterns or relationships. vi) Make a conclusion. Students make conclusions that answer the initial problem or question.

Instrument

The instrument used in this study is a posttest **in the form of a** questionnaire. The questionnaire is used to measure the self-efficacy scale owned by students. The questionnaire used a Guttman scale. To measure the students' self-efficacy scale, the indicators used refer to the three **dimensions of self-efficacy, namely magnitude, generality, and strength** (Bandura, 1997), **as presented in Table 1**. The self-efficacy questionnaire consists of 20 questions by the subs-indicator. Meanwhile, the self-efficacy questionnaire is assessed using a Guttman scale shown in Table 2.

Table 1. Subs-indicator of Self-efficacy in Solving Math Problems

- No Subs-indicator
- 1 Confidence in students' skills in completing a particular task. Able to take the necessary actions to achieve success.
- 2 Confidence in the ability to overcome obstacles and the difficulty being faced.
- 3 Confidence in having a positive opinion of the task at hand.
- 4 Confidence in responding to situations and conditions in problem-solving with a positive attitude.
- 5 Confidence uses life experience as a step toward achieving success.
- 6 Confidence displays an attitude that shows that students are confident about the entire learning process.
- 7 Strong self-confidence in students' potential to complete tasks.
- 8 Self-confidence is in the form of a fighting spirit and not giving up easily when facing obstacles to problem-solving.
- 9 Confidence has a strong commitment to completing tasks well.

Table 2. Self-efficacy Test Scoring Rubric

Sub-indicator	Scale	Description
Confidence in students' skills to complete a particular task.	1	If students agree with the statement and their behavior aligns with it.
	2	If students disagree with the statement and their behavior does not match the statement.
Confidence in skills to overcome obstacles in the level of difficulty encountered.	1	If students agree with the statement and their behavior aligns with it.
	2	If students disagree with the statement and their behavior does not match the statement.
Confident in positive thinking about the task at hand.	1	If students agree with the statement and their behavior aligns with it.
	2	If students disagree with the statement and their behavior does not match the statement.
Confident in responding to situations and conditions in problem-solving with a positive attitude.	1	If students agree with the statement and their behavior aligns with it.
	2	If students disagree with the statement and their behavior does not match the statement.
Confidence to use life experiences as a step towards success.	1	If students agree with the statement and their behavior aligns with it.
	2	If students disagree with the statement and their behavior does not match the statement.
Self-confidence is an attitude that shows that students are confident in the entire learning process.	1	If students agree with the statement and their behavior aligns with it.
	2	If students disagree with the statement and their behavior does not match the statement.
Strong self-confidence in students' potential to complete tasks.	1	If students agree with the statement and their behavior aligns with it.
	2	If students disagree with the statement and their behavior does not match the statement.
Self-confidence in the form of a fighting spirit and not giving up easily when experiencing obstacles in problem-solving.	1	If students agree with the statement and their behavior aligns with it.
	2	If students disagree with the statement and their behavior does not match the statement.
Confidently in the form of a strong commitment to complete the task well.	1	If students agree with the statement and their behavior aligns with it.
	2	If students disagree with the statement and their behavior does not match the statement.

Data Analysis

Data analysis in this study is a quantitative inferential analysis with data processing techniques to test the validity of guided inquiry with scaffolding techniques on self-efficacy students. Testing the validity of this test using IBM SPSS Statistics 26. Data analysis conducted in this study is the post-test results in a questionnaire tested using the ANOVA test, which is continued with post-hoc analysis to determine differences in self-efficacy from each class.

3. RESULT AND DISCUSSION

This study determined the effectiveness of guided inquiry learning implementation with scaffolding techniques on students' self-efficacy. This study was measured from the self-efficacy questionnaire scores of the fourth-grade students. The posttest score in this questionnaire was used to measure students' self-efficacy after the treatment. A one-way ANOVA analysis was used to test whether the three classes have different characteristics based on the analysis of the three classes (two experimental and one control class). Table 3 provides information on a significant difference in the questionnaire results between the three classes.

Table 3. Self-Efficacy Scores of Experimental and Control Classes

	SS	df	MS	F	P
Inter-groups	144.245	2	72.123	17.804	<,001
Within-groups	315.977	78	4.051		

Total 460.222 80

Description

SS: Sum of Squares df: Degrees of Freedom MS: Mean Square F: F-Ratio P: P-value

Based on the results of the one-way ANOVA test in Table 3. The analysis was based on two statistical hypotheses (H1 and H2). Hypothesis one is that students' self-efficacy from both experimental and conventional classes is not significantly different or equal. Hypothesis two is that students' self-efficacy from both experimental and conventional classes is significantly different or not the same. It appears that the p-value <0.05 so that Ho is rejected and Ha is accepted, or it can be concluded that the self-efficacy of the two experimental and the control classes is significantly different or not the same. After that, the post hoc analysis was continued to determine the differences in the self-efficacy of each student in the two experimental classes and one control class in detail in Table 4.

