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Development of Teaching Materials on Money and Banking Based on Problem-Based Learning to Improve Problem-Solving Skills in Grade X Students

Arroyan Anugrah Ramadhan Wibowo[1], Annisya[2]

[1] Department of Development Economic State University of Malang ; arroyan.anugrah.200431@studenta.um.ac.id
[2] Department of Development Economic State University of Malang ; annisya.fe@um.ac.id

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ABSTRACT

Economics education at the secondary school level has a strategic role in equipping students with financial literacy, critical thinking skills, and qualified problem-solving skills. Unfortunately, specific material such as Money and Banking is often considered difficult and boring for students due to the lack of contextual delivery methods. Answering these challenges, this study developed a Problem-Based Learning (PBL)-based teaching module intended for grade X students at the Daarul Ukhuwah Islamic Boarding School Malang. Through the Research and Development (R&D) method, this research aims to compile modules, test their validity, and assess their effectiveness in improving student competence. The development process involves the stages of needs analysis, design, expert validation, and field trials using questionnaire instruments and evaluation tests. The results of the study show that this PBL module is declared very feasible and valid by experts with the "excellent" category. In addition, the application of this module has proven to be effective in improving students' problem-solving skills, which can be seen from the achievement of an average score above the 75 completeness standard. Not only from the cognitive side, this module also succeeds in triggering students' learning motivation and active involvement in group discussions and real-life case study analysis. In conclusion, the PBL module on money and banking material is an effective teaching material innovation to increase students' interest and readiness to face future economic challenges. This product is highly recommended as a reference for quality teaching materials, both in Islamic boarding schools and other secondary schools.

Corresponding Author:
Arroyan Anugrah Ramadhan Wibowo
Department Of Development Economic State University of Malang;
arroyan.anugrah.200431@studenta.um.ac.id

1. INTRODUCTION

Education in the 21st century requires learners to have skills that go beyond just theoretical knowledge. Individuals produced by the education system must be able to think critically, creatively, communicatively, and collaboratively, as well as have problem-solving skills that are relevant to real life (Tetep & Arista, 2022). Education is no longer just an information transfer process, but a planned and systematic effort to form human beings who are adaptive to global, technological, and social changes (Eksantoso, 2024). In this context, the curriculum must be designed so that students are not only recipients of information, but also active actors capable of exploring, analyzing, and solving problems (Astutiani & Hidayah, n.d.; Norhafizah, 2025).

Economics education in high school is one of the important aspects in equipping the young generation with strong financial literacy (Rusmono, n.d.). This literacy not only helps them manage their personal finances, but also opens up insights into macroeconomic mechanisms, such as monetary policy, inflation, and the banking system (Waruwu, 2024). Thus, economic education plays a strategic role in forming citizens who are financially intelligent, critical, and ready to contribute to society (Salsabila & Muqowim, 2024).

Problem-solving skills are one of the main competencies of the 21st century that must be developed through economic education (Marinu Waruwu, 2024). The material of money and banking, for example, is not just a theoretical concept, but is directly related to the daily life of students. Understanding money as a medium of exchange and banking as a financial institution helps students understand the basic principles of economics while training them to deal with real problems, such as inflation, digital financial literacy, or the phenomenon of rush money (Trihantoyo et al., 2024).

Problem solving in economics education not only functions as an academic skill, but also as a practical provision for life. Students who are used to solving simple economic problems will be better prepared to face future financial challenges, both as consumers, entrepreneurs, and professionals (Muis, 2019). This is in line with the view of Bowles & Carlin (2020) that economic learning must be linked to real situations to be more meaningful and not boring.

Although important, learning economics is often considered difficult and less engaging. Traditional teaching methods tend to emphasize memorizing concepts without providing real context, making it difficult for students to relate theory to everyday experience (Asfar & Nur, 2018). The learn-to-practice model often only emphasizes technical skills without providing a deep understanding of the relevance of the problem (Ramdani et al., 2025).

In addition, the limitations of innovative media and teaching materials are another obstacle. The modules used are often not integrated with the appropriate learning model, so the learning process is less than optimal (Nurdyansyah & Fahyuni, 2016). In fact, structured and contextual teaching materials can increase students' motivation and help them understand the material better (Norhafizah, 2025; Famulaqih & Lukman, 2024).

Problem Based Learning (PBL) is here as a solution to overcome these challenges. PBL emphasizes real problem solving as the core of learning, so that students not only memorize concepts, but also practice identifying problems, designing solutions, and reflecting (Adhistyananda et al., 2024). This approach has been proven to increase students' active involvement, learning motivation, and critical thinking skills (Akbar et al., 2023; Savitri et al., 2022).

