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Development of Mathematics Teaching Materials in the Context of Land Transportation Tickets for High-Level Thinking

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ABSTRACT

The development of mathematics teaching materials in the context of land transportation tickets is essential because it is close to participants' daily lives and includes comparative materials on direct proportion, which can be used to optimize high-level thinking. This research aims to develop mathematics teaching materials in the context of land transportation tickets that are valid, practical, and have a potential effect on high-level thinking skills. The method employed by the development study includes preliminary and formative evaluation stages. The subjects of this study are students at SMP Negeri 3 South Pemulutan and SMP Negeri 47 Palembang. Data collection techniques use walkthroughs, interviews, observations, and tests. Qualitative descriptive techniques were used to analyze the data obtained. The results of expert validation show that the developed teaching materials are deemed valid in terms of content, construction, and language. The small group stage demonstrates that the teaching materials are practical, as students do not encounter difficulty using them during the learning process. The results of the field test showed the potential impact of teaching materials on students' high-level thinking skills, as measured by indicators of analysis, evaluation, and creation. This research produces mathematics teaching materials in the context of land transportation tickets that are valid, practical, and have the potential to foster high-level thinking in the ability to analyze, evaluate, and create. It is expected to be used in learning to improve students' high-level thinking skills through the context of land transportation tickets.

Keywords: Context, Higher Thinking, Teaching Materials

ABSTRAK

Pengembangan bahan ajar matematika konteks tiket transportasi darat penting karena dekat dengan kehidupan sehari-hari peserta dan mengandung materi perbandingan senilai sehingga dapat digunakan untuk mengoptimalkan berpikir tingkat tinggi. Penelitian ini bertujuan untuk mengembangkan bahan ajar matematika konteks tiket transportasi darat yang valid, praktis dan memiliki efek potensial terhadap kemampuan berpikir tingkat tinggi. Metode yang digunakan development study dengan tahapan preliminary dan formative evaluation. Subjek penelitian ini adalah peserta didik di SMP Negeri 3 Pemulutan Selatan dan SMP Negeri 47 Palembang. Teknik pengumpulan data menggunakan walkthrough, wawancara, observasi, dan tes. Data yang diperoleh dianalisis dengan teknik deskriptif kualitatif. Hasil validasi oleh para ahli menunjukkan bahwa bahan ajar yang dikembangkan dinyatakan valid dari aspek konten, konstruk, dan bahasa. Tahap small group menunjukkan bahwa bahan ajar bersifat praktis karena peserta didik tidak mengalami kesulitan dalam menggunakannya selama pembelajaran. Hasil field test memperlihatkan adanya efek potensial bahan ajar terhadap kemampuan berpikir tingkat tinggi peserta didik pada indikator analisis, evaluasi, dan kreasi. Penelitian ini menghasilkan bahan ajar matematika konteks

tiket transportasi darat yang dinyatakan valid, praktis dan memiliki efek potensial untuk berpikir tingkat tinggi terhadap kemampuan analisis, evaluasi dan kreasi. Diharapkan dapat digunakan dalam pembelajaran untuk meningkatkan kemampuan berpikir tingkat tinggi peserta didik melalui konteks tiket transportasi darat.

Kata Kunci: Konteks, Berpikir Tingkat Tinggi, Bahan Ajar

INTRODUCTION

Higher-level thinking is a fundamental aspect of learning that continues to evolve (Kim, 2025). PISA questions are also designed using high-level thinking skills (Wijaya et al., 2018). Additionally, the curriculum requires students to employ high-level thinking skills in problem-solving (Irfan et al., 2022). However, in practice, schools have not fully implemented it in learning (Damayanti et al., 2023). In addition, the implementation of high-level thinking skills faces various challenges, including students' ability to apply them (Azid et al., 2022) and difficulties in compiling questions about high-level thinking skills (Jailani et al., 2023). Efforts are needed to ensure that high-level thinking skills are implemented optimally in learning.

This ability has a crucial role and is integrated into curriculum and classroom assessments (Setyaningrum et al., 2024; Zana et al., 2024). Teaching materials that can measure students' high-level thinking skills are needed. In the learning process, high-level thinking skills can be trained (Susanti & Arifin, 2022). The development of teaching materials for high-level thinking can help improve students' abilities (Pane et al., 2021; Purba et al., 2022; Rofiq & Nurwulandari, 2021). Therefore, the development of teaching materials that focus on high-level thinking skills can encourage students to improve their abilities during the learning process. Higher-level thinking skills can be used in learning through a context close to students' daily lives. The use of context can meaningfully build students' understanding by using real situations.

The development of teaching materials using relevant contexts can facilitate higher-level thinking (Malalina et al., 2023). Context is an excellent example to be used in learning and is one of the efforts to attract students' interest in education (Zulkardi et al., 2021). In addition, context can be used as a starting point for learning mathematics by relating concepts to daily life activities, making them more relatable (Malalina et al., 2021, 2024). The use of context can support the development of students' high-level thinking skills (Gembong et al., 2023). In addition, one of the mathematical characters is an abstract object (Widodo et al., 2025). Mathematics is closely related to real life, which is presented verbally and visually in the form of images, photographs, diagrams, and visuals (Widodo et al., 2024). Thus, the development of mathematics teaching materials using contextual approaches enhances students' involvement and understanding in connecting mathematical concepts with their daily lives. The development of teaching materials using context is an effort to improve high-level thinking skills.