Table 4. Results of Post Hoc Analysis

(i)	(j)	Mean Difference (i-j)	SE	p	Lower Bound	Upper Bound
Guided inquiry with scaffolding technique	Guided inquiry without scaffolding technique	.352	.453	.718	-.74	1.45
Conventional learning		3.041*	.589	<.001	1.60	4.48
Guided inquiry without scaffolding technique	Guided inquiry with scaffolding technique	-.352	.453	.718	-1.45	.74
Conventional learning		2.689*	.637	<.001	1.14	4.23
Conventional learning	Guided inquiry with scaffolding technique	-3.041	.589	<.001	-4.48	-1.60
Guided inquiry without scaffolding technique		-2.689*	.637	<.001	-4.23	-1.14

Table 4 shows a difference between guided inquiry implementation with scaffolding techniques and guided inquiry implementation without scaffolding techniques in students' self-efficacy (p < 0.05). There is a difference between guided inquiry implementation with scaffolding techniques and conventional learning implementation in students' self-efficacy (p < 0.05), and there is a difference between guided inquiry implementation without scaffolding and conventional learning implementation in students' self-efficacy (p < 0.05). Based on the results of the assumption test of the two experimental classes, a one-way ANOVA test was conducted through a significant level of  $\alpha = 0.05$ . After data processing, the output display can be seen in Table 5.

Table 5. Self-efficacy Score of Guided Inquiry with and Without Scaffolding

Inter-within-groups	SS	df	MS	F	P
Inter-group	1,737	1	1,737	,617	,435
Within-group	151,977	54	2,814		
Total	153,714	55			

Description

SS: Sum of Squares df: Degrees of Freedom MS: Mean Square F: F-Ratio P: P-value

Based on the results of the one-way ANOVA test in Table 5. The analysis is based on two statistical hypotheses (H1 and H2). Hypothesis one is that students' self-efficacy in guided inquiry implementation with scaffolding techniques is not better or equal to students in inquiry implementation without scaffolding techniques. Hypothesis two is that students' self-efficacy in guided inquiry implementation with scaffolding techniques is not better or equal to students in inquiry implementation without scaffolding techniques.

The p-value < 0.05 so that Ho is rejected, Ha is accepted, it can be concluded that the self-efficacy in the implementation of guided inquiry with scaffolding techniques is better than the implementation of guided inquiry without scaffolding techniques. Based on the results of the assumption test of the two classes, namely the implementation of inquiry with scaffolding techniques and the implementation of conventional learning, the one-way ANOVA test was conducted through a significant level of  $\alpha = 0.05$ . After data processing, the output display can be seen in Table 6.

Table 6. Self-efficacy Score of Guided Inquiry with Scaffolding and Conventional Learning

SS	df	MS	F	P
Inter-groups	124.190	1	124.190	28.919 <.001
Within-groups	223.310	52	4.294	
Total	347.500	53		

Description

SS: Sum of Squares df: Degrees of Freedom MS: Mean Square F: F-Ratio P: P-value

Based on the results of the one-way ANOVA test in Table 6. The analysis is based on two statistical hypotheses (H1 and H2). Hypothesis one is that students' self-efficacy in implementing guided inquiry with scaffolding techniques is not better or the same as in implementing conventional learning. Hypothesis two is that students' self-efficacy in guided inquiry implementation with scaffolding techniques is better than students in conventional learning implementation.

The p-value < 0.05 appearances, so that H0 is rejected, and Ha is accepted. It can be concluded that self-efficacy in guided inquiry implementation with scaffolding techniques is better than conventional learning implementation. Based on the results of the assumption test of the two classes, namely the implementation of guided inquiry without scaffolding techniques and the implementation of conventional learning, the one-way ANOVA test was conducted through a significant level of  $\alpha = 0.05$ . After data processing, the output display can be seen in Table 7. Table 7. Self-efficacy Score of Guided Inquiry without Scaffolding and Conventional Learning

SS	df	MS	F	P
Inter-groups	93,853	1	93,853	18,283 <.001
Within-groups	256,667	50	5,133	
Total	350,519	51		

Description

Based on the results of the one-way ANOVA test in Table 7. The analysis is based on two statistical hypotheses (H1 and H2). Hypothesis one is that students' self-efficacy in guided inquiry implementation without scaffolding techniques is not better or the same as in conventional learning implementation. Hypothesis two is that self-efficacy in guided inquiry implementation without scaffolding techniques is better than that of students in conventional learning implementation. It appears that the p-value  $< 0.05$  so that  $H_0$  is rejected,  $H_a$  is accepted. It can be concluded that self-efficiency in implementing guided inquiry without scaffolding techniques is better than implementing conventional learning.