In contrast to Project Based Learning which focuses on the final product, PBL focuses more on cognitive processes through the analysis of ill-structured problems that reflect daily economic dynamics (Muis, 2019). For example, the phenomenon of using e-wallets or loan interest is not just memorization material, but a complex problem involving consumption behavior and financial security. Research by Duch et al. (2001) shows that confusing real problems are actually effective in triggering students' intrinsic motivation to think critically (Savitri et al., 2022). By integrating contextual issues such as inflation and digital financial literacy, PBL becomes a bridge between monetary theory and students' empirical experiences (Shidqon Famulaqih & Aceng Lukman, 2024). Research by Merritt et al. (2017) even confirms

that PBL is able to improve long-term knowledge retention and financial decision-making skills compared to conventional methods (Haque & Kurniawan, 2021).

Although PBL has been extensively researched, its application in the context of economic education, especially in money and banking materials at the secondary school level, is still limited. Most studies have placed more emphasis on general cognitive aspects, while the integration of PBL with contextual teaching materials relevant to students' lives is still rare (Hastuti et al., 2020). In addition, previous research has not examined how PBL-based modules can systematically improve students' problem-solving skills. In fact, these skills are very important to face the challenges of the increasingly complex digital economy. Thus, there are research gaps that need to be filled, namely the development of PBL-based teaching materials that are structured, contextual, and relevant to the needs of grade X students (Ummah, 2019).

This research aims to develop effective teaching materials for money and banking based on Problem Based Learning in improving the problem-solving skills of grade X students. This goal is important because with a problem-based approach, students are trained to think critically, creatively, and collaboratively, in accordance with the demands of 21st century competencies. Teachers also get a learning model that is more interactive and relevant to the curriculum, while schools can improve the overall quality of economic learning. Thus, this research is expected to be able to make a real contribution in equipping students with reflective and solutive skills that are useful in their daily lives and future.

2. METHODS

The research method used in this study is Research and Development (R&D), which aims to produce educational products while testing their feasibility and effectiveness. According to Waruwu (2024), the R&D approach functions to design and develop certain products, then ensure their success through trials. In this study, the model used is ADDIE developed by Dick and Carry, with procedural stages as described by Aziz (2022). The first stage is analysis, which examines the needs of teachers and students; The second stage is design, which focuses on product design; The third stage is development, namely the product realization process; The fourth stage is implementation, namely the application of products in the field; And the last stage is evaluation, which is carried out thoroughly in each phase to assess the quality of the product. The products produced are in the form of problem-based learning based economics teaching materials with money and banking materials for tenth grade SMA/SMK/MA. In addition, this research also includes testing the feasibility and effectiveness so that the products developed can really improve the quality of learning and are relevant to the needs of students.

Table 1 Troubleshooting Instruments

No	Aspects Assessed	Question form	Score	Remarks
1	Understanding the Problem	Explain what is meant by the phenomenon of rush money in banking. Why can this phenomenon cause economic problems for society and the state?	4	Students are able to identify the core of economic/banking problems precisely, relating them to the concepts of money, inflation, and trust in banks.
			3	Students can explain the problem quite clearly, but not yet fully relate to relevant economic concepts.
			2	Students only mention the symptoms of the problem (e.g. rush money) without an in-depth analysis.
			1	Students cannot explain problems or simply copy information without understanding.
2	Planning the Settlement	If there is a decline in public trust in banks, plan settlement	4	Students draw up a solution plan in systematic steps, considering the

		measures that can be taken by the government and the banking sector to restore economic stability.		function of money, the role of banks, and economic risks.
			3	Students make a fairly logical completion plan, but have not considered all the important aspects.
			2	The settlement plan is still general, does not show any connection with the concept of economics/banking.
			1	There is no clear plan or plan irrelevant to the issue.
3	Execute the plan	Imagine if you as a young economist were asked to create a public education campaign about the importance of maintaining trust in the banking system. Explain how you will execute the plan, from the medium used to the main message being delivered.	4	Students carry out the plan actively, using learning resources (books, internet, LKPD), and producing original and argumentative works (posters/infographics).
			3	Students carry out the plan well, but the work is still lacking in depth or less creative.
			2	The implementation of the plan is only partial, the work is incomplete or not in accordance with the instructions.
			1	The student did not execute the plan or the results were irrelevant.
4	Explaining/Checking the Answers Obtained	After developing a solution to overcome the money rush, how do you double-check whether the solution is right and in accordance with the economic concept? Give examples of reflection or evaluation steps that can be done.	4	Students are able to explain solutions clearly, conduct critical reflection, and check the consistency of answers with economic concepts.
			3	Students explain the answers quite well, but reflection and examination are still limited.
			2	The explanation of the answer is not conclusive, there is no re-examination of the correctness of the solution.
			1	Students cannot explain answers or simply copy without reflection.