The results of Mawaddah et al. (2021) suggest that the development of learning tools within a wetland environment, oriented towards high-level thinking skills, can improve students' high-level

thinking skills. Kristantoa & Setiawan (2020). The development of Higher Order Thinking Skill questions using a rural context enables students to think at a higher level. Rismawati et al. (2022) found that students' mistakes in answering questions occur in the indicators of evaluation and creation, while in analytical skills, students have shown good abilities. Malalina (2023) suggests that Mathematics teaching materials in the maritime context can enhance students' high-level thinking skills. The results of the study show that developing teaching materials across various contexts can support the improvement of students' high-level thinking skills.

One context that can be used is land transportation tickets, especially tuslah tickets, which have additional prices that apply during national holidays. In fact, this context reflects real economic activities that are relevant to mathematical material and have a high potential for high-level thinking, such as analysis, evaluation, and creation. Therefore, the context of the ticket has the potential to be developed as teaching material that is not only relevant in context but also has an impact on the ability to think at a higher level. This study integrates land transportation tickets, especially tuslah tickets, as a context in learning to determine students' high-level thinking skills. The context of land transportation tickets is essential because it is close to participants' daily lives and contains valuable comparative material that can be used to optimize high-level thinking. Based on the results of previous research, no one has examined the context of land transportation tickets, especially those issued during national holidays, such as Tuslah tickets. The context of the ticket can be used in the learning process, which is developed in the form of teaching materials to measure high-level thinking skills.

The purpose of this research is to develop mathematics teaching materials in the context of land transportation tickets for valid and practical high-level thinking, and to know the potential effects of teaching materials in the context of land transportation for high-level thinking on the ability to analyze, evaluate, and create.

METHOD

The research method uses a design research development study type. Development research focuses on two stages, namely preliminary and formative (Tessmer, 1998; Zulkardi, 2002b; Zulkardi et al., 2021). The Preliminary Stage is a preparatory stage that involves identifying material in accordance with the curriculum and the context of the land transportation ticket used, followed by a literature review related to the context and the development of high-level thinking skills, and the design of teaching materials in the form of reading materials, the preparation lesson plan, student worksheets, and questions.

The formative stage consists of self-evaluation, expert review, small-group testing, and field testing. At the self-evaluation stage, the researchers identify errors and assesses the feasibility of the teaching materials before they are validated through expert review. The expert review stage is carried out concurrently with the one-to-one stage. In the expert review stage, the teaching materials were evaluated and validated by three experts; two teachers from SMP Tamansiswa Palembang and one teacher from SMP Negeri 47 Palembang. Validators assess content, construct, and language to obtain comments and suggestions for improvement. In the one-to-one stage, a trial was conducted

involving three students from SMP Negeri 41, SMP Negeri 17, and SMP Tamansiswa, with one student from each school in the city of Palembang. These students have different abilities, aiming to obtain responses related to the teaching materials that have been developed. The results of the expert review and the revised one-to-one resulted in a second prototype.

The next stage involved a small group of six students from SMP Tamansiswa Palembang who were not the subjects of the research. These students were selected based on the teacher's recommendation to conduct a learning simulation using lesson plans. At the end of the lesson, students were given questions to assess their high-level thinking skills. Small groups were conducted to evaluate the practicality of the teaching materials and to revise and improve them into a third prototype. During the implementation of the small group, the research team observed, took field notes, and conducted interviews to gather the data on student's responses. The final stage was a Field Test to determine the potential effect of teaching materials developed for high-level thinking, involving 60 students from SMP Negeri 3 South Pemulutan (29 students) and SMP Negeri 47 Palembang (31 students).

The data collection technique employed in this study involves walkthroughs, which include both written and oral comments, as well as expert assessments in the form of suggestions and comments on the validation sheet. This study utilizes validation sheets to assess the lesson plan, student worksheet, and test questions. Interviews were conducted in one-on-one and small-group settings. Interview indicators in one-on-one and small-group settings utilize indicators of ease in solving problems that require high-level thinking skills. Interviews at the small group stage involve researchers with small groups. The interviews in this study were conducted in an unstructured manner, as the idea of questions already existed; however, it is possible that the results could be developed to be more in-depth and comprehensive. Observations were conducted on students during the learning process to see the implementation of learning related to the potential effects of the teaching materials developed. The documentation in this study is based on the students' answer sheets. The test is used to measure a student's high-level thinking ability. The data analysis techniques that have been collected are all analyzed in a qualitative descriptive manner.

Valid teaching materials can be seen from observation sheets, practically from students completing the worksheet and answering the questions without significant obstacles, and from potential effects, such as students' ability to analyze, evaluate, and create student worksheets and test questions.

