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Mathematics Problem Solving Abilities of Indonesian School Students in *Sekolah Indonesia Luar Negeri* (SILN) based on Polya's Theory in terms of the Pragmatic Philosophy

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Abstract
This study aims to analyze the mathematical problem-solving abilities of Indonesian School Students in Sekolah Indonesia Luar Negeri (SILN) located in Sabah-Sarawak, Malaysia based on Polya's theory, viewed through the lens of Pragmatic philosophy. This research method is qualitative. This study employed a descriptive qualitative approach to explore the learning difficulties faced by Indonesian School Students in Sekolah Indonesia Luar Negeri (SILN), particularly in the topic of Two-Variable Linear Equation Systems (SPLDV). According to Polya, effective problem-solving involves four stages: understanding the problem, devising a plan, carrying out the plan, and evaluating the solution. Meanwhile, Pragmatic philosophy emphasizes learning through real-life experiences, suggesting that students achieve meaningful mathematical understanding when they are able to solve problems encountered in their daily lives. The findings reveal that aligning mathematics instruction with students' everyday contexts in Sekolah Indonesia Luar Negeri (SILN) *enhances their ability to solve mathematical problems effectively. As such, incorporating the principles of Pragmatic philosophy into mathematics education is essential to support and strengthen students' problem-solving skills.*
Keywords: *Mathematical problem solving ability, Polya's theory, Pragmatic philosophy school*

Abstrak
Penelitian ini bertujuan untuk menganalisis kemampuan pemecahan masalah matematis siswa Sekolah Indonesia di Luar Negeri (SILN) yang berlokasi di Sabah-Sarawak, Malaysia, berdasarkan teori Polya dan ditinjau melalui perspektif filsafat Pragmatisme. Metode penelitian ini adalah kualitatif dengan pendekatan deskriptif kualitatif untuk mengeksplorasi kesulitan belajar yang dialami siswa SILN, khususnya pada materi Sistem Persamaan Linear Dua Variabel (SPLDV). Menurut Polya, pemecahan masalah yang efektif meliputi empat tahap, yaitu: memahami masalah, merencanakan penyelesaian, melaksanakan rencana, dan mengevaluasi hasil. Sementara itu, filsafat Pragmatisme menekankan pembelajaran melalui pengalaman nyata, yang mengisyaratkan bahwa siswa memperoleh pemahaman matematis yang bermakna ketika mampu menyelesaikan masalah yang ditemui dalam kehidupan sehari-hari. Hasil penelitian menunjukkan bahwa mengaitkan pembelajaran matematika dengan konteks keseharian siswa di SILN dapat meningkatkan kemampuan mereka dalam menyelesaikan masalah matematis secara efektif. Oleh karena itu, penerapan prinsip filsafat Pragmatisme dalam pembelajaran matematika penting untuk mendukung dan memperkuat kemampuan pemecahan masalah siswa.
Kata Kunci: *kemampuan pemecahan masalah matematis, teori Polya, filsafat Pragmatisme*

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INTRODUCTION

Education in Indonesia has undergone significant transformation through the efforts of national figures who fought for accessible and inclusive learning. One of the most influential figures was Raden Mas Soewardi Surjaningrat, who later renounced his noble title and adopted the name Ki Hadjar Dewantara. This decision reflected his commitment to the principle that education should be accessible to all, especially children from common families.

In 1922, Ki Hajar Dewantara established the Taman Siswa College, a pivotal institution that emerged from a shared consensus among various national leaders regarding the urgent need for a truly national education system. This system aimed to foster a spirit of independence and nationalism among the youth. Taman Siswa served as a platform to uphold the right to education for the children of the common people, challenging the colonial education system that primarily benefited the elite. Long before this, in 1851/1852, the first indigenous teacher-training schools, known as *Kweekscholen*, were established in Surakarta. These modern educational institutions marked the beginning of formal teacher education in Indonesia. At the time, the teaching profession was considered less prestigious than administrative roles within the colonial government. However, by the late 19th century, many highly educated indigenous individuals entered the teaching profession, driven by a strong sense of mission to enlighten and educate their fellow citizens (Latif, 2020).