The study results based on post hoc analysis shown a significant difference in self-efficiency questionnaire scores between the two experimental groups and one control group. This finding is consistent with study (Jatisunda et al, 2020), which reported that the discovery learning model with scaffolding techniques can enhance students' self-efficacy. This recent study used three classes with different treatments: inquiry learning with scaffolding techniques, inquiry learning without scaffolding techniques, and conventional learning. After this study, the results shown a significant difference in students' self-efficacy after being given treatment by the teacher Inquiry learning is very influential because it applies several methods focusing on the interaction between students and problems related to their daily lives. In inquiry-based learning, students are required to develop reasoning skills, collaborative work, and make connections with real-life experiences as they learn (Wale & Bishaw, 2020). Therefore, with the application of inquiry learning, students will reflect on their learning and thinking in a discussion in the learning process. It greatly affects the students' self-efficacy (Watanabe et al, 2024).

The results of previous studies have collaborated with several learning models. One of them is collaborating inquiry learning assisted by audiovisual media to enhance students' math learning outcomes (Prasanti et al, 2023). Another collaboration is in the form of combining the discovery learning model with scaffolding techniques on creative thinking skills and also self-efficacy owned by students (Jatisunda et al, 2020). Another study provides results that inquiry learning can enhance their understanding of science concepts and can also enhance students' self-efficacy (Sumantri, 2023). The inquiry learning model with scaffolding techniques can also reduce the percentage of misconceptions about grade fourth in science learning materials (Haidar et al, 2020).

Enhancing mathematics self-efficacy and also reduce anxiety about learning mathematics, students can be planned with the implementation of the curriculum and learning practices in the classroom (Türkmenoğlu & Yurtal, 2020). An educator is required to be able to enhance professionalism in design, planning, implementing, and managing highly effective learning and can also produce effective learning assessments (Al Kamil et al, 2023). Therefore, a guided inquiry model with scaffolding techniques was designed. Learning mathematics using inquiry learning has proven that the model is a valid form of task design that can be given to students. This is because of the existence of this learning model can motivate active learning and can enhance the active interaction that students will do in the classroom (Fredriksen et al, 2024). Learning mathematics with this inquiry learning model also has a **positive impact on students' critical thinking skills, which include** several accesses, including interpretation, analysis, **inference, evaluation, explanation, and self-regulation** (Wale & Bishaw, 2020). Guided inquiry learning is a model where the teacher guides students and provides instructions. Students carry out each stage according to the guided inquiry syntax (Fitriansyah et al, 2021). By using a combination of learning strategies, teachers can also create a learning environment that empowers students to succeed in mathematics (Clemente et al, 2024).

#### 4. CONCLUSION

Based on the study's **results, it can be concluded that** using guided inquiry learning with scaffolding techniques can enhance the primary students' self-efficacy. In this case, there are differences in the results in each class and different interference have been given. The class results better when an intervention is given through guided inquiry-based learning with scaffolding techniques. On the other hand, although the study's results showed positive things, this study was conducted with a relatively small sample of participants. Therefore, we recommend that future studies conduct further studies on guided inquiry learning with scaffolding techniques and involve a broader research sample.

