

**THE PROBLEM BASED LEARNING MODEL IN LEARNING TO
EXCAVATE INFORMATION FROM HISTORICAL TEXTS
IN CLASS VI**

Agus Abdurohim¹, Heris Hendriana², Ika Mustika³

¹⁻³IKIP Siliwangi

¹ringgoagus1984@gmail.com, ²herishen@ikipsiliwangi.ac.id, ³mestika@gmail.com

ABSTRACT

The skill of extracting information from a text is part of reading comprehension. In this study, learning to extract information was carried out using a *problem-based model learning*. So the purpose of this study is to determine the influence of *the problem based model learning* in learning to explore historical text information in class VI. The research method used is quantitative experiment, with sample population in control class (VI.b) and experimental class (VI.a). The results of the study showed that the average pretest in class VI.a was 67.83, while for class VI.b as the control class the average pretest was 67.42. The results of the posttest shows the average value of class VI.b (control class) is 77.98, while for class VI.a (experimental class) it is 80.93. The Sig. (2-tailed) value is 0.32, which means less than 0.05. So it can be interpreted that the experimental class (class VI.a) has a higher change compared to the control class (class VI.b). The conclusion of this study is the *Problem Based model Learning* can have a good influence on the skills of exploring historical text information in class VI of SD Negeri Harjasari 2.

Keywords: Problem Based Model Learning, Digging Up Information, Historical Texts

ABSTRAK

Kemampuan mengekstrak informasi dari teks merupakan bagian dari pemahaman membaca. Dalam penelitian ini, pembelajaran mengekstrak informasi dilakukan menggunakan model pembelajaran berbasis masalah. Oleh karena itu, tujuan penelitian ini adalah untuk menentukan pengaruh model pembelajaran berbasis masalah dalam pembelajaran mengeksplorasi informasi teks sejarah di kelas VI. Metode penelitian yang digunakan adalah eksperimen kuantitatif, dengan populasi sampel di kelas kontrol (VI.b) dan kelas eksperimen (VI.a). Hasil penelitian menunjukkan bahwa rata-rata pretest di kelas VI.a adalah 67,83, sedangkan untuk kelas VI.b sebagai kelas kontrol rata-rata pretestnya adalah 67,42. Hasil posttest menunjukkan rata-rata nilai kelas VI.b (kelas kontrol) adalah 77,98, sedangkan untuk kelas VI.a (kelas eksperimen) adalah 80,93. Nilai Sig. (dua ekor) adalah 0,32, yang berarti kurang dari 0,05. Oleh karena itu, dapat disimpulkan bahwa kelas eksperimen (kelas VI.a) mengalami perubahan yang lebih tinggi dibandingkan dengan kelas kontrol (kelas VI.b). Kesimpulan dari penelitian ini adalah Model Pembelajaran Berbasis Masalah dapat memberikan pengaruh yang baik terhadap keterampilan mengeksplorasi informasi teks sejarah pada kelas VI SD Negeri Harjasari 2.

Kata kunci: Model Pembelajaran Berbasis Masalah, Menggali Informasi, Teks Sejarah

INTRODUCTION

Indonesian language learning in Elementary Schools must refer to the principles of learning development, in order to optimize students' potential by considering various aspects of the students. The principles of Indonesian language learning development according to (Resmi

, 2009) are "humanism, progressivism , and reconstructionism ". The principle of humanism views that humans have the same provisions in understanding something, humans have the motivation and interest to achieve something, and humans have their own characteristics / characteristics. Indonesian language learning must consider that students have the same provisions in understanding a subject matter, so that teachers place students as learning subjects, and teachers are not the only source of information. In learning, teachers act as models, friends for students, motivators and facilitators in learning. The principle of progressivism views that the knowledge received by students is not mechanistic , and in the learning process students are often faced with problems. According to (Resmini , 2009) states that: The principle of progressivism assumes: 1) mastery of knowledge and skills is not mechanistic but requires creativity ; and 2) in the learning process, students are often faced with problems that require new solutions."

The acquisition of knowledge and skills through creativity develops continuously , and in solving problems, students need to filter and reorganize their experiences and knowledge. The principle of reconstructionism assumes that "the learning process is treated as creativity in organizing and connecting experiences and knowledge to form a whole" (Resmini , 2009). The learning process is a process in which students are able to connect their initial knowledge (experience) with their new knowledge, so that later a complete knowledge is formed as a result of the process.