The teaching profession, therefore, holds a vital role in the history and development of Indonesian education, serving not only as a career but also as a means of fostering national awakening and empowerment. Education in the post-2021 era reflects the ideals of independent learning, where every Indonesian citizen has equal rights to access education. The disparities in educational opportunities between children of noble descent and those from common backgrounds have been eliminated. This principle is enshrined in Article 31, Paragraph 1 of the 1945 Constitution, which guarantees the right to education for all citizens.

The Indonesian government continues to promote equitable access to education across the nation. Equitable education is not only aimed at Indonesian citizens in areas that are included in the 3T (*Terdepan, Terluar dan Tertinggal*) areas through the SM-3T (*Sarjana Mengajar Daerah Terdepan, Terluar, dan Tertinggal*) and GGD (*Guru Garis Depan*) programs. *Terdepan* means directly adjacent to another country. *Terluar* means the outermost small islands that are inhabited and require basic services. *Tertinggal* means a district whose territory and community are less developed than other regions on a national scale. Equitable education is also aimed at Indonesian citizens living in other countries through the *Sekolah Indonesia Luar* Negeri (SILN) program.

The placements of *Sekolah Indonesia Luar* Negeri (SILN) are located in several cities, including Kuala Lumpur, Johor Baharu, Sabah, Singapore, Bangkok, Jeddah, Riyadh, Tokyo, Yangon, Cairo, and The Hague. Sabah is located on the island of Borneo, which it shares with Kalimantan. The local language spoken in Sabah is largely similar to Indonesian. Sekolah Indonesia Kota Kinabalu (SIKK), located in Sabah, is classified as an expatriate school. It has been operating since December 1, 2008, under a permit granted by the Malaysian Ministry of Education and several relevant institutions in Sabah. SIKK serves as the main coordinating institution for the Community Learning Centers (CLCs), which provide educational services for the children of Indonesian migrant workers (PMI), particularly in the Sabah–Sarawak region of Malaysia. The establishment of the CLCs was based on a Joint Statement issued during the Annual Consultations between the Governments of Indonesia and Malaysia in 2009. According to CLC infographic data for the academic year 2020–2021, SIKK oversees a total of 45 junior secondary CLCs (SMP) and 115 primary CLCs (SD), organized into several clusters, including Gugus Pantai Barat, Pedalaman

Beaufort, Keningau, Pedalaman Nabawan, Kundasang Ranau, Sandakan, Kinabatangan 1, Kinabatangan 2, Kinabatangan 3, Lahad Datu, Kunak, Semporna Balung, Tawau, and Sarawak. In addition to managing the CLCs, SIKK also coordinates distance learning programs (Pembelajaran Jarak Jauh or PJJ) in Labuan, as well as equivalency education programs (Pendidikan Kesetaraan).

Education is not just learning. Learning is translated from the word "instruction", in Greek it is called "instructus" or "intruere" which means conveying thoughts (Warsita, 2008). Based on this understanding, learning can be said to be limited to the delivery of knowledge and skills material. Learning becomes less meaningful without education. Education in Latin "educare" which means to issue or guide. According to Ki Hadjar Dewantara, education plays a role in guiding all the strengths that children have in order to achieve safety and happiness (Dewantara, 1977: 3). Education can also be interpreted as a process of experience without being limited by age (John Dewey). Each age stage has a different level/level of education, therefore the weight of the material presented varies according to the level of readiness. The educational levels of Indonesian schools in Sabah-Sarawak include PAUD, TK, SD, SMP, SMA and SMK, and universities, while the levels of education for the Malaysian royal schools are Tadika, Low School, Vocational High School (Sekolah Nasional Kebangsaan), then students can choose to continue to Level 6 or University. Learning and education must go hand in hand. Teachers should deliver appropriate material that aligns with students' level of readiness. By doing so, they can effectively guide students in realizing and developing their full potential.

Mathematics is important for students to learn according to the language and culture that is relevant in everyday life. Mathematics is connected with material in other subjects. For example, the System of Linear Equations in Two Variables (SPLDV) is connected to social studies subjects in economic activities. SPLDV is applied in everyday life, namely in determining the maximum profit, minimum capital, and the price of an item. Mathematics is a subject that is taught at every level of education. This is indicated by the existence of mathematics learning in PAUD, TK, SD, SMP, SMA/SMK and universities. The objectives of learning mathematics formulated by the National Council of Mathematics Teachers in NCTM (Santoso, 2019) are: (1) learning to communicate (mathematical communication), (2) learning to connect ideas (mathematical connection), (3) learning to reason (mathematical reasoning), (4) learn to solve a problem (mathematical problem solving), and (5) the formation of a positive attitude in mathematics.