#### 5. REFERENCES

- Al Kamil, M. N, Rita Eka Izzaty, & Nur Patmawati. (2023). Digital picture storybooks, can **increase students' self-efficacy and interest in learning?** *Jurnal Ilmiah Sekolah Dasar*, 7(1), 35- 45. <https://doi.org/10.23887/jisd.v7i1.54457>
- Anggraini, M, Huda, I, Safrida, S, Rahmatan, H, & Djufri, D. (2022). Penerapan model **multiple representation berbasis somatis, auditori, visual, intelektual terhadap self efficiency peserta didik.** *Jurnal Pendidikan Sains Indonesia*, 10 (1), 11-20. <https://doi.org/10.24815/jpsi.v10i1.21690>
- Bandura, A. (1997). **Self-efficacy: The exercise of control.** *Worth Publishers.* [https://books.google.co.id/books?id=eJ-PN9g\\_o-EC](https://books.google.co.id/books?id=eJ-PN9g_o-EC)
- Bikmaz, F. H, Ozer, E, Soyak, O, & Reçber, H. (2010). Strategi perancah yang diterapkan oleh guru mahasiswa untuk mengajar matematika. <http://ijrte.eab.org.tr/1/spc.issue/3f.hazir.pdf>
- Bopo, G, Ngura, E. T, Fono, Y. M, & Laksana, D. **NL ( 2023).** Peningkatan kemampuan numerasi dengan media pembelajaran papan pintar berhitung pada anak usia 6-7 tahun. *Jurnal Ilmiah Pendidikan Citra Bakti*, 10(3), 468-480. <https://doi.org/10.38048/jipcb.v10i3.1998>
- Clemente, J, Kilag, O, Ypon, A, Groenewald, E, Groenewald, C. A, & Ubay, R. (2024). **Enhancing mathematics self-efficacy: Intervention strategies and effectiveness-a systematic review.** *International Multidisciplinary Journal of Research for Innovation, Sustainability, and Excellence (IMJRISE)*, 1(2), 274-280.
- Fitriansyah, R, Werdhiana, I. K, & Saehana, S. (2021). Pengaruh pendekatan STEM dalam model inkuiri terbimbing terhadap sikap ilmiah dan kerja ilmiah materi IPA. *Jurnal Ilmiah Pendidikan Fisika*, 5(2), 225 th <https://doi.org/10.20527/jipf.v5i2.3598>
- Fredriksen, H, Rebenda, J, Rensaa, R. J, & Pettersen, P. (2024). Inquiry-based linear algebra teaching and learning in a flipped classroom framework: A case study. *PRIMUS*, 1-21. <https://doi.org/10.1080/10511970.2024.2375712>
- Haidar, D. A, Yuliati, L, & Handayanto, S. K (2020). **The effect of inquiry learning with scaffolding on misconception of light material among fourth-grade students.** *Jurnal Pendidikan IPA Indonesia*, 9(4), 540-553. <https://doi.org/10.15294/jpii.v9i4.22973>
- Husnaini, S. J, & Chen, S. (2019). **Effects of guided inquiry virtual and physical laboratories on conceptual understanding, inquiry performance, scientific inquiry self- efficiency, and enjoyment.** *Physical Review Physics Education Research*, 15 (1), 010119. <https://doi.org/10.1103/PhysRevPhysEducRes.15.010119>
- Jatisunda, M. G, Suciawati, V, & Nahdi, D. S. (2020). **Discovery learning with scaffolding to promote mathematical creative thinking ability and self-efficacy.** *Al-Jabar: Jurnal Pendidikan Matematika*, 11(2), 351-370. <https://doi.org/10.24042/ajpm.v11i2.6903>
- Katz, S. (2015). **Enhancing self-efficacy of elementary school students to learn mathematics.** *Journal of Curriculum and Teaching*, 4(1), p42. <https://doi.org/10.5430/jct.v4n1p42>

Kurnia, L. D. & Suyanta. (2024). The effect of process oriented guided inquiry learning (POGIL) integrated flipped classroom on problem solving ability and self-efficacy of high school students on thermochemistry material. *Jurnal Penelitian Pendidikan IPA*, 10(6), 3046-3057. <https://doi.org/10.29303/jppipa.v10i6.7169>

Luce, S. M. (2024). A dissertation in practice. <https://www.proquest.com/docview/3057608075/E023E872326A468EPQ/2>

Luzyawati, L. (2018). Analisis kemampuan berpikir kritis siswa sma materi alat indera melalui model pembelajaran inquiry pictorial riddle. *Edu Sains: Jurnal Pendidikan Sains & Matematika*, 5 (2), 9. <https://doi.org/10.23971/eds.v5i2.732>

Makmur, W., Susilo, H., & Indriwati, SE (2019). Implementation of guided inquiry learning with scaffolding strategy to increase critical thinking skills of biology students' based on lesson study. *Journal of Physics: Conference Series*, 1227(1), 012003. <https://doi.org/10.1088/1742-6596/1227/1/012003>

Ningrum, DP, Budiyanoto, M., & Susiyawati, E. (2021). Penerapan model pembelajaran guided inquiry dengan LKPD berbasis scaffolding untuk melatih keterampilan proses sains siswa. <https://ejournal.unesa.ac.id/index.php/pensa/article/view/41078>

OECD. (2019). PISA 2018 Results (Volume III): What school life means for students' lives. OECD. <https://doi.org/10.1787/acd78851-en>

Pitaloka, H. V., Sofya, E., & Efkari, T. (2020). The effectiveness of guided inquiry learning model to improve science literacy skills and students self efficacy on acid-base materials. <https://jurnal.fkip.unila.ac.id/index.php/JPK/article/view/21530>