Reading is not an easy job because in the reading process, readers are required to understand the contents of the reading they are reading, (Wahyudi, 2018). According to Somadoyo (Habibah & Muftianti , 2020) reading is an interactive activity to understand the contents contained in written materials. Furthermore (Habibah & Muftianti , 2020) stated that reading skills are important for students to have, because reading is the main capital for students to find various information or messages conveyed by the author in a book/reading content and by reading students can also gain new knowledge. Reading is one of the skills that students must master in learning Indonesian. Reading is part of the four skills referred to as language skills or communication skills, as stated by (Tarigan, 2008) language skills include listening skills . skills), speaking skills skills), reading skills (reading) skills), (4) writing skills (writing) skills). Communication or language in question is a process of conveying intent to others using certain channels. According to (Djuanda, 2006) communication can be in the form of expressing thoughts, agreements, desires to convey information. When someone reads, they are required to interact through text/writing. Reading is a set of thinking skills to explore the

meaning contained in the reading. According to (Abidin, 2015) it explains that reading is defined as a complex information processing process. Reading activities certainly have various purposes that lead readers, one of which is to explore the meaning or information from the reading.

The skill of digging up information is part of the reading comprehension activity. Reading comprehension is a stage after initial reading where readers are no longer required to pronounce letters correctly and arrange each sound of the language into words, phrases and sentences but here they are required to understand the contents of the reading they are reading, (Susanti & Muftianti, 2021). Reading comprehension through digging up information, students can obtain information actively receptively. According to Nurhadi (Sutianik, 2021) it is called receptive because by reading someone will obtain information, gain knowledge and new experiences. Therefore, reading instruction should be further improved considering the importance of reading as a tool for learning, reading to get information, reading is not an easy job, because in the reading process, readers are required to understand the contents of the reading they are reading. Based on the opinion above regarding the definition of reading and reading comprehension, the scope of information gathering skills in this study is the ability to obtain information from historical texts actively receptively and interactively by using question words (5W1H). This refers to the desired competency of the 2013 curriculum for the Indonesian language subject for grade 6, which is found in basic competency 3.4 Digging up important information from history books using the aspects: what, where, when, who, why, and how.

One of the basic competencies that students must master in grade VI is to dig up important information from history books using question words (what, where, when, who, why, and how). This basic competency clearly does not only contain linguistic material, but there is also an aspect of knowledge, namely in the material about history, especially the history of the Indonesian nation against colonialism. The linguistic aspect is in the skill of digging up important information from historical texts and the use of appropriate question words. Furthermore, if viewed from these basic competencies, critical thinking skills can also be developed in students, because in these basic competencies there are competencies to dig up and ask questions, which are part of the critical thinking process. So that the elements of critical thinking that can be developed in this study are asking questions, processing information, and reflecting on the results of digging up information from historical texts.

The concept of reading and developing critical thinking explained above is not in line with what happens in the field, especially for students in grade VI of SD Negeri Harjasari 2. Based

on observations of the learning process in grade VI.A on basic competency 3.4 exploring important information from history books, the results were that only 10 people completed the learning with the specified KKM, and 19 people were below the established criteria. Even among the students who fell into the incomplete criteria, there were students who were really unable to understand the information read and the use of question words and answers correctly. This condition made the author interested in conducting research on the skills of exploring important information from historical texts using question words. This problem can be tested by applying the *problem-based model learning*, because this learning model emphasizes more on the learning process, so that students are invited to actively solve a problem they face. In the *problem based model learning* In this way, students truly understand the material, not just memorize it, so that with this model, students will be more enthusiastic about participating in learning and can relate the material they are learning to everyday life.

Problem Based Model Learning is a learning model that uses the different thinking abilities of students individually and in groups, in solving real environmental problems in a meaningful, relevant and contextual way. This model aims to improve the ability to apply concepts to real problems, integrate the concept of high-level thinking skills (HOTS), and the desire to learn independently. According to (Syamsidah & Suryani, 2018) states that the Problem Based model Learning (PBL) is a learning model that involves students trying to solve problems using several stages of scientific methods so that students are expected to be able to learn knowledge related to the problem and at the same time students are expected to be able to have skills in solving problems.