RESULT

The implementation of development research carried out includes the preliminary and formative evaluation stages. The context used is a land transportation ticket, specifically a bus ticket for travel. The results of each stage in the study are explained as follows:

Preliminary Design

The preliminary design stage begins with the development of teaching materials, including lesson plans, student worksheets, and questions that promote high-level thinking. The development

stages are carried out in a structured manner, starting from lesson plans, student worksheets, and questions that promote high-level thinking. In this case, the learning material used for development is a comparison of values. This material is used because it aligns with mathematical concepts, has a connection to daily life, and can be applied to develop high-level thinking skills. The higher levels of thinking include analysis (C4), evaluation (C5), and creation (C6). The student worksheets display in the preliminary design stage which is presented in Figure 1.

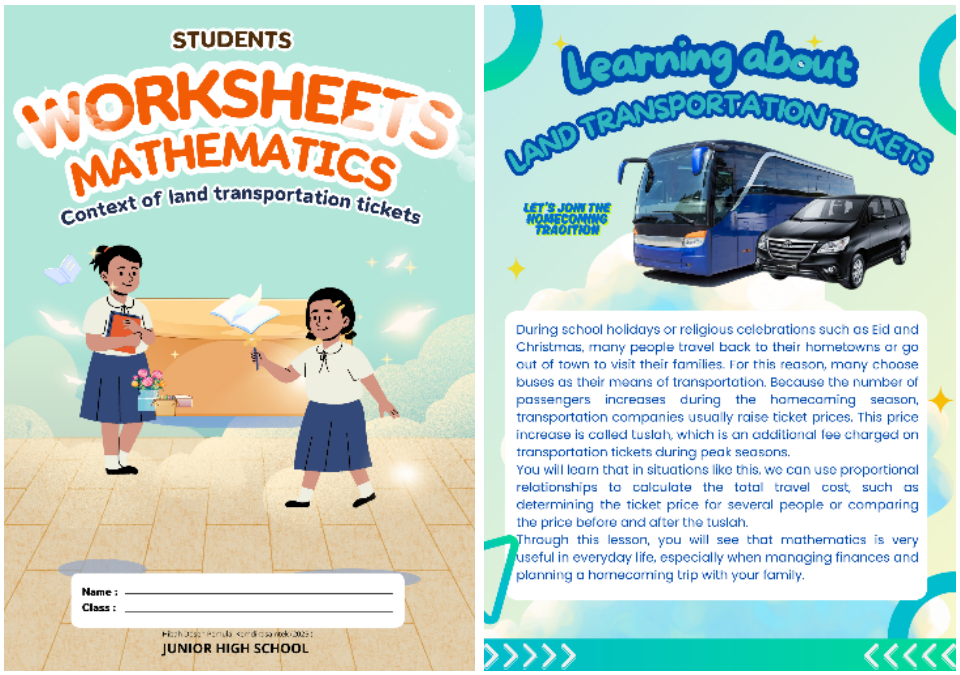


Figure 1. Initial Overview of the student worksheet

Based on Figure 1 shows the student worksheets developed by the researchers in the context of land transportation tickets. This student worksheets is designed to support the learning of comparative materials in junior high schools in accordance with the independent learning curriculum. In the initial part, this student worksheet is equipped with reading materials about tuslah tickets, so that students know the relationship between mathematical concepts and daily experiences, especially during holidays or homecoming.

Questions on Higher Level Thinking Ability

The high-level thinking skills questions developed in this study were administered at the end of the learning process. Each stage of high-level thinking questions is presented in the form of description questions. Each question that develops high-level thinking skills is set within the context of land transportation tickets. The three questions developed are nearly identical to those in the student worksheets. The questions developed are in accordance with high-level thinking skills. The problem, in the form of a description, has been developed by researchers to facilitate high-level thinking. Each stage of this question utilizes the context of land transportation tickets relevant to daily life, directing students to analyze, evaluate, and create responses to the questions that have been developed.

Formative Evaluation

At the formative evaluation stage, which involves developing teaching materials for the context of land transportation tickets, the process consists of self-evaluation, expert review, one-on-one sessions, small group discussions, and culminates in a field test.

Self Evaluation

The self-evaluation stage is carried out. This evaluation and revision aim to identify errors and shortcomings in the developed teaching materials, so that they can be addressed before being assessed by validators. The results of the self-evaluation are referred to as the first prototype, which highlights some shortcomings. In the lesson plan, it is necessary to improve sentences at the stages of learning implementation to be more transparent and systematic. In the student worksheets, there are errors in sentence writing that affect the clarity of instructions, as well as image illustrations that are not visually optimal, and image resolution that is still low. Meanwhile, there are still sentences that need correction, and there are still writing errors.

