

The Implementation of Problem Based Learning Integrated With Technology to Improve Writing Skills

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Abstract. Problem-based learning (PBM) has been proven effective in improving students' active learning and problem-solving skills. This article examines the application of technology-integrated PBM methods as an approach to improving students' writing skills. In this study, learning support software and teacher consultation were used in the development of problem scenarios related to curriculum content. Qualitative research provides detailed and relevant information. The researcher used qualitative research methods because qualitative research provides detailed information about the application of technology-based problem-based learning to improve writing skills. The library learning method consists of activities related to collecting bibliographic information, reading and recording, and managing written materials. Qualitative research uses secondary data obtained from literature reviews such as; References, journals, articles and sources related to the research. The information obtained was analyzed using interpretative analysis. This means that the information collected is interpreted or explained, and the analysis is not just a description, but also a precise explanation and interpretation. This method involves several steps, starting with problem identification, research, collaboration and solution development. This case study made extensive use of secondary education literature as a source of literary material. The results show that students' writing skills improved significantly after applying this approach. The practical implication of the findings is that combining PBM and technology can be an effective strategy to improve students' writing skills.

Keywords: Problem Based Learning, Technology, Education, Writing Skills, Integrity

INTRODUCTION

Learning is a lot of fun in the world of literature. In addition, the main goal of scientific and technological progress is knowledge. Through education, we can produce better and smarter students and intelligent (Azhari, 2022). In addition, education also plays an important role in development of the nation and state. One of the most significant impacts of development of education in the 21st century is the increasing development of science and technolog. Therefore, the education system of all countries, including Indonesia, must be fast and innovative to compete in this free market era. era In addition, along with the changes that occur, the education system must also be improved so that progress and development can be monitored over time. education system must also be improved so that progress and development can be monitored from time to time through coordination of activities. time through coordination of activities. One way to achieve this in developing countries is to change teaching and learning methods in response to other changes. This is very beneficial to students' knowledge. The curriculum emphasizes holistic thinking, creativity and the ability to answer questions. The demands of 21st century education education demands that students demonstrate critical thinking, creativity and innovation to face contemporary challenges and

solve problems. to face contemporary challenges and solve problems.of course,Of course, developing creative skills in learning is very difficult; It takes success and patience. Teachers can start with a program that using the PBM method (Munika, 2017).

Indonesia itself used this program in 2013; so clearly the 2013 curriculum encourages students to be more proactive and creative. One way to be creative and inventive is to create writing activities that encourage students to think and reason as they should. Thinking and language skills as well as writing, reading, speaking and listening skills. Writing Skills When writing, writers need to know how to use numbers, words, sentence structure, paragraph development and language. This is why writing is considered more challenging than other language skills. Writing is a developmental process as it requires experience, time, opportunity, practice, specialized skills and proper guidance to become a writer(Awalludin, 2020). Writing requires careful thought, reasoning, and organization; it is also important to do research, pay close attention to and understand the topic, context, and language. The Indonesian program has come to an end. The program is based on basic, secondary, and professional education and techniques (SK and KD). Books often contain learning strategies that encourage creativity, writing, and problem solving. Problem-based learning is a learning method that addresses problems that students encounter when doing home.

Problem solving is a real problem or something that is difficult for students. When learning with the PBL model, the questions asked are often very specific, not related to business, but similar to the opening of a research paper. PBL focuses on developing creative thinking, problem solving and cognitive and analytical skills in adults in real or simulated situations. In other words, the use of PBL models in elementary schools can help solve learning and life problems. Students must be able to solve various problems. The goal is not to solve problems, but to equip students with knowledge and experience for future life. In addition, PBM aims to help students learn independently and independently.

In addition, PBL model learning activities also have several advantages: 1). Improve students' problem-solving skills, 2). Easy to remember, 3). Increase students' understanding of educational materials, 4). Develops leadership and team skills, 5). Students' learning ability and motivation. In addition, problem-based learning is also beneficial to student learning (Mundir, 2022). In problem-based learning, students learn creativity and creative thinking. Nowadays, education in the digital world is increasingly integrating technology into education. The presence of technology makes learning more interesting and exciting, provides more learning opportunities, and motivates students to engage in learning. Writing in a Digital World focuses on information technology, student quality, and innovation. By encouraging students

to connect technology and writing, writing skills can improve comprehension and memory. Many studies have examined the impact of technology use on student learning. The research is consistent and shows that using technology for creativity and innovation helps improve student learning. However, it should not be forgotten that the environment, program and student characteristics can change the learning process. Therefore, in this study the author explores how the utilization of technology and problem-based learning to improve writing skills.

METODE

This research uses qualitative data based on the results obtained from this research. Qualitative research is used to obtain in-depth and qualitative data. Qualitative research is a research method that investigates social problems and interprets facts from natural situations based on data collection and analysis techniques. The reason researchers use qualitative research methods is to obtain in-depth information about the application of technology-based learning in developing writing skills using qualitative research. This research focuses on the application of educational and technology-based questions in developing writing skills using a literature review approach. The literature study method is a series of activities related to methods of collecting literary information, reading and recording, and managing written materials. Therefore, in addition to reference books, books especially well-written and published in special cases, as well as journals containing scientific documents or educational results, i.e. scientific journals, were used to collect data in this study. This qualitative research uses secondary data. That is, it refers to information not provided by research or articles, or publicly available information collected by data collection organizations using such data. Information is also taken from documents such as reference works, journals, articles and other research-related sources obtained through literature review. The data obtained was analyzed using descriptive analysis; that is, the data collected is then interpreted or developed, the analysis not only provides descriptive images but also adequate descriptions and explanations.

RESULTS AND DISCUSSION

What is the Problem-Based Learning Model?

Problem-based learning is a teaching method that encourages students to “learn to learn” and work in groups to find answers to real-world problems. This question is used to arouse students' interest in the research being conducted. Problem-based learning is a learning method that not only encourages students to deepen their understanding of the material, but also provides experience in applying knowledge to solve real-world problems. Areas of

problem-based learning include student guidance, student management, explanation, presentation of learning outcomes, and assessment. The training model used is problem-based learning (PBM) which has many advantages. Students are encouraged to improve their motivation and learning, for example by measuring their knowledge and ensuring their willingness to learn new skills. Therefore, problem-based learning is a teaching method that encourages students to engage in active learning that enhances their writing experience and skills.

Problem Based Learning Model

Inquiry-based learning was first introduced in 1969 at McMaster University School of Medicine in Canada. PBL is a student-centered approach where students learn from teachers and employers to solve problems (Zainuri et al., 2023). Problem-based learning is a learning model that requires critical thinking, problem-solving skills, individualized and collaborative learning. Problem solving activities are collaborative and have global implications. On the other hand, educational activities have an important role in improving health. Because these questions encourage students to use their minds to create and work hard. During this learning process, students encounter problems that need to be solved. This unique approach to problem solving encourages students to think creatively and work together in groups to improve their learning