Problem based model Learning is a learning model that involves students to actively determine problems, which are connected to the knowledge they have to be solved scientifically. Problem-Based Learning (PBL) is a learning model that is characterized by the existence of real problems where involving students to be able to find a problem that will be studied in learning and be able to solve the problems they face through stages of scientific thinking (Ahmad et al. al., 2016). Steps of *the problem based model learning* includes knowing the problem; formulate the problem; formulate a hypothesis; collect data; testing hypotheses; and determining problem solving options (Ahmad et al., 2016). In this study, the steps of *the problem-based model learning* used refers to Arends' opinion (Nurun Nafiah & Suyanto, 2017), namely 1) Orienting students to problems; 2) Organizing students; 3) Guiding individual/group investigations; 4) Developing and presenting work results; and 5) Analyzing and evaluating the problem-solving process. Advantages of the *problem-based model learning*

is that students can build knowledge to solve problems, train students in carrying out scientific activities, and students can assess their own learning progress. However, there are also shortcomings of the *problem-based model*. *This learning* is when faced with a class with a high level of diversity, there will be difficulties in dividing tasks, and time will be needed to prepare for *problem-based learning models. learning*.

Characteristics of problem based models learning in this study, namely 1) the focus of learning is on determining important information in historical texts, 2) students are tasked with creating questions and answers, as a process of exploring information in historical texts, which is done together in groups, 3) different learning sources (historical texts) in each group, 4) the teacher acts as a facilitator in learning activities. Characteristics of the problem-based model learning refers to the opinion of Sanjaya (Ahmad et al. , 2016) which mentions several characteristics of PBL, namely 1) a series of activities that require students to actively think, communicate, search for and process data, and conclude, 2) learning activities are directed at solving problems, and 3) problem solving is carried out with a scientific thinking approach. Meanwhile (Syamsidah & Suryani, 2018) put forward the characteristics of the problem-based model learning , namely 1) that PBL as a series of activities, starting from planning, implementation to evaluation, In the process of implementing learning, students do not only listen, take notes and then memorize the lesson material, but are expected to actively think, communicate, search for and process data and finally conclude it; 2) problem-based learning places problems as the keyword of the learning process; 3) problem-based learning, however , remains within the framework of a scientific approach and is carried out using a deductive and inductive thinking approach.

Benefits of *problem based models learning* , namely improving critical thinking skills, student self-confidence, building leadership and cooperation skills, learning skills, and motivating students in learning. Meanwhile, the Ministry of Education and Culture (2013) stated that there are several advantages of the problem-based learning model/PBL, namely 1) meaningful learning occurs, 2) in PBL situations, students can apply knowledge and skills simultaneously in relevant contexts, and 3) PBL can improve critical thinking skills, foster student initiative in working, internal motivation to learn, and can develop interpersonal relationships in group work. Based on the benefits and advantages of the *problem-based model learning* , then with this research, it can provide an influence on the skills of exploring historical text information in grade IV students.

Research conducted (Wahyuni et al. , 2021) entitled "Implementation of the PBL (*Problem Based Learning*) Model Learning) on Thematic Learning Outcomes (Indonesian Language Subject Content)". With the research results showing that the average thematic learning outcomes in each cycle increased, so the conclusion of this study is the application of *the problem based model. learning* can improve thematic learning outcomes (Indonesian language subject content) of grade III students. The similarity in this study is the application of the *problem based model learning* , where in this study it has been proven that this model is able to improve or provide a good influence on student learning outcomes.

Research conducted (Nugraha et al. , 2019) entitled "Improving Descriptive Writing Skills Through a Scientific Approach with the *Problem Based Method Learning* in Grade IV Elementary School". With the results of the study showing that the learning completion before using the action was 61.4 with a percentage of completion of 36%. The increase in cycle I increased to 69.6, an increase of 24% with a percentage of completion reaching 60%, and in cycle II increased to 75.6, an increase of 28%. The percentage of completion is 88%. The conclusion is that learning with the *problem based model learning* can improve students' descriptive writing skills in the Indonesian Language subject of class IV SDN 3 Selajambe . In this study, the application of *the problem based model learning* can improve descriptive writing skills.