3. FINDINGS AND DISCUSSION

The subject of the study is a tenth grade student of Madrasah Aliyah Daaruh Ukhwuwah, Malang, with a focus on the development of teaching materials based on problem-based learning on money and banking materials. The research and development process follows the stages of the ADDIE model, namely needs analysis, design design, product development, implementation in the classroom, and effectiveness evaluation. Through these stages, researchers seek to produce teaching materials that are not only relevant to the context of economic learning, but also able to encourage active involvement of students in solving real problems. The results of this research and development are then presented as a practical contribution to improving the quality of learning in economics education.

Findings

3.1 Analysis

Based on the results of the needs analysis at Madrasah Aliyah Daarul Ukhuwwah Malang, it can be concluded that class X students have a tendency towards learning that is contextual, applicative, and relevant to daily life. This condition emphasizes the need to develop more adaptive Economics

Education teaching materials, especially in money and banking materials, in order to be able to form basic financial literacy while increasing students' interest in learning. The implementation of the 2013 Curriculum, which is still dominated by lecture methods and minimal visual media, has not fully accommodated the diversity of students' learning styles, so that learning tends to be one-way and less conducive to active involvement (Endang Andrian, 2024). In addition, the absence of real problems in learning makes it difficult for students to relate abstract concepts to everyday experiences. Therefore, the development of teaching materials based on Problem Based Learning is the right solution, because it is able to present contextual problems, encourage critical thinking, and integrate character values such as responsibility, honesty, and independence. Thus, the teaching materials developed not only function as a medium for delivering material, but also as a means of forming students' competencies and character holistically.

3.2 Design

In the development of teaching materials, money and banking based on Problem Based Learning is a crucial phase that determines the direction and quality of learning. At this stage, the developer develops a systematic design that integrates learning objectives, learner characteristics, and PBL Problem Based Learning principles into a contextual and meaningful teaching material structure. The steps in the design stage:

1) Identify Learning Outcomes and Objectives

The developer determines the Learning Outcomes that must be achieved and formulates learning objectives that are specific, measurable, and relevant to money and banking materials.

Table 2 Learning outcomes

No	Indicator	Description
1	Learning outcomes	Students are able to identify money and commercial banks in the surrounding environment.
2	Learning Objectives	Students are able to explain the meaning and function of money appropriately. Students are able to identify the types of money appropriately. Students are able to analyze the role of banking institutions appropriately. Students are able to formulate solutions to problems related to finance and banking appropriately.

2) Analysis of Student Characteristics

Class X students tend to be active in asking questions and have high curiosity, but still need direction in organizing information. Therefore, learning is designed with Problem Based Learning combined with interactive modules to be more visual, systematic, and accessible.

3) Formulation of Contextual Problems

Real issues relevant to students' economic lives, such as digital transactions or personal financial management, are designed as learning triggers. This encourages active engagement, motivation to learn, and a deeper and more contextual understanding of the material.

4) Preparation of Problem-Based Learning Flow

The flow of Problem Based Learning is systematically arranged starting from problem orientation, information collection, analysis, solution formulation, to reflection and presentation of results. With the support of interactive modules, learners can develop critical thinking, collaboration, and communication skills.

5) Media Design and Interactive learner worksheets

Visual media, illustrations, and interactive learner worksheets are designed to clarify abstract concepts and encourage exploration and problem-solving. Student worksheets provide students with

the opportunity to practice, discuss, and test their understanding systematically, so that learning is more enjoyable and meaningful.

6) Integration of 21st Century Values and Skills

Learning not only focuses on economic concepts, but also develops 21st-century skills such as critical thinking, communication, collaboration, and financial literacy. Character values such as honesty and responsibility are internalized through Problem Based Learning activities.

7) Preparation of Evaluation and Reflection Instruments

Evaluation instruments are designed to measure students' knowledge, skills, and attitudes, both from results and processes. Reflection is carried out by teachers to assess the effectiveness of the strategy, and by students to review the learning experience and formulate improvements.

Thus, this design stage produces a design of teaching materials that are systematic, interactive, contextual, and oriented towards mastering economic concepts as well as the formation of 21st century character and skills.

3.3 Development

The next step is the development stage. This stage aims to ensure that the open-ended materials developed can effectively meet educational needs and objectives. The development process consists of (1) product development, aimed at developing the product; (2) validity testing by experts, aimed at assessing the product's feasibility; and (3) responses and results from large and small group trials, aimed at measuring problem-solving skills and determining the effectiveness of the teaching materials.