Pragmatism in Greek comes from the word "pragma" which means action. Pragmatism is a philosophical school that has a point of view of truth from the point of view of usefulness for real life. John Dewey is a figure in the pragmatic school, according to him philosophy is not allowed to dissolve in thoughts that are neither practical nor useful and must be based on experience. Dewey states pragmatism with instrumentalism, operationalism, functionalism, and experimentalism because ideas, ideas, thoughts, and intelligence are only tools to overcome life's difficulties. This means that the main goal of learning is the use of intelligence that can be used to solve problems in everyday life. The flow of Pragmatic philosophy in this study is that learning mathematics based on experience in students' daily lives is also said to be successful if students are able to overcome mathematical problems.

Problem solving is an activity that humans often do since birth. Split means to refer to the word break which has the same meaning as to divide into smaller groups. Mathematical problem solving can mean the process by which a person finds a solution by dividing a problem related to mathematics into smaller groups. According to Rosyid (2010: 65) the problem-solving theory developed by Dewey based on his pragmatism theory is divided into five steps, namely (1) feeling a problem, (2) analyzing problems and formulating hypotheses, (3) collecting data that can be used. to clarify the problem,

(4) select and analyze hypotheses, and (5) prove the hypothesis through testing. While Polya divides problem solving steps into four steps (Susanto, 2015), namely (1) understanding the problem (understanding problem), (2) developing a plan (devising a plan), (3) implementing the plan (carry out your plan) and (4) evaluation (looking back). In this study, problem solving indicators are presented in the form of a table as follows:

Tabel 1. Problem solving indicator

Polya's Step	Indicator
Understanding problem	Students can write down the information that is known and asked from the questions.
Devising a plan	Students can develop a mathematical model and write a plan for solving the mathematical model on the problem.
Carry out your plan	Students do problem solving based on a written plan.
Evaluation	Students check the correctness of the answers and write down the conclusions of the answers.

Based on this description, the researcher is interested in analyzing the mathematical problem solving abilities of Indonesian School Students in *Sekolah Indonesia Luar Negeri (SILN)* based on Polya's theory in terms of the Pragmatic philosophy. The purpose of this study is to describe the problem-solving abilities of SILN students in solving mathematical problems. The focus of the study is particularly on the topic of Systems of Linear Equations in Two Variables (SPLDV). The analysis is carried out using Polya's four stages of problem solving. This study integrates the principles of Pragmatic philosophy, which emphasize real-life experiences. The research questions are as follows: (1) How are the problem-solving abilities of SILN students in Sabah–Sarawak on the topic of SPLDV based on Polya's four stages? (2) How do language, terminology, and contextual differences in mathematics textbooks from Indonesia influence the problem-solving abilities of SILN students in Sabah–Sarawak? (3) How do social, cultural, and environmental experiences of SILN students in Sabah–Sarawak affect their mathematical problem-solving abilities? (4) How can the application of Pragmatic philosophy support contextual mathematics learning and enhance the problem-solving abilities of SILN students in Sabah–Sarawak?

RESEARCH METHOD

This study employs a qualitative research design. According to Budiyono (2017), the snowball sampling technique is a method of selecting research subjects that may expand as needed during the research process. Therefore, this study utilizes the snowball sampling technique to determine its subjects. The data collection methods used in this study include a problem-solving test on systems of linear equations in two variables (SPLDV), which was distributed via WhatsApp; a questionnaire administered through Google Forms complete by 170 students; and interviews conducted with mathematics teachers and students via Zoom. The test results were analyzed based on the indicators of problem-solving ability according to Polya's theory. To ensure the validity of the data, triangulation was conducted by combining test results and interview findings. The indicators of problem-solving ability based on Polya's theory used in this study are as follows: (1) students are able to identify and write down the known and unknown information from the problem; (2) students are able to construct a mathematical model and outline a solution plan based on that model; (3) students carry out the problem-solving process according to the plan they have written; and (4) students review the accuracy of their answers and formulate a conclusion. The philosophical foundation of this study is Pragmatism, in which mathematics learning is

based on students' real-life experiences. Learning is considered successful if students are able to solve mathematical problems rooted in their daily lives.