Research conducted by (Indarto, 2021) entitled " *Problem Based Model Learning* to Improve Indonesian Language Learning Achievement in the Material of Delivering Persuasive Speeches for Class IX-F of State Islamic Junior High School 2 Kudus in the Odd Semester of the 2019/2020 Academic Year". With the results of the study that there was an increase in the learning achievement of class IX-F students, indicated by the average student learning achievement in cycle I of 7.08 and in cycle II of 8.68. This study has been proven to be able to improve the learning achievement of class IX students.

Of the three studies that have been conducted related to the application of *the problem based model learning* can all have a good impact on learning, be it in thematic learning, writing descriptions, and delivering speeches. The novelty of this study lies in the application of the *problem- based model. learning* in learning to dig up information from historical texts. For that reason, is the *problem based model learning* can have a good influence on the learning outcomes of exploring information in historical texts for class VI? How are the skills of exploring information in historical texts after applying the *problem- based model? learning* ?

So the purpose of this study is how big the influence of *the problem based model is. learning* about the skills of digging up information from historical texts in class VI.

METHOD

The method used in this study is a quantitative experimental type. This method is carried out with the aim of finding the influence between one variable and another variable. The design of this study involved two groups that were given pretest and posttest treatments to then compare the success of a variable. The flow of the experimental method in this study includes: 1) preparation stage; 2) implementation of the study; 3) pretest ; 4) learning to explore historical text information using a *problem- based model learning* ; 5) post-test ; 6) data processing and analysis. The population in this study were students of grades VI.a and VI.b of SDN Harjasari 2 totaling 60 people. To determine the sample, the data obtained from this study were then tested for normality , and t-test. Data collection techniques were in the form of tests, observations, and documentation. After determining the data collection technique, the researcher prepared an instrument that included various learning designs. The analysis technique was with initial data analysis and final data analysis.

RESULT AND DISCUSSION

Result

After the research was conducted, pretest and posttest data were obtained . The data were then analyzed as initial data and final data. Based on the analysis, the average pretest in class VI.a was 67.83, while for class VI.b as the control class, the average pretest was 67.42. Furthermore, the data was tested for normality and homogeneity against the value of exploring important information in historical texts in classes VI.a and VI.b , the results showed normally distributed and homogeneous, this is based on the following SPSS calculation results:

Tests of Normality							
	Kelas	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Nilai Menggali Informasi	Kelas VI.a	.146	29	.117	.943	29	.122
	Kelas VI.b	.195	31	.004	.937	31	.067

a. Lilliefors Significance Correction

		Levene Statistic	df1	df2	Sig.
Nilai Pretes Menggali Informasi	Based on Mean	1.188	1	58	.280
	Based on Median	.726	1	58	.398
	Based on Median and with adjusted df	.726	1	54.923	.398
	Based on trimmed mean	1.045	1	58	.311

According to (Sugiyono, 2016) stated that before the implementation of the treatment, variable control was carried out in the control class and the experimental class. In this study, what was controlled was the skill of digging up important information on historical texts, the number of meetings, teaching materials, and the number of students. The control of the skill of digging up important information was obtained from the pre-test value , so that the average pre-test value tended to be the same between the control class and the experimental class. The material taught was digging up important information on historical texts. The number of students for the control class was 31 and the experimental class was 29 students. These variables were controlled in order to minimize interfering variables that could possibly influence the provision of treatment, so that the effectiveness of learning to dig up important information on historical texts in the experimental class was truly influenced by the *problem-based model. learning* , not due to confounding variables .

The post-test was conducted to determine the results of the treatment given during learning. The average value of class VI.b (control class) was 77.98, while for class VI.a (experimental class) it was 80.93. The results of the post-test showed that the final data on the value of the skill of digging up important information in historical texts was normally distributed and homogeneous. From the results of the calculation, it was stated that the average value post-test class VI.a is higher than class VI.b. Furthermore, t-test testing is carried out using the SPSS application with the following output :

		Levene's Test for Equality of Variances		t-Test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Nilai Postes Menggali Informasi	Equal variances assumed	1.491	.227	2.201	58	.032	2.963	1.346	.269	5.658
	Equal variances not assumed			2.213	57.567	.031	2.963	1.339	.282	5.644

Based on the table above, the Sig . (2-tailed) value is 0.32, which means it is less than 0.05. So it can be interpreted that the experimental class (class VI.a) has a higher change compared

to the control class (class VI.b). With this change, it is clear that the *problem based model learning* has a good impact on student learning, this cannot be separated from the steps of *the problem-based model. learning* carried out in the learning process.