1) Product development

At the product development stage, this process is carried out after previously formulating Learning Outcomes and setting a module preparation format. This design serves as the initial foundation in the development of teaching materials, with reference to data and structures that have been studied and determined beforehand. In this phase, the researcher begins to compile the content of the material and visual elements that are designed in an attractive and communicative way, as part of the preparation towards validation by experts. The main goal is to ensure that the initial design of the module is not only academically relevant, but also able to attract attention and facilitate students' understanding optimally.

The initial design of this learning module includes various important components that are integrated with each other. Among them are the front cover, the formulation of learning outcomes and objectives, and a systematic learning structure. The module is also equipped with instructions for use, concept maps as content navigation, and learning materials designed based on real context to make it more accessible.

Cmeaningful for students. In addition, there is a competency test and assessment/reflection section that aims to measure understanding while encouraging students' reflective processes. The following is an initial design of economic education teaching materials developed with a *Problem-Based Learning* approach, which emphasizes the active involvement of students in solving contextual problems as part of the learning process. The following plans were developed:

The development of teaching modules begins with a needs analysis, namely identifying the characteristics of students, competencies that must be achieved, and learning challenges that arise in the classroom. From the results of the analysis, learning outcomes are then determined as the main direction to be achieved, both in terms of knowledge, skills, and attitudes. Furthermore, Learning Outcomes are described as more specific, measurable, and operational learning objectives so that they can be a guideline in designing learning activities.

The next stage is to compile the content of the module, which contains material systematically and progressively, complemented by real-case examples so that students are able to relate theory to practice. To make the module more interesting and communicative, the design of teaching materials is prepared through the Canva application, by adding illustrations, infographics, and graphic design that support readability and learning motivation.

Figure 1. Initial Cover Plan of Teaching Materials

Figure 2. Initial Design of Module Competency

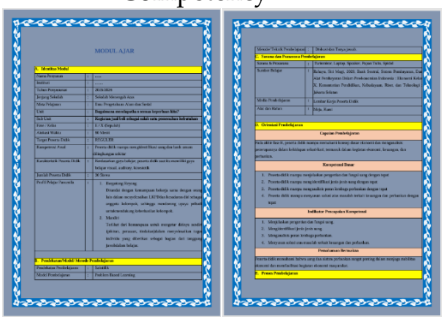


Figure 3. Preliminary DesignMaterial

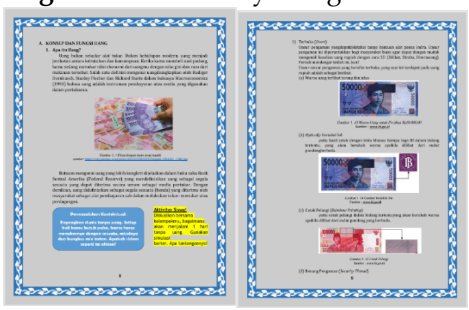


Figure 4. Preliminary Plan of LKPD

The final stage is the validation of the material expert and the validation of the media expert. Subject matter expert validation ensures the accuracy of concepts, content relevance, and suitability with learning outcomes, while media expert validation assesses aspects of module design, readability, and interactivity. By going through this stage, the resulting teaching modules are expected to be not only valid in substance, but also effective as an interactive, contextual, and supportive learning media that supports the achievement of students' competencies.

2) Product Feasibility Validation

In order to ensure the validity and reliability of the developed products, the validation process is carried out by experts who meet certain academic qualification criteria. The main requirement for validators in this study is education practitioners (teachers) or academics (lecturers) who have a minimum education at the Master's (S2) and Doctoral (S3) levels, with a scientific background that is relevant to the substance of the material and learning methodology.

a) Subject Matter Expert Validation

The material in this teaching material has gone through a validation process by an expert lecturer in the field of Economics Education, namely Sri Handayani, S.Pd., M.Pd., Ph.D. This validation aims to assess the quality of the material based on five main indicators, namely: (1) suitability of the material with basic competencies and learning objectives (4 instruments), (2) accuracy of concepts and accuracy of information (3 instruments), (3) integration of Problem Based Learning approach (3 instruments), (4) development of problem-solving skills (3 instruments), and (5) aspects of language, appearance, and feasibility of presentation (2 instruments).

In total, there are 14 assessment items in the validation instrument, with a score scale ranging from 1 (lowest) to 4 (highest). The range of total scores that can be obtained is between 0 to 60. The results of this validation process are then summarized and presented in Table 3 to provide a quantitative overview of the quality of the material that has been developed.

Table 3.Value of Material expert validation results

No	Indicator	Total Score	Shoes Maximum
1	Suitability of the Material with Basic Competencies and Learning Objectives	16	16
2	Conceptual Accuracy and Information Accuracy	12	12
3	Integration of *Problem Based Learning Approaches*	12	12
4	Problem-Solving Skills Development	10	12
5	Language, Display and Presentation Feasibility	7	8
Total Score		**57**	**60**
Validity Score		**95%**	

In table 3 the results of validation from experts show that the material developed in the teaching material obtained a score of 95% which is included in the 81-100 interval class, with **the criteria of Very Feasible**. This shows that the material is in accordance with the needs of students and can improve students' problem-solving skills. The assessment of the validator as a whole states that the material of money and banking is valid to be applied in future research.