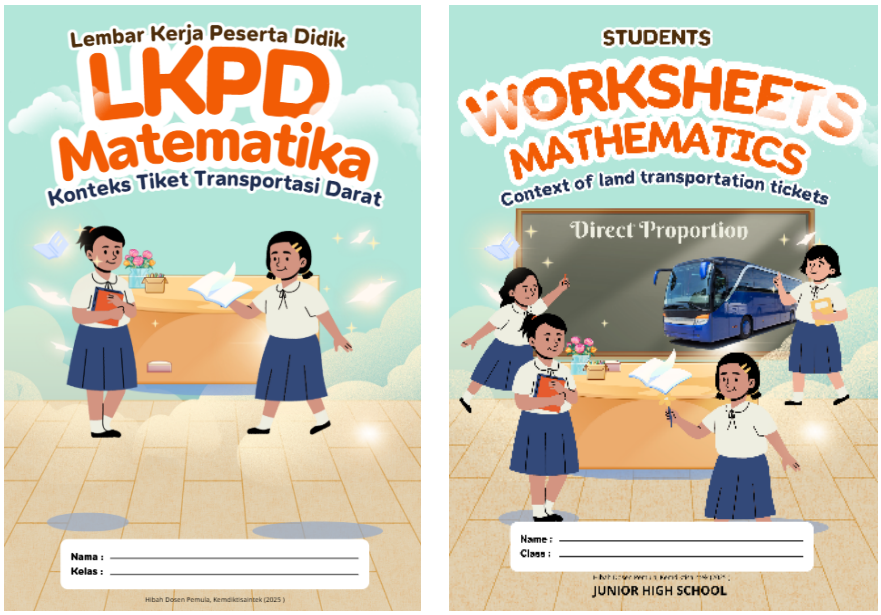
Expert Review

This stage involves assessing teaching materials to validate them with experts' input. The validation process consists of providing suggestions or comments on the teaching materials created to ensure their feasibility. In this case, the experts review commented on the lesson plan, explicitly noting that the structure of the lesson plan is good and that it can be used because it utilizes teaching materials to assess high-level thinking skills. The learning steps are not clear; they need to be explained in more detail. The results of the validation sheet on the lesson plan for the three experts concluded that the lesson plan is suitable for trial after revision. Continue table 1 is the result of validation comments on the student worksheets.

Table 1. Comments on the Validation of the Student Worksheets

Validator	Commentary
1	The structure of the student worksheets is good; it is only recommended to add reflection at the end of the activity. Add the education level for the use of student worksheets.
2	The student worksheets developed can be tested on students because it uses daily life situations. The cover section needs to be added with some context images and learning materials.
3	The instructions for using student worksheets require further clarification.

Table 1 presents an expert comment indicating that the student worksheets developed is good in terms of content, construct, and language, but still require improvement in aspects of reflection and clarity of instructions. This input provides a crucial basis for researchers to revise and improve the student worksheets before conducting further trials. On the student worksheets validation sheet, the three experts concluded that student worksheets are suitable to be used after revision. Regarding the revision decision related to the material developed, specifically the last 10 minutes before the lesson closed, the teacher added a reflection activity by asking the question, 'What are the benefits of learning a comparison of value in the context of land transportation tickets?' Additionally, revisions have been made to the student worksheets cover, as shown in Figure 2.



(a) (b)

Figure 2. (a) before revision, (b) after revision on the cover

In Figure 2(a), the cover does not contain information about the level of education. The cover only displays the title without any special information related to the level of education, learning materials, or context illustrations used. After the revision in Figure 2(b), the cover section has been supplemented with information on the appropriate level of education for junior high school students. Additionally, a description of the learning material, including a comparison of values, as well as illustrations of images representing the context, is provided.

On the next sheet, a learning objective is added that contains information about the expected achievement after using the teaching materials, along with additional details at the beginning, such as information on educational levels and learning objectives. The addition of information on teaching materials provides a clearer understanding of how to use them to achieve the desired outcomes. The comments on the question of high-level thinking ability are presented in the following Table 2.

Table 2 Question Validation Comments

Validator	Commentary
1	The instructions for solving the question number 1 are not clear
2	The questions developed can be tested on students because they can measure high-level thinking skills.
3	Instructions for using fewer clear questions need to be explained in more detail.

Based on Table 2 presents a validator's comment on the question of high-level thinking ability. Based on these comments, it can be concluded that the developed question is capable of measuring high-level thinking ability and is worthy of being tested after revision. However, there are still weaknesses in the technical aspect, especially the clarity of the instructions for solving the problem. Therefore, revisions to the instruction section are essential so that the questions are easier to understand and can be readily tested by students.

One-to-One

The implementation of one-to-one is carried out in conjunction with an expert review. The one-to-one stage is conducted individually with students of high, medium, and low abilities through direct interaction between researchers and students. This aims to identify the difficulties experienced by students in completing student worksheets and answering the questions. Students are asked to read the problems in the student worksheets and then retell and explain in their own language to ensure their understanding of the content of the student worksheets. Furthermore, students are asked to complete two activities in each student worksheet and answer the questions. Based on the results of the student worksheet work, it was found that students need guidance to understand the problem. The results of the information obtained in one-on-one sessions include errors in word selection and unclear descriptions of the explanations of the problems; therefore, the researchers provide guidance on how to address them.

The results of the one-to-one implementation demonstrated that students were able to analyze problems effectively. Students can gather relevant information, elaborate on problems, and devise appropriate solutions. Additionally, students can create new strategies by combining previously acquired data. The result of the revision at the one-to-one stage is an instruction on the problem in question where an error has been made.