The data analysis in this study followed the qualitative research framework as outlined by Creswell (2018), which emphasizes an inductive process of exploring and understanding the meaning individuals or groups ascribe to a social or human problem. In line with this framework, the interactive analysis model proposed by Miles, Huberman, and Saldaña (2014) was employed, consisting of three concurrent activities: data reduction, data display, and conclusion drawing or verification. Data reduction involved selecting, simplifying, and focusing on relevant data obtained from questionnaires, problem-solving tests, and interviews. Data display was carried out by organizing the reduced data into narrative descriptions and visual formats, such as tables and figures, to facilitate interpretation. Finally, conclusion drawing and verification were conducted by interpreting the emerging patterns and validating the findings through triangulation across multiple data sources.

RESULT AND DISCUSSION

An independent education system according to Ki Hadjar Dewantara was realized by Nadiem Makarim as the former Indonesian minister of education through the policy of "*Merdeka Belajar*". *Merdeka Belajar* means Freedom of Learning. Merdeka Belajar is the result of intensive discussions with hundreds of stakeholders, teachers, school principals, heads of offices, educator observers, lecturers, and experts. According to the Kampus Guru Cikal (2019), the principles of independent learning are: (1) student-centered, (2) iterative in nature, and (3) the ideals, methods and scope of learning. The Merdeka Belajar Policy gives each school greater autonomy. Teachers and education practitioners have the authority to create, innovate, and make policies in schools. The administration which was seen as less effective in its implementation has now been simplified. The lesson plans which initially contained thirteen components have now been simplified into three components, namely learning objectives, learning activities and assessments. Graduation which was originally benchmarked on the achievement of science with a certain standard of value has now been changed to literacy, numeracy and character. Students who are not burdened with the value of knowledge competence have an impact on their independence in learning. Freed teachers can have an impact on the quality of learning in schools, especially for students.

In an independent education system according to Ki Hadjar Dewantara, the function of education is as an effort to educate the souls of children according to their respective natures. This is in accordance with Dewantara's statement (Latif, 2020: 144)

> "*Kalau pengajaran bagi anak-anak tidak berdasarkan kenasionalan, sudah tentu anak-anak kita tak akan mengetahui keperluan kita, lahir maupun batin; lagipula tak mungkin anak-anak itu mempunyai rasa cinta bangsa dan makin lama makin terpisah dari bangsanya, sehingga kemudian barangkali jadi lawan kita*."

that means "If teaching for children is not based on nationality, of course our children will not know our needs, physically or mentally; After all, it is impossible for these children to have a sense of love for the nation and become more and more separated from their nation, so that later they may become our opponents." Ki Hadjar Dewantara emphasized that in relation to the education system, teaching must be based on nationality.

Researchers through google form took data from students who had studied at the Indonesian School in Sabah-Sarawak as a population to be sampled. A sample of 170 students randomly consisted of SIKK, CLC in Sabah and CLC in Sarawak. Based on the results of the questionnaire, the majority of students had studied at the junior high school level, which was 93.5% and had studied at Malaysian Schools (Sekolah Kerajaan and HUMANA) in the amount of 74.7%. From 170 students, it was found that

52.4% wanted to return to Malaysia, 5.9% were willing if they received an offer to change citizenship to become Malaysian citizens, 27.1% wanted to work in Malaysia, and 94.7% wanted to work in Indonesia.