Table 4. Material Expert Notes

No	Notes
1	Overall, the modules developed are quite good, but they should add summaries, blank notes for students to write down their respective understandings
2	For instruments to be repaired according to the record
3	PBL problems must be in accordance with real life and occur in daily life

b) Media Expert Validation

The teaching materials developed have undergone a media assessment to ensure whether the developed media is adequate. Media validation was carried out by expert lecturers from the Faculty of Economic Education, State University of Malang. The validation was carried out by Syahrul Munir S.Pd. M.Pd. Media validators assessed 4 indicators, consisting of: 4 instruments for attractiveness, 4 instruments for suitability, 3 instruments for convenience aspects, and 3 instruments for usefulness aspects. The results of the assessment of teaching materials are explained in the following table:

Table 5. Value of Media expert Validation results

No	Indicator	Total Score	Shoes Maximum
1	Attractiveness	13	16
2	Compatibility	13	16
3	Facilities	9	12
4	Benefits	10	12
Total Score		**45**	**56**
Validity Score		**80%**	

Media experts provided a review that showed that the assessed media obtained a score of 45 out of a maximum total score of 65. Thus, the percentage of media ratings reached 80%, which placed it in the 81-100 range and met the **Eligibility** criteria.

Media experts not only provide assessments, but also provide important input and notes to researchers. This feedback includes suggestions for further improvement and development of learning materials. The following are the results of the revisions proposed by subject matter experts to improve the quality of the content that has been developed:

Table 6. Media Expert Notes.

No	Notes
1	Problems in teaching materials and student worksheets should be directed to problems (according to real conditions, which can be taken from the news, etc.)
2	The design is too unattractive

3) Response to Teaching Materials

The implementation of a trial or implementation of economics teaching materials in improving students' problem-solving skills in money and banking materials was carried out in class X of MA daaruh ukhuwah Malang involving 29 students. The learning process takes place individually, where students learn the material using teaching materials and complete the Student Worksheet (LKPD). The results of the implementation of these teaching materials received responses from students and teachers as users, as listed in Table 7 and Table 8 as follows

Table 7. Results of Student Response Mode.

Aspects Evaluated	Modus	Category
Konten	3	Good
Presentation	3	Good
Language	3	Good
Benefits	4	Excellent
Motivation	4	Excellent

Based on the recapitulation data of the results of the student response mode to the teaching materials, the highest scores were obtained in all aspects assessed, namely benefits and motivation. both aspects are categorized as "Excellent" with a mode score of 4. These results show that students' expectations for a meaningful learning process are successfully fulfilled by the teaching materials developed, especially in money and banking materials for grade X students.

Overall, the students' responses showed that the Economics teaching materials on *Money and Banking* were **good** in terms of content, presentation, and language, and **were very good** in providing benefits and motivation. This means that these teaching materials are not only informative but also inspiring, able to foster interest in learning and relevance to real life.

Table 8. Results of teachers' responses to teaching materials using the mode.

Aspects Assessed	Mode	Category
Content Aspects & Material Suitability	4	Excellent
Structure & Presentation Aspects	4	Excellent
Aspects of Learning Approach & Strategy	3	Good
Assessment & Evaluation Aspects	4	Excellent
Aspects of Participation & Collaboration	4	Excellent

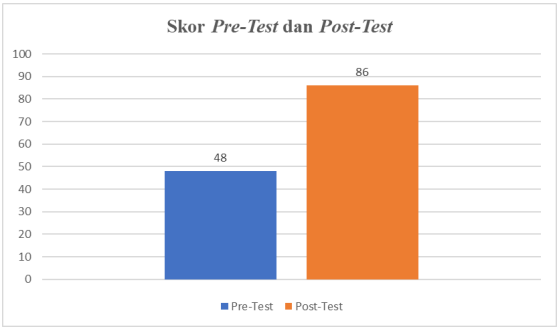
Based on the results of the recapitulation of the teacher's response questionnaire to the teaching materials of Economics Education on money and banking materials validated by Hapdy Susilo, S.Pd and Hamadi, S.Pd, the dominant assessments of "Good" and "Very Good" were obtained in all aspects measured, with an average score of 3-4. These findings confirm that teaching materials are not only pedagogically feasible, but also effective in supporting the achievement of learning objectives systematically, improving students' problem-solving skills, and integrating designs that are attractive and relevant to the characteristics of high school class X students. Positive assessments of content, structure, presentation, evaluation, and participation and collaboration aspects strengthen the validity of teaching materials as adaptive tools that are able to answer classroom needs, while providing empirical evidence that these tools play an important role in problem-based learning.