Small Group

In the small group stage, it is carried out in small groups selected based on the recommendations of mathematics teachers, considering academic abilities categorized as low, medium, and high. The composition of these abilities is expected to provide a comprehensive picture of the suitability of teaching materials for students with different ability levels. Figure 3 is the result of students' answers to small group activities, two analysis indicators.

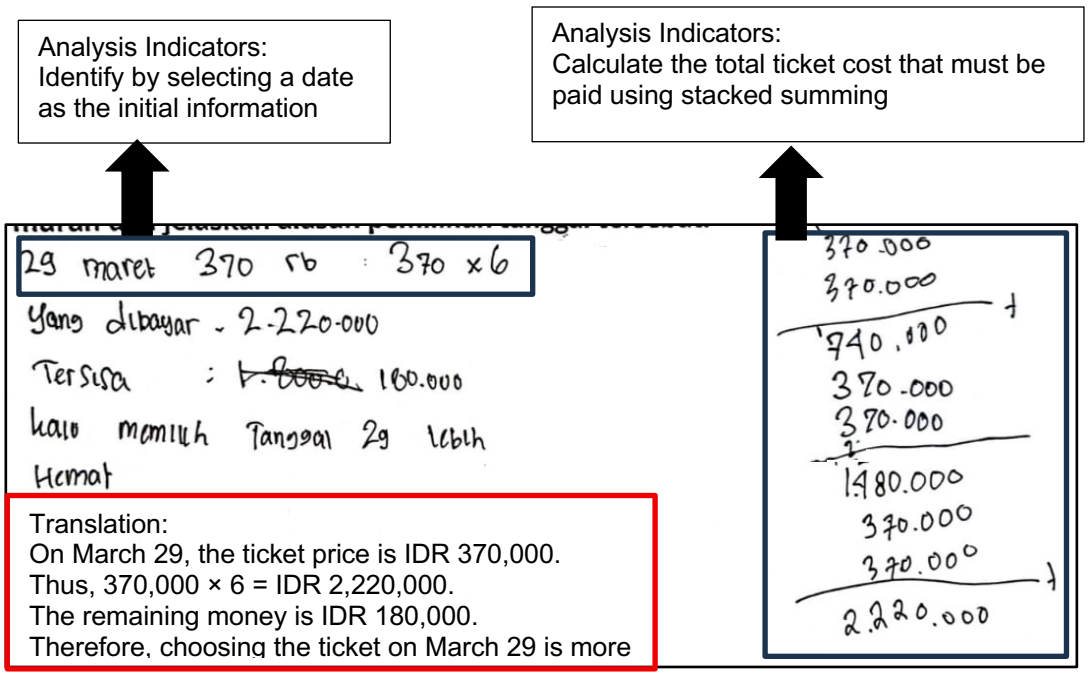


Figure 3. Student Answer Indicator Analysis

Figure 3 shows students' responses at the small-group stage for the analysis indicators. Students are asked to identify important information, connect available data, and determine appropriate completion steps. The answers shown in the Figure 3 illustrates how students can apply their analytical skills to understand the problem's context and describe solutions systematically.

The small group made a practical contribution to the learning process, as evidenced by students' ability to use student worksheets and ask questions that require high-level thinking. However, during the small-group stage, issues were identified that needed correction, such as sentence-writing errors in the student worksheets and unanswered questions. Therefore, revisions to the material are required. Overall, the small group stage has demonstrated that the teaching materials developed are practical in helping students think at a high level, including the ability to analyze, evaluate, and create.

Field Test

In the Field Test stage, the first meeting for student worksheets (Activity 1), the second meeting for student worksheets (Activity 2), and the last meeting with students to answer questions about high-level thinking skills. In the first and second meetings, learning was facilitated through small group discussions comprising 4-6 students, followed by class discussions. In this activity, the researchers act as facilitators to help students achieve the learning goals outlined in the prepared lesson plans. The results of students' answers to Activity 1 of the analysis indicator are presented in Figure 4, which shows how to identify important information from the question.