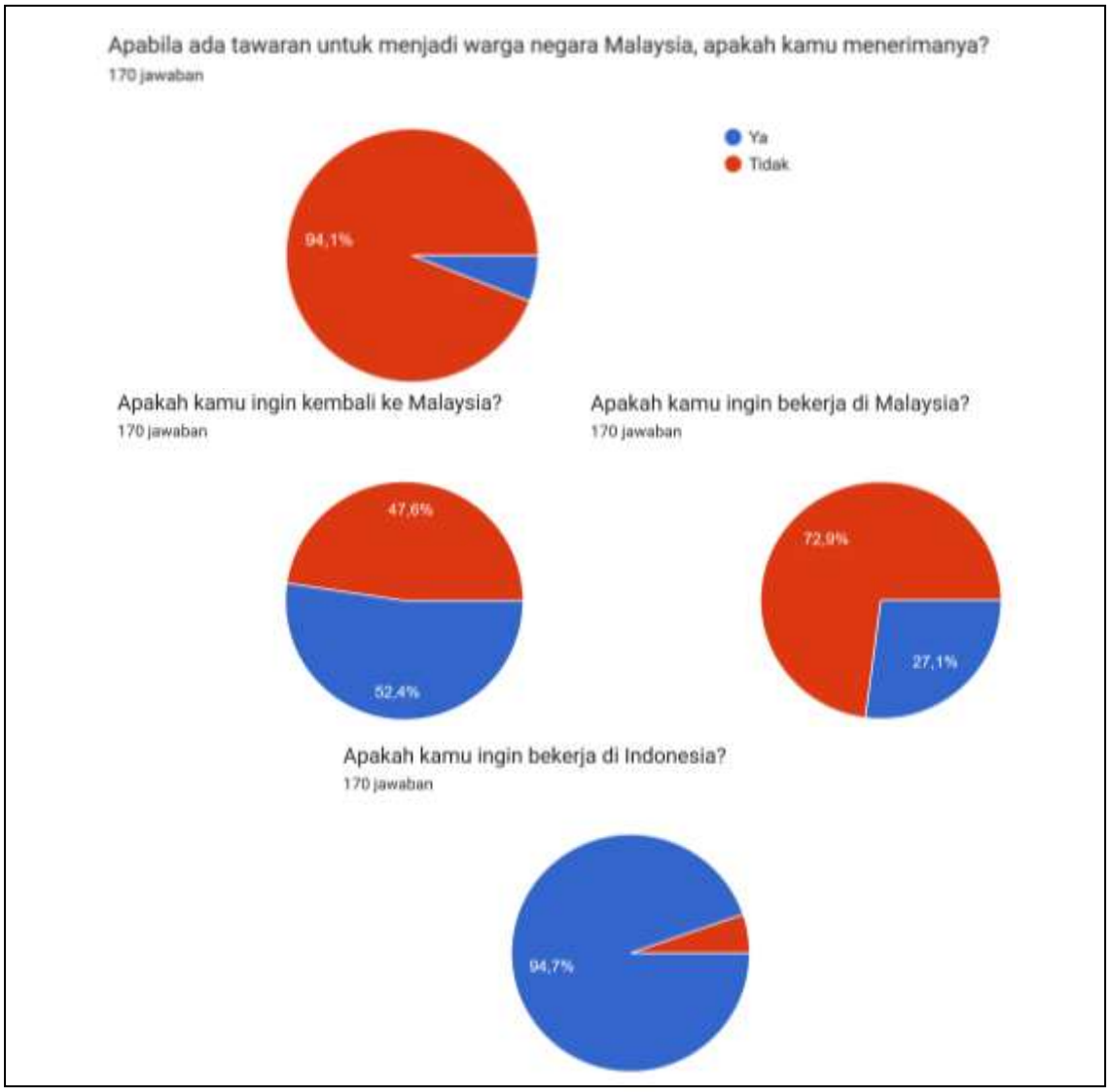


Figure 1. Questionnaire results

Figure 1 illustrates that the sense of nationality nurtured through the Indonesian school education system in *Sekolah Indonesia Luar Negeri* (SILN) is present in some students, although it has not yet reached full maturity. A love for the homeland must be continuously cultivated within the school environment. Indonesian schools abroad, particularly those in Sabah–Sarawak, are not permitted to conduct flag ceremonies or raise the Indonesian flag without authorization from the relevant authorities. In some Community Learning Centers (CLCs), full flag-raising ceremonies cannot be held; only flag unfurling is allowed. Despite these limitations, the national spirit within the school environment remains strong. Several efforts can be undertaken to strengthen this spirit, including singing the national anthem before activities begin, using Indonesian-language textbooks, participating in scouting programs, and organizing events such as the *Jambore Anak Indonesia di Malaysia* (JAIM).

Interviews conducted via Zoom with a teacher from one of the Community Learning Centers (CLCs) revealed that the learning materials used in CLCs are Student's Books imported directly from Indonesia. Although these materials align with the Indonesian national curriculum, the linguistic gap between the Indonesian language used in the textbooks and the Malaysian language commonly spoken by students in their daily lives presents a significant challenge. The teacher noted that many students struggle to fully comprehend the instructional language, which hinders their ability to engage with the subject matter, particularly in mathematics.