3.4 Implementation

The implementation of Economics Education teaching materials on money and banking materials was carried out through a trial stage with a total of 29 students to test its effectiveness on a full class scale and ensure the consistency of learning results. Through this stage, teaching materials are not only tested from technical aspects and understanding, but also in terms of pedagogical effectiveness in improving students' analytical, reflective, and collaborative skills. Thus, this implementation ensures that the teaching materials developed are really suitable for use, relevant to the needs of students, and able to support the achievement of learning objectives optimally in money and banking materials.

In the early stages of the research, class X students took a pre-test before carrying out learning using Problem-Based Learning-based money and banking teaching materials with the aim of obtaining initial data on the level of problem-solving skills possessed. After the pre-test is carried out, the learning process is carried out by implementing the teaching materials that have been developed, so that students can be actively involved through structured activities. After the series of learning and trials are completed, students then work on a post-test to measure the improvement of problem-solving skills after the teaching materials are implemented. The results of the comparison of pre-test and post-test scores became the basis for the analysis of the effectiveness of teaching materials in supporting the achievement of learning objectives in Money and Banking materials at MA Daarul Ukhuwah Malang. The following are the results of pre-test and post-test scores of class X students of MA Daarul ukhuwah Malang.

Figure 5. Pre-Test *and* Post-Test *Score Bar Diagram*



The results of the pre-test and post-test analysis on 29 students in class X of MA Daarul Ukhuwah Malang showed a significant increase in problem-solving skills after the use of problem-based learning-based teaching materials, with an average score increasing from 48 (low category) to 86 (high category) and a post-test score range of 75–100. The calculation of N-Gain in the four items of the description questions also strengthens the effectiveness of the teaching materials in facilitating the internalization of concepts as well as their relevance and flexibility as a learning tool. This finding provides empirical evidence that PBL-based teaching materials are not only pedagogically valid, but also have a positive impact on improving students' ability to understand money and banking materials in Economics Education, the results of these calculations are presented in detail in Table 9.

Table 9. N-Gain Test Results

Pretest Average Score	Postest Average Score	Score N-gain	Criteria
48,49138	86,2069	0,743914	Height

Based on the results of the N-Gain test shown in Table 9 the overall score of 0.72 was included in the "High" category according to Melzer's classification, thus confirming a significant improvement in students' problem-solving skills after learning using problem-based learning teaching materials on money and banking materials. Further analysis of each indicator shows that the improvement is systematic and measurable, with some indicators showing the most notable achievements. These

findings strengthen the effectiveness of teaching materials as a relevant, adaptive, and able to develop students' problem-solving skills comprehensively.

Table 10. Recapitulation *of Pre-Test* and *Post-Test* problem-solving skills on each Indicator

No	Indicator	Skor Pre-Test	Skor Post-Test	Skor N-Gain	Category
1	Understanding the Problem	67	112	0,9	Height
2	Planning the Settlement	59	103	0,7	Height
3	Implementing the Plan	55	92	0,6	Medium
4	Explaining/Checking Answers	44	93	0,6	Medium

The following table 10 shows a visualization of data on improving students' problem-solving skills in the form of a bar chart. This visual presentation clarifies the previous description by showing the difference in achievement before and after learning. The bar chart makes it easier for readers to see patterns of improvement in a more concrete way, while emphasizing that the learning interventions carried out are able to have a positive impact on students' problem-solving skills. Thus, Figure 9 serves as empirical evidence that supports the effectiveness of teaching materials in developing problem-solving skills.

Figure 6. Pre-Test *and* Post-Test *Score Bar Chart* on each Problem-solving skill Indicator

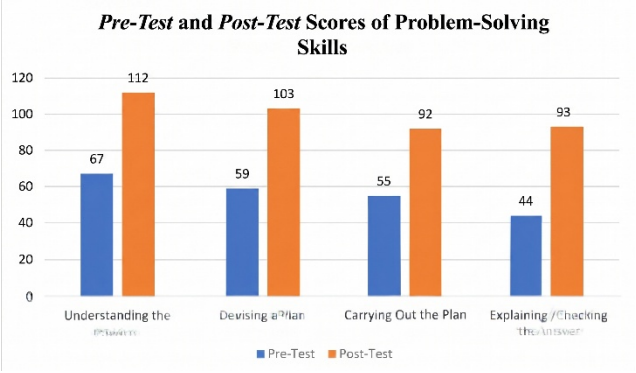
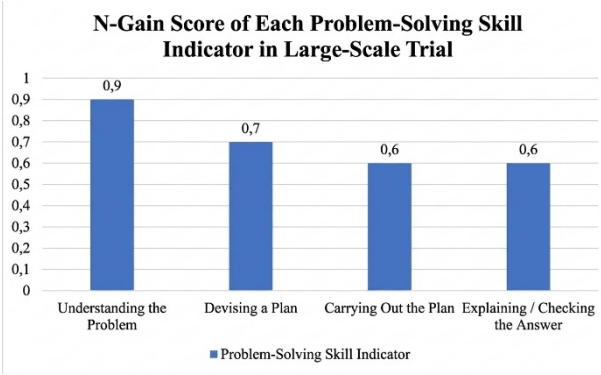