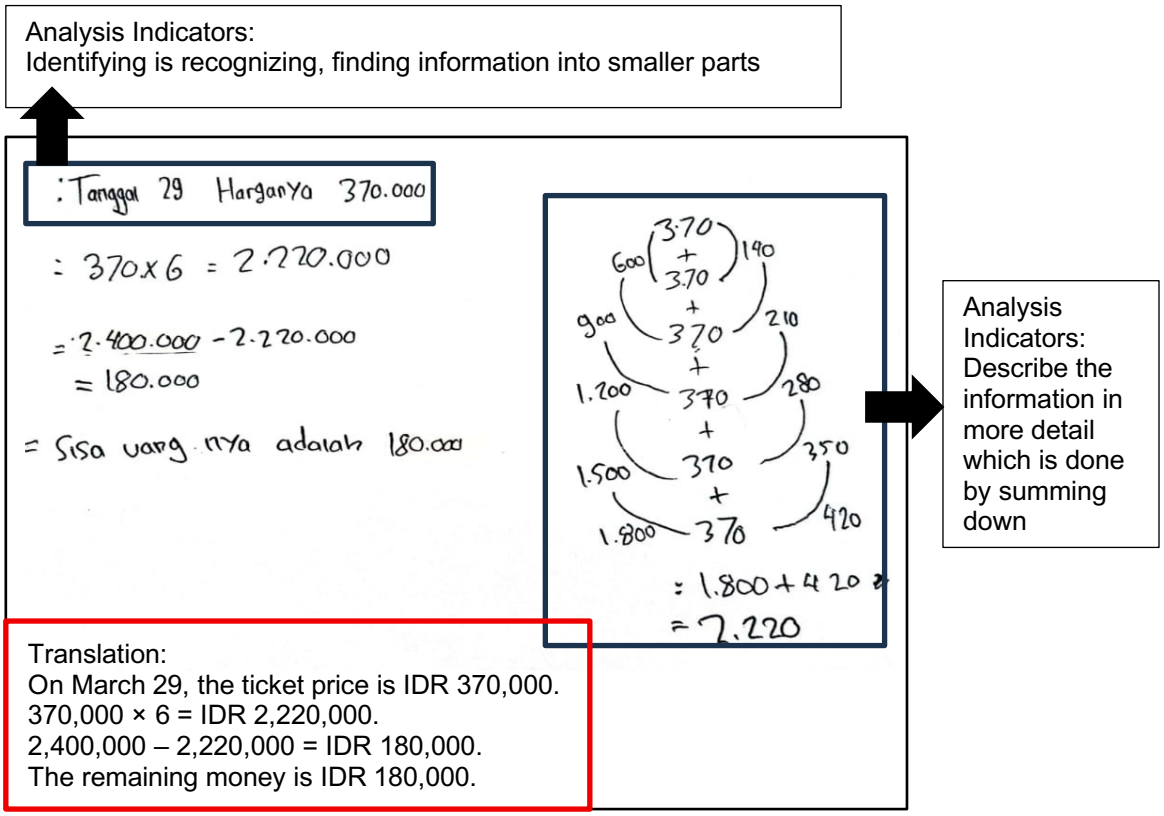


Figure 4. Students' Answers to the Field Test Activity 1 Analysis Indicator

Based on Figure 4 above illustrates that students have been able to analyze the questions by first identifying, recognizing, and extracting critical information, specifically the selection of departure dates and fees paid. After that, students describe the information in more detail by calculating the total cost through top-down summing until the total cost that must be paid is obtained. This process represents the achievement of analysis indicators, which can be observed in students' ability to understand the data, separate key information, and connect parts to produce the correct answer.

Furthermore, the results of students' high-level thinking ability with evaluation indicators are presented in Figure 5.

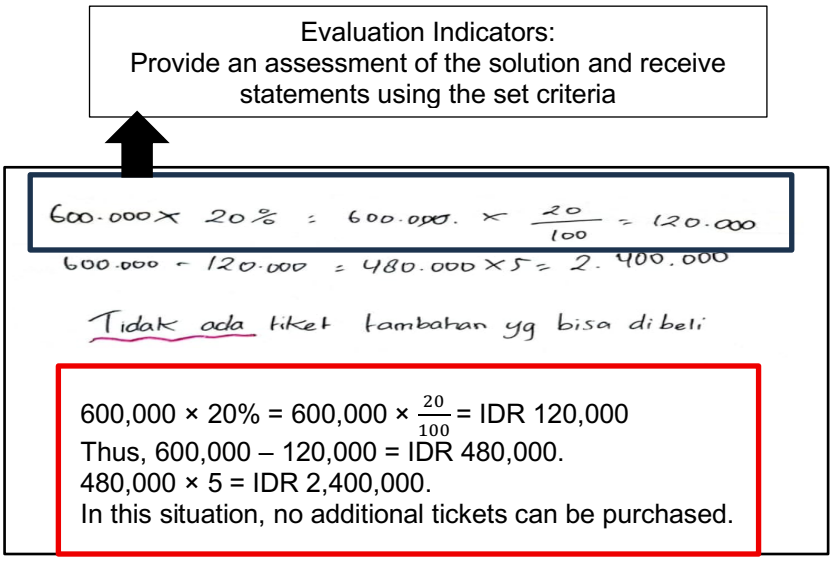


Figure 5. Results of Students' Answers to the Field Test Activity 1 Evaluation Indicator

Based on Figure 5 shows that students have been able to evaluate the solutions offered by providing an assessment of the problem. Students receive a statement based on the set criteria, specifically using discounts for ticket purchases. Evaluation indicators can be said to be achieved because students not only calculate but also assess and make decisions according to the criteria. Figure 6 below shows the creation indicators.