To explore this issue further, the researcher administered a diagnostic test to four randomly selected eighth-grade students from a CLC. The test items focused on the topic of *Sistem Persamaan Linear Dua Variabel* (SPLDV), specifically using question number ten from the junior high school exam administered in *Sekolah Indonesia Luar Negeri* (SILN). The questions were designed to reflect the structure and language of the textbooks currently in use.

Student responses were submitted via WhatsApp and analyzed based on indicators of mathematical problem solving skills according to Polya's theory. Preliminary results indicated that students had difficulty understanding the problems due to unfamiliar vocabulary and sentence structures. This language barrier not only affected their reading comprehension but also impeded their ability to construct mathematical models and carry out solution strategies effectively.

These findings highlight the importance of contextualizing learning materials to match students' linguistic backgrounds. In the context of Indonesian schools abroad particularly in regions like Sabah – Sarawak language adaptation and teacher mediated scaffolding are crucial to ensuring effective content delivery and meaningful learning outcomes. Some of the results of student work can be seen in Figure 2 below.

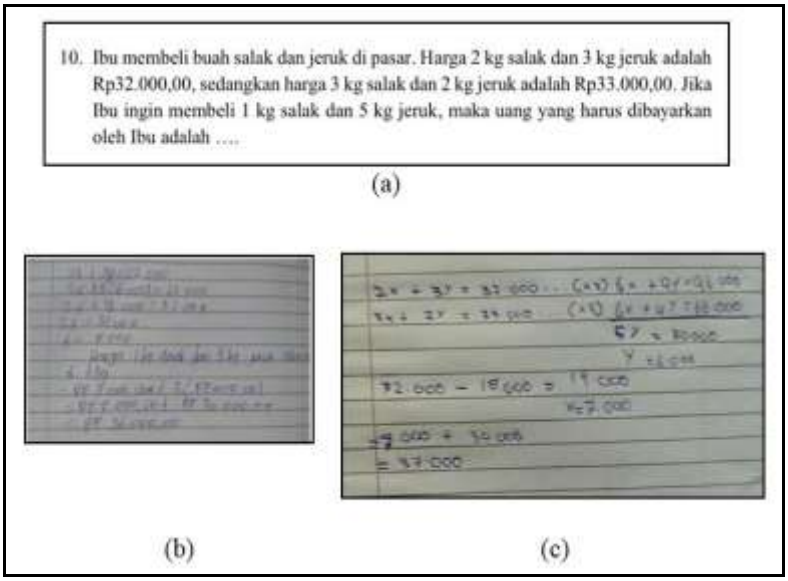


Figure 2. SPLDV problem solving ability test

Based on the results of the problem-solving ability test according to Polya's steps on the SPLDV material presented in Figure 2, information was obtained that there were students, namely Figure 2 (c) who could write down what was known, asked and solved the problem and there were students, namely Figure 2 (b) is not careful. The solutions made by students are in accordance with the stages of problem solving according to Polya. These stages are: (1) understanding the information that is known and asked from the problem (writing 2x+3y=3200 and 3x+2y=33000), (2) compiling a mathematical model and planning a problem-solving strategy (writing 2x+3y=32000

multiplied by numbers 3 and 3x+2y=33000 multiplied by number 2), (3) carry out problem solving according to plan, and (4) conclude answers, even though the writing is not precise (writing =7000+30000 and than =37000, the correct spelling is x+5y=7000+30000 and than x+5y=37000).

Based on the results of the questionnaire, information was obtained that the most difficult thing experienced by students when they first returned (lived) in Indonesia was mostly the language difficulty, which was 39.4%. The data obtained from the questionnaire stated that the most difficult thing experienced by students when they first returned (lived) in Indonesia was the language difficulty, which was 39.4%. For example, when they want to buy internet quota, the student uses the word "credit". Credit in Sabah language means pulse purchase, while in Indonesia it means loan. Another difficulty is using rupiah currency while in Indonesia. Students find it too expensive when making payments. For example, when a cashier tells you that the total spending is one hundred thousand. Students feel it is too expensive because one hundred thousand ringgit can be used to buy a certain brand of car. This is in line with the results of interviews with teachers, but not in line with the results of the students' problem-solving ability tests shown in Figure 2.