Figure 7. N-Gain Score Bar Chart on each Indicator of problem-solving skills



Quantitative data in Figures 6 and 7 show a significant increase in all indicators of problem-solving skills after the use of problem-based learning-based teaching materials, with pre-test scores in the range of 44–67 and a drastic increase in post-test to the highest achievement of 112. N-Gain analysis showed that most of the indicators were in the "High" category (0.9), while the two indicators, namely executing the plan and explaining/checking the answers, were in the "Medium" category (0.6). These findings confirm that money and banking teaching materials are effective, relevant, and adaptive in developing students' problem-solving skills systematically, as well as providing empirical evidence for their contribution to improving high school students' competence in economic materials.

3.5 Evaluation

1) Revision of Media Expert Validation

Revisions at the media expert validation stage are carried out to ensure that the overall module developed is good enough, but it should add summaries, blank notes/notes for students to write down their respective understandings. Media experts usually provide input related to layout design, color selection, typeface, illustration quality, and integration of supporting media such as images as well PBL problems must be in accordance with real life and occur in daily life. Improvements were made so that the modules were not only informative but also visually communicative, so that students could be more focused and not burdened by complicated displays.

Table 11. Revised Results of Media Expert Products

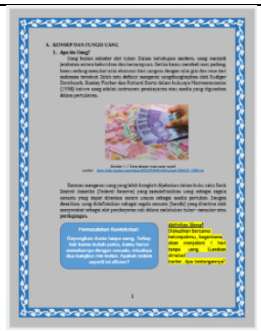
No	Notes	Before Revision	Revised Results
1	The design is too unattractive		
2	Problems in teaching materials and student worksheets should be directed to problems (according to real conditions, which can be taken from the news, etc)		

2) Revision of Subject Matter Expert Validation

Revisions at the material expert validation stage focus on the accuracy of the content, conformity with the curriculum, and the relevance of the material to the learning objectives. The material expert assessed that the overall material in the module developed was quite good, but it should be added a summary, blank notes for students to write down their respective understandings, PBL problems must be in accordance with real life and occur in daily life. Revisions are made to correct misconceptions, add simpler explanations, and integrate character values so that the module not only imparts knowledge but also forms problem-solving skills.

Table 12. Revision Results of Subject Matter Expert Products

No	Notes	Before Revision	Revised Results
1	Overall, the modules developed are quite good, but they should add summaries, blank notes for students to write down their respective understandings.		

2	Problems must correspond to real life and occur in everyday life		

3) Revision of the Implementation Stage

At the implementation stage, the modules do not require revision because each component has been structured in a planned manner and aligned with the learning objectives. This module product can be directly used in classroom activities practically, with a structured material arrangement, the use of easy-to-understand language, and a systematic presentation flow so as to help students understand the content and use it in the learning process. Clear instructions, adequate examples, and integration between theoretical concepts and practical application make this module effective both as an independent learning material and as a support for classroom learning, so that the expected competencies can be achieved by students without obstacles.

Discussion

Teaching materials are an important component of the learning process because they function as a source of information as well as a tool for educators to achieve learning success (Eksantoso, 2024). According to Prastowo, teaching materials include all materials that are systematically arranged to support the learning process (Hilaliyah et al., 2019). In this study, the teaching material module developed provides a comprehensive overview of the competencies that students must master, thereby strengthening the role of teaching materials in increasing learning effectiveness and supporting the achievement of educational goals optimally (Hilaliyah et al., 2019).

In addition, problem-solving skills are the main focus in learning. Problem solving is defined as the ability to think logically, rationally, and analytically to find the right solution through systematic steps. Asfar & Nur, (2018) emphasized that problem solving is a method of solving problems that are successful and can use various rational and logical methods. Thus, this skill requires students to think critically and analytically so that the solutions taken are effective and can be applied in real life.