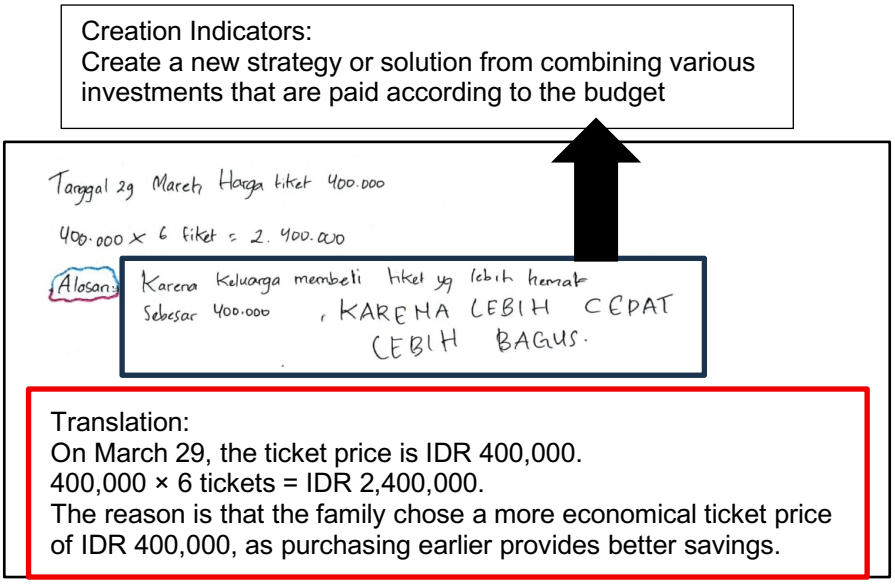


Figure 6. Results of Students' Answers to the Field Test Activity 1 Creation Indicator

Figure 6 shows that students have been able to create effective strategies and solutions by combining available information, resulting in ticket prices that align with the budget. Students make strategies to keep the trip efficient without exceeding the budget. Based on the results of the indicators, the students concluded that a faster departure is a better choice, provided it remains within the existing budget. This demonstrates the achievement of creative indicators that effectively generate new ideas.

At the last meeting, students worked on questions as part of the learning evaluation material. This question is designed to assess students' understanding of equivalent comparison material through the context of land transportation tickets and evaluate the achievement of the indicators that have been developed. Figure 7 is the result of students' answers to question 1.

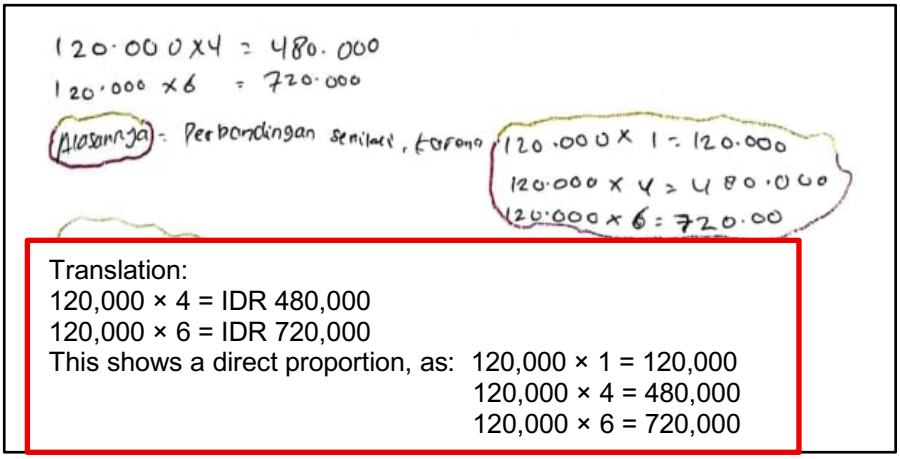


Figure 7. Students' Answers during the Analysis Indicator Test

In Figure 7, students can analyze the information by first identifying the critical details, such as the price of one ticket. Then, they deconstruct the calculation by multiplying the price of the ticket to determine the costs of four and six tickets.

DISCUSSION

The teaching materials developed are deemed valid based on the results of the expert review stage, following revision in accordance with the suggestions and comments provided on the validation sheet. Putri and Zulkardi (2020) and Zulkardi (2002a) state that the validity of teaching materials can be assessed by the comments of experts, which can serve as a basis for revising and improving the developed teaching materials. The same point was also made by Arifin et al. (2017). Valid teaching materials are obtained from the responses given by the validator during the validation process. Additionally, validation sheets can be used to collect validity data (Sari et al., 2023).

Validity can be seen from the validation sheet filled out by validators based on content, construct and language. The lesson plan developed by the researchers is declared valid based on the results of the validation sheet from the expert review stage. The validator fills out the validation sheet to assess the lesson plan, evaluating it on content, construct, and language. From a content perspective, the lesson plan components are designed to conform to the lesson plan format, the learning objectives align with the independent learning curriculum, and the chosen materials are relevant to the students' ability level. From the construction aspect, the context of land transportation

tickets is considered worthy of being used as material in learning. The learning sequence is considered systematic, with sufficient time allocation at each stage. In terms of language, the sentences used in the lesson plan are in accordance with the applicable spelling rules and do not cause ambiguity. Based on the lesson plan validation sheet, the validator concludes that this lesson plan is worthy of being tested with revisions. Thus, the lesson plan prepared has met the valid criteria based on the results of expert assessment.