Discussion

At the problem orientation stage, the activity begins with the teacher explaining the learning objectives, tools/materials needed, and explaining the learning steps that will be taken. At the stage of organizing students, what the teacher does is divide students into five groups, with each group given a different role in each group. At the stage of guiding the investigation, what the teacher does is provide motivation and facilitation to students to complete the learning steps according to the LKPD in each group. At the stage of presenting the results, what students do is each group presents their work results in front of the class, then responses are given from other groups. At the analysis stage, the teacher and students ask questions related to the learning process that has been carried out, then the teacher provides reinforcement for student achievement in learning. Related to student learning achievements, in this study students showed a change in their ability to explore information on historical texts, meaning that during the learning process students were able to read understanding actively and receptively from the historical texts presented in learning, this can be seen from the achievement of learning outcomes in the experimental class. Results of applying the *problem based model learning* on information gathering skills in class VI of SD Negeri Harjasari 2 turned out to be relevant to previous research, including:

Research conducted by (Nurun Nafiah & Suyanto, 2017) entitled "*Application of Problem Based Models Learning to Improve Critical Thinking Skills and Student Learning Outcomes*". With the results of the PBL model research, it can improve student learning outcomes by 31.03%, and after the implementation of PBL, the number of students who achieved KKM was 29 students (100%). The research conducted by (Kristyanawati et al. , 2019) entitled "*Improving Expository Text Writing Skills Using the Problem Based Model Learning*". With the results of the study, the percentage of student completion rates in cycle I was 43.75%, cycle II was 43.75%. 68.75%, and cycle III was 100%. The implementation of PBL was better than in the previous cycle , as indicated by an increase in the passing score from 73% (Classification C) in cycle II to 82% (Classification B) in cycle III. Research conducted by (Indarto, 2021) entitled "*Problem Based Model Learning to Improve Indonesian Language Learning Achievement on the Material "Delivering a Persuasive Speech" for Class IX-F of State Islamic*

Junior High School 2 Kudus in the Odd Semester of the 2019/2020 Academic Year". With the results of the study, there was an increase in student activity during the learning process, both individually and in groups. Student responses reached 82.83% with a high category.

CONCLUSION

The conclusion of this study is that the post-test data (scores of skills in exploring important information in previous texts) in both the experimental and control classes are normally distributed and consistent. This shows that the data obtained is in accordance with the assumptions needed to conduct a t-test. The results of the t-test show that there is a significant difference between the average test scores of the experimental and control classes. The post-test scores of the experimental class are higher than those of the control class. This significant difference in the average post-test scores indicates that the learning model used in the experimental class (problem-based learning model) is more effective in improving the skills of exploring important information in learning texts before learning. *Problem Based Model Learning* can have a good influence on the skills of digging up historical text information in class VI of SD Negeri Harjasari 2. This can be seen from the average learning outcomes of class VI.a as an experimental class, which is 80.93, and the Sig . (2-tailed) value is 0.032, which means less than 0.05. So it can be interpreted that the experimental class (class VI.a) has a higher change compared to the control class (class VI.b).

REFERENCES

- Abidin, Y. (2015). *Pembelajaran Multiliterasi*. PT Refika Aditama.
- Ahmad, F., Ali, M., Mbasi, E., Mere, S. Y., Baitanu, N. Y., Irna, S., Harus, A. K., Watu, R., desantos, Blegur, Y. B., Nelci, V., Dalla, O. Y. W., Buru, M., Medi, M., Lein, A. S., Toka, V., & Rahmawati, A. (2016). Rencana pelaksanaan Pembelajaran Inovatif di Sekolah Dasar Mengacu Kurikulum 2013. In *Sanata Dharma University Press*. [https://repository.usd.ac.id/11801/1/Buku Final.pdf](https://repository.usd.ac.id/11801/1/Buku%20Final.pdf)