The two information obtained from interviews with teachers and tests on students contradict each other. In fact, students can work on questions, meaning that students understand the language used in student books. Researchers conducted interviews with the four students. Interviews were conducted using zoom media. The researcher displays the electronic student book material for class VIII in chapter 5, namely SPLDV starting on page 189. The SPLDV material contains mathematics in everyday life. The results of these interviews are that students have difficulty understanding the language used in the BSE book, some of which are as follows.

Figure 3. Students' difficulties in understanding words in student books

Students have difficulty reading Rp. 1,696,000.00 in the sentence shown in Figure 3 (a). Students are not used to using rupiah currency, so it is difficult when reading the rupiah currency value which consists of 7 digits and zero point zero (.00). In figure 3 (b), students do not know the meaning of “private lessons”, because students at CLC are not accustomed to taking “private lessons”. In figure 3 (c), students have difficulty understanding the type of work "bus agent". In Sabah "bus agents" are commonly referred to as "bus counters". In figure 3 (d), students have difficulty understanding the "purchase receipt", because in Sabah it is commonly called a "resit".

Researchers have found the conditions experienced by students related to the difficulty of using language in student books, but if students cannot understand the

language used in the student books in the SPLDV chapter, researchers think about the possibility of students being able to work on the questions presented in Figure 2 (a). The researcher then directed the students to solve contextual problems related to SPLDV. The questions are taken from the student's book on page 205 number 8. Students work on these questions when the interview using zoom media is still ongoing. Thus, researchers can see the activities carried out by students when working on the problem. The questions tested on students taken from the student book on page 205 number 8 are not much different from the questions given previously, which can be seen in Figure 2 (a). The following is a picture of one student's questions and answers.

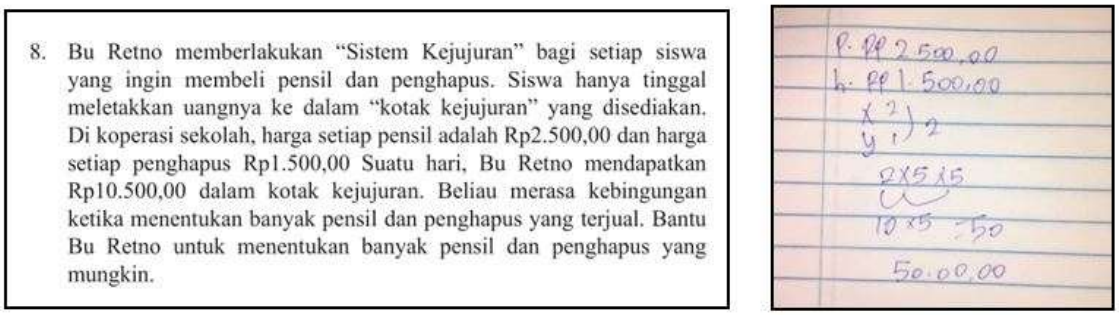


Figure 4. The results of the work of class VIII students

The results of student work presented in Figure 4 show that these students have difficulty understanding the problem. The researcher then asked questions with the following transcript.

P : "What do you know about this matter?"

S2: "Ma'am, I don't understand the meaning of your question."

P : "How can you solve the SPLDV test questions regarding the purchase of salak and oranges?"

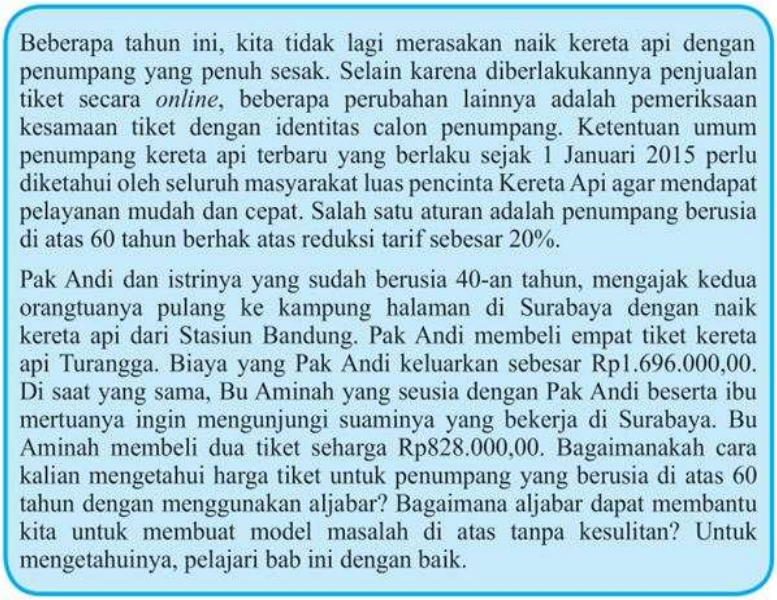
S1: "I was able to work on the problem because of the help of the online application, ma'am."