In the student worksheets, experts provide comments and suggestions for improvements to the student worksheets that have been developed. These included the need to add reflections at the end of the activity, mentioning the education level of student worksheets users, clarifying student worksheets instructions, and adding context images and learning materials to the cover. Nevertheless, experts consider student worksheets feasible for piloting with students because it uses real-life situations as a context that is close to students' experiences. Based on this assessment, it can be concluded that student worksheets has met valid criteria in terms of content, construct and language. In terms of content, the material aligns with the independent curriculum and employs a straightforward sentence structure, making it easy for students to understand. From the language aspect, LKPD has used the context of land transportation tickets that are relevant and can be used as learning materials for junior high schools. The sentences used are in accordance with the EYD, the use of punctuation is appropriate, and does not cause ambiguity. From a constructional aspect, LKPD has an attractive appearance, equipped with images that support high-level thinking skills. There is also a compatibility between the selected context and the equivalent comparison material, making it easier for students to relate concepts to real-life situations. All suggestions given by experts have been followed up on and improved, so that student worksheets is declared valid and suitable for use in learning.

Regarding the question of high-level thinking ability, the reviewer's comments noted that the instructions for solving question number 1 were unclear. Based on this input, the researchers have made improvements by clarifying the instructions so that students can more easily understand the steps to solve the problem. From a content perspective, the questions align with the independent curriculum, being simple, which makes it easier for students to understand the problem. From the construction aspect, the question of using the context of land transportation tickets can be used as a source for high-level thinking skills. The problems presented include indicators of analysis, evaluation and creation. The student worksheets is prepared with context problems that are close to daily life. In the terms of language, Question Test is developed by using language that is in accordance with the EYD rules; sentences are unambiguous and easy to understand for students.

After correcting the suggestions and comments from the expert review, it was confirmed that the question regarding high-level thinking ability in the context of land transportation tickets was valid. Based on the content aspect, the questions developed are in accordance with the independent learning curriculum and formulated clearly. From a construction aspect, the questions already require high-level thinking skills, namely analysis, evaluation, and creation, using relevant contexts. The language of the questions is well arranged so that it does not cause double meanings. Even the curriculum emphasizes the use of high-level thinking skills in mathematics learning, as well as the

application of daily life contexts and collaborative learning (Meryansumayeka et al., 2019; Zulkardi & Putri, 2020).

The small group stage is used to assess the practicality of the teaching materials that have been developed. During the group learning process at this stage, students do not experience difficulties in solving problems in the student worksheets. This can be seen from the results on the student worksheets and Question answer sheets, which show that students have ease in using teaching materials and can analyze, evaluate, and create problems effectively. In addition, learners can also identify relevant information, outline problems and develop appropriate solutions. Practicality can be seen in the absence of difficulties experienced by teachers, students, and other users in using products (Nieveen, 1999). Practicality refers to the ease of use of teaching materials during learning, allowing students to answer and solve problems in LKPD (Effendi et al., 2019). In addition, practicality instruments can be obtained using student responses (Hiltrimartin et al., 2022).

Field tests are used to determine the potential effects of mathematics learning teaching material products in the context of land transportation tickets. Regarding the learning outcomes of Meetings 1 and 2, during the learning process, it was observed that students were enthusiastic about solving problems in student worksheets. This is in accordance with the results of Arifin et al. (2021), which state that students are excited when they can describe teaching materials that are easy to use, meaningful, and interesting, thereby affecting learning outcomes. Mathematics learning, using the context of land transportation tickets in junior high schools' level, has a potential effect on high-level thinking skills, namely analysis, evaluation, and creation. The findings of this field test indicate that students have successfully analyzed, evaluated, and created questions based on the ones given during the test. The potential effect on high-level thinking skills is evident when students complete LKPD and related questions (Malalina et al., 2023). In addition, the potential effect can be observed in students' arguments when solving the problems (Ndiung & Jediut, 2020).

The implication is that these teaching materials are expected to be used in learning to improve students' high-level thinking skills through the context of land transportation tickets. By presenting real situations such as ticket price calculations, travel cost comparisons, and analysis of fare changes in the homecoming season, students can be trained to analyze information, evaluate options, and create more meaningful solutions.

CONCLUSION

This research produces mathematics teaching materials in the context of land transportation tickets that are declared valid, practical, and have the potential to foster high-level thinking in the ability to analyze, evaluate, and create. Validity is obtained through expert review, which involves assessing the content, construct, and language in the lesson plan, student worksheets, and questions. In the one-to-one stage, the results of the students' answers to the student worksheets and Questions showed that the students were able to understand the problems presented. This can be seen in the students' ability to analyze, evaluate, and create. At the small group stage, it proves that the teaching materials developed are practical because, during the learning process, students can solve the problems in the student worksheets and questions without experiencing significant

obstacles. Furthermore, at the field test stage, it was obtained that mathematics teaching materials in the context of land transportation tickets for high-level thinking have a potential effect on the ability to analyze, evaluate and create. The potential effect can be seen in the students' ability to analyze, evaluate, and create student worksheets in two meetings, with a description of the different contexts of land transportation tickets for each meeting, including ticket prices, number of passengers, purchase time, and additional costs per distance travelled. The third meeting concluded with participants working on three description questions that were given during the field test.

DECLARATION OF THE USE OF AI

Statement: during the preparation of this work, the author did not use AI services, except for the use of basic tools such as Google Translate and Grammarly which were used to check grammar and spelling.

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