According to Astutiani, R, (2019), mathematical problem-solving skills can be analyzed through four main indicators that refer to the systematic steps developed by Polya:

Table 13. Troubleshooting Indicators

No	Indicator	Explanation
1	Understanding the problem	Students in determining the information known and asked in the question. At this stage, students are required to read carefully, identify important elements of the problem, and build a thorough understanding of the context of the problem. A

		strong understanding of the problem is an important foundation in determining the right direction of solution.
2	Plan the completion	Students identify appropriate strategies or methods for solving problems. This strategy can be the use of formulas, logical approaches, or mathematical modeling, depending on the type and complexity of the problem. Once the strategy is designed.
3	Implement a settlement plan	Students apply the steps that have been designed systematically and carefully, by maintaining precision and consistency in the process.
4	Double-check the results	Emphasizing the importance of reflection and evaluation of the answers obtained. In this stage, students are invited to match the results with the initial question, interpret the meaning of the answers, and consider alternative solutions if needed. This step not only trains rigor, but also forms an attitude of responsibility and metacognitive awareness in the math learning process. These four indicators are interrelated and form a unified critical thinking process that is essential in problem-solving-based learning.

The syntax of *the Problem Based Learning* (PBL) model, which includes the essential steps to ensure the effective application of this method in the learning process (Bowles & Carlin, 2020). This syntax serves as a guide for educators to optimize student learning outcomes through an approach that focuses on real-world problem-solving. Syntax of PBL as beriku, (Rusmono, 2012).

Table 14. Syntax of *the Problem Based Learning model*

Stages	Teacher Activities	Student Activities
Stage 1 Student orientation to problems	• The teacher conveys the problem to the pechka by the students. • Teachers motivate students so that they can be actively involved in solving these problems.	• Students listen to the problems given by the teacher. • Students actively respond to the problem-solving.
Stage 2 Organizing students to learn	• The teacher divides the students into groups of 5-6 people. • Teachers help students define and organize study tasks related to problems.	• Students sit in groups as determined by the teacher. • The student defines and organizes his or her problem-related tasks.
Stage 3 Guiding Research	• The teacher encourages students to gather	• Students gather information and

Individuals and groups	appropriate information, to get explanations and problem-solving.	data necessary for problem solving.
Stage 4 Develop and present works.	• The teacher assists students in planning and preparing reports and assists students with various assignments in their groups.	• Students compile reports in groups and present them in front of the class and discuss in class.

This research is also closely related to constructivist theory which emphasizes that learning is an active process in which students build knowledge through experience, interaction, and reflection (Salsabila & Muqowi, 2024). In the Problem Based Learning (PBL) approach, students are faced with real problems that are relevant to their lives, such as material money and banking. This process encourages students to think critically, analyze problems, and find solutions independently or collaboratively, in accordance with the principles of constructivism (Sitepu & Albina, 2025).

According to the constructivist view, effective learning occurs when students are able to relate new knowledge to previous experiences (Suryana et al., 2022). Therefore, PBL-based teaching materials are designed to create a learning environment that supports exploration, discussion, and reflection. This allows students to build a deeper understanding as well as internalize the concepts learned (Duch et al., 2001). Thus, PBL-based teaching materials not only function as a learning medium, but also as a means to develop critical and collaborative thinking skills (Syam & Efita, n.d.).

Problem Based Learning (PBL) has been shown to improve problem-solving skills because students are faced with real-world problems that require them to analyze, plan, implement, and evaluate solutions systematically (Merritt et al., 2017). Recent research shows that PBL not only strengthens student engagement, but also trains critical thinking, collaboration, and appropriate decision-making (Rajiani et al., 2016; Ramdani et al., 2025)These findings are consistent with previous research since 2017, for example Damayanti & Susilowibowo (2017) who found that PBL improves motivation and learning outcomes in basic banking subjects, Asfar & Nur (2018) which emphasizes logical and analytical thinking skills, and Ummah (2019) which shows the effectiveness of PBL-based e-modules in increasing learning independence (Safitri et al., n.d.).

4. CONCLUSION

The application of Problem Based Learning to Money and Banking materials has proven to be effective in improving the problem-solving skills of grade X students at the Daarul Ukhuwah Islamic Boarding School Malang. Key findings show that the PBL-based modules developed are valid, feasible to use, and able to encourage students' active involvement in learning. This module not only strengthens the understanding of economic concepts, but also fosters critical, analytical, and collaborative thinking skills that are highly relevant to the needs of the 21st century.

The contribution of this research lies in the development of interactive teaching materials based on PBL that are in accordance with the characteristics of pesantren, so that they can be a reference for teaching economics in other educational institutions. The educational implications of this study emphasize the importance of integrating PBL in the curriculum as a learning strategy that is able to prepare a critical, independent, and highly competitive young generation. Thus, the results of this study not only provide practical benefits for improving the quality of economic learning in Islamic boarding schools, but also strengthen the direction of national education in forming students who are ready to face real challenges in society and the world of work.

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