- Djuanda, D. (2006). *Pembelajaran Bahasa Indonesia yang Komunikatif dan Menyenangkan*. Departemen Pendidikan Nasional.
- Habibah, C. L., & Muftianti, A. (2020). Pembelajaran keterampilan membaca pemahaman teks narasi pada siswa kelas v sd dengan menggunakan metode sq3r. *COLLASE (Creative of Learning Students Elementary Education)*, 3(6), 327–334. <https://journal.ikipsiliwangi.ac.id/index.php/collase/article/view/4659>
- Indarto, W. (2021). Model Problem Based Learning dalam Meningkatkan Prestasi Belajar Bahasa Indonesia Materi “Menyampaikan Pidato Persuasif” Kelas IX-F Madrasah Tsanawiyah Negeri 2 Kudus pada Semester Gasal Tahun Pelajaran 2019/2020. *Journal of Education and Teaching (JET)*, 1(2), 85–101. <https://doi.org/10.51454/jet.v1i2.49>
- Kristyanawati, M. D., Suwandi, S., & Rohmadi, M. (2019). Peningkatan Keterampilan Menulis Teks Eksposisi Menggunakan Model Problem Based Learning. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, 9(2), 192–202. <https://doi.org/10.24246/j.js.2019.v9.i2.p192-202>
- Nugraha, J., MS, Z., & Fuad, N. (2019). Peningkatan Keterampilan Menulis Deskripsi Melalui Pendekatan Saintifik Dengan Metode Problem Based Learning Di Kelas Iv Sekolah Dasar. *Prosiding Seminar Nasional Pendidikan KALUNI*, 2, 118–124. <https://doi.org/10.30998/prokaluni.v2i0.37>
- Nurun Nafiah, Y., & Suyanto, W. (2017). Penerapan Model Pbm Untuk Meningkatkan Kinerja Dan Kemampuan Berpikir Kritis Siswa Sma. *Diklabio: Jurnal Pendidikan Dan Pembelajaran Biologi*, 1(1), 45–53. <https://doi.org/10.33369/diklabio.1.1.45-53>
- Resmini. (2009). *Pembinaan dan Pengembangan Pembelajaran Bahasa Dan Sastra Indonesia*. UPI Press.
- Sugiyono. (2016). *Metode Penelitian : Kuantitatif, Kualitatif, dan R&D*. Alfabeta.
- Susanti, L., & Muftianti, A. (2021). Pembelajaran Keterampilan Membaca Pemahaman Teks Narasi Sejarah Pada Siswa Kelas V Sekolah Dasar Dengan Menggunakan Model Inquiry Learning Berdasarkan Pola Pertanyaan 5w+1h. *COLLASE (Creative of Learning Students Elementari Education)*, 04(04), 606–614. <https://journal.ikipsiliwangi.ac.id/index.php/collase/article/view/5510>
- Sutianik. (2021). Peningkatan Kemampuan Menggali Informasi tentang Sumber dan Bentuk Energi Melalui Media Audio Visual. *Jurnal Educatio*, 7(4), 1427–1432. <https://doi.org/10.31949/educatio.v7i4.1471>
- Syamsidah, & Suryani, H. (2018). Buku Model Problem Based Learning (PBL). *Buku*, 1–92.
- Tarigan, H. G. (2008). *Berbicara Sebagai Suatu Keterampilan Berbahasa*. Angkasa.
- Wahyudi, B. (2018). Upaya Meningkatkan Keterampilan Siswa dalam Menggali Informasi dari Teks Cerita melalui Model Cooperative Terpadu Membaca dan Menulis di Kelas IV SD Negeri Pohsangit Tengah Kecamatan Wonomerto. *Pedagogy: Jurnal Ilmiah Ilmu Pendidikan*, 6948, 1–6. <https://ejournal.upm.ac.id/index.php/pedagogy/article/view/3/1>

Wahyuni, N. K. A., Wibawa, I. M. C., & Sudiandika, I. K. A. (2021). Implementasi Model Pembelajaran PBL (Problem Based Learning) terhadap Hasil Belajar Tematik (Muatan Pelajaran Bahasa Indonesia). *Jurnal Ilmiah Pendidikan Profesi Guru*, 4(2), 230–239. <https://doi.org/10.23887/jippg.v4i2.36088>