Prasanti, N. P., Suarjana, IM, & Wira Bayu, G. (2023). The guided inquiry learning model aided by audiovisual media improves students' mathematics learning outcomes. *Jurnal Pedagogi Dan Pembelajaran*, 6(2), 247-254. <https://doi.org/10.23887/jp2.v6i2.61707>

Puozzo, C., & Audrin, C. (2021). Improving self-efficacy and creative self-efficacy to foster creativity and learning in schools. *Thinking Skills and Creativity*, 42, 100966. <https://doi.org/10.1016/j.tsc.2021.100966>

Puspitaningsih, F., & Handayanto, SK (nd). Pengaruh PBL dengan scaffolding prosedural terhadap kemampuan berpikir tingkat tinggi ditinjau dari kemampuan tinggi dan rendah siswa. <https://journal.um.ac.id/index.php/jptpp/article/view/11333>

Rahayu, M., Asyhari, A., & Anjani, AV (2022). Scaffolding in guided inquiry learning with google classroom: Effect on physics conceptual understanding. *Jurnal Inovasi Pendidikan IPA*, 8(2), 174-184. <https://doi.org/10.21831/jipi.v8i2.48365>

Rusmansyah, R., Rahmah, SA, Syahmani, S., Hamid, A., Isnawati, I., & Kusuma, AE (2023). Implementasi model PJBL-STEAM konteks lahan basah untuk meningkatkan kemampuan berpikir kritis dan self-efficacy peserta didik. *JINoP (Jurnal Inovasi Pembelajaran)*, 9(1). <https://doi.org/10.22219/jinop.v9i1.23493>

Schunk, DH, & DiBenedetto, MK (2022). Academic self-efficacy. (pp. 268-282). Routledge. <https://doi.org/10.4324/9781003013778-21>

Sotiriou, SA, Lazoudis, A., & Bogner, FX (2020). Inquiry-based learning and E-learning: How to serve high and low achievers. *Smart Learning Environments*, 7(1), 29. <https://doi.org/10.1186/s40561-020-00130-x>

Sumantri, MS (2023). The influencing of inquiry-based learning on science conceptual understanding in terms of primary schools self-efficacy. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 7(3), 3627-3638. <https://doi.org/10.31004/obsesi.v7i3.4618>

Suryani, Y., Ningrum, AR, Hidayah, N., & Dewi, NR (2021). The effectiveness of blended learning-based scaffolding strategy assisted by google classroom toward the learning outcomes and students' self-efficacy. *Journal of Physics: Conference Series*, 1796(1), 012031. <https://doi.org/10.1088/1742-6596/1796/1/012031>

Türkmenoğlu, M., & Yurtal, F. (2020). An investigation of elementary school students' anxiety levels toward mathematics and their perceptions of self-efficacy. <https://dergipark.org.tr/tr/pub/cuefd>

Vallejo, nilson valencia, Vargas, omar lopez, & Rodriguez, luis sanabria. (2019). Effect of a metacognitive scaffolding on self-efficacy, metacognition, and achievement in e-learning environments. *Knowledge Management & E-Learning: An International Journal*, 1-19. <https://doi.org/10.34105/j.kmel.2019.11.001>

Wale, B. D., & Bishaw, K. S. (2020). Effects of using inquiry-based learning on EFL students' critical thinking skills. *Asian-Pacific Journal of Second and Foreign Language Education*, 5(1), 9. <https://doi.org/10.1186/s40862-020-00090-2>

Watanabe, T., Yonezawa, T., Yamasaki, A., & Nagata, T. (2024). Scoping review of teaching methods for inquiry-based learning in Japanese elementary schools: Focusing on the "period for integrated studies". *Pedagogies: An International Journal*, 1-15.

<https://doi.org/10.1080/1554480X.2024.2395264>

Wibowo, T. H., Rudibyani, R. B., & Efkari, T. (2015). Penerapan model inkuiri terbimbing dalam meningkatkan efikasi diri dan penguasaan konsepsiswa. <https://www.neliti.com/id/publications/139095/penerapan-model-inkuiri-terbimbing-dalam-meningkatkan-efikasi-diri-dan-penguasaa> Volume (Issue), Year, Page-Page *Jurnal Pendidikan MIPA* e-ISSN: 2550-1313 | p-ISSN: 2087-9849 <http://jurnal.fkip.unila.ac.id/index.php/jpmipa/>

2 *Jurnal Pendidikan MIPA*, Volume (Issue), Year, Page-Page

*Jurnal Pendidikan MIPA*, Volume (Issue), Year, Page-Page 3