S2: "Me, too."

Based on the results of interviews with students through zoom media, information was obtained that students had difficulties in understanding the language used in student books. These difficulties are due to the different experiences of daily life, social, cultural, and environmental conditions with Indonesia.

The problem solving ability of students is low due to the different experiences of daily life, social, cultural, and environmental conditions with Indonesia. The daily life experiences of Indonesian students studying in Sabah-Sarawak are different from those of Indonesian students in Indonesia. These students rarely (in fact almost never) use rupiah currency, Indonesian language, and activities in their environment are not like in Indonesia. The flow of pragmatic philosophy states that learning mathematics is based on experiences in students' daily lives, and is said to be successful if students are able to overcome mathematical problems. Learning mathematics needs to use language, objects, and activities that are often encountered by students in their daily lives.

The student book used by the CLC school contains an introduction to Indonesia, meaning that the learning in the student book is a national lesson. The national lessons contained in the student book, for example, are on page 189. Students are introduced to cities in Indonesia called Surabaya and Bandung, and are also introduced to Indonesian currency and economic activities in Indonesia, namely the price of train tickets in Indonesia which can be seen on Figure 5 below.



Beberapa tahun ini, kita tidak lagi merasakan naik kereta api dengan penumpang yang penuh sesak. Selain karena diberlakukannya penjualan tiket secara *online*, beberapa perubahan lainnya adalah pemeriksaan kesamaan tiket dengan identitas calon penumpang. Ketentuan umum penumpang kereta api terbaru yang berlaku sejak 1 Januari 2015 perlu diketahui oleh seluruh masyarakat luas pencinta Kereta Api agar mendapat pelayanan mudah dan cepat. Salah satu aturan adalah penumpang berusia di atas 60 tahun berhak atas reduksi tarif sebesar 20%.

Pak Andi dan istrinya yang sudah berusia 40-an tahun, mengajak kedua orangtuanya pulang ke kampung halaman di Surabaya dengan naik kereta api dari Stasiun Bandung. Pak Andi membeli empat tiket kereta api Turangga. Biaya yang Pak Andi keluarkan sebesar Rp1.696.000,00. Di saat yang sama, Bu Aminah yang seusia dengan Pak Andi beserta ibu mertuanya ingin mengunjungi suaminya yang bekerja di Surabaya. Bu Aminah membeli dua tiket seharga Rp828.000,00. Bagaimanakah cara kalian mengetahui harga tiket untuk penumpang yang berusia di atas 60 tahun dengan menggunakan aljabar? Bagaimana aljabar dapat membantu kita untuk membuat model masalah di atas tanpa kesulitan? Untuk mengetahuinya, pelajari bab ini dengan baik.

Figure 5. Nationality in mathematics student books

This resulted in a dilemma between national learning and the condition of Indonesian students in Sabah-Sarawak. National learning applies Indonesian language habituation and cultural introduction in Indonesia, while students in Malaysia use Malaysian language and culture in everyday life. Based on the flow of Pragmatic philosophy, the understanding of mathematical concepts of Indonesian School Students in *Sekolah Indonesia Luar* Negeri (SILN) is based on their experience. This problem affects the mathematical problem solving ability of Indonesian School students in Sabah-Sarawak based on indicators on problem solving steps according to Polya.

CONCLUSIONS AND SUGGESTIONS

Based on the flow of Pragmatic philosophy, mathematics learning for Indonesian School Students in *Sekolah Indonesia Luar Negeri* (SILN) needs to be adapted to the environment the students are in. This adjustment can affect the high or low ability of students' mathematical problem solving based on Polya's theory. National mathematics learning still needs attention, especially for students who are abroad. Suggestions for these problems are the existence of student books on mathematics learning that use two languages (bilingual), namely Indonesian and the language used by students daily, concrete objects and activities according to the experiences of students in Sabah-Sarawak. Thus, learning mathematics can be easily understood by students. Especially in solving mathematical problems based on Polya's theory according to the flow of Pragmatic philosophy without eliminating national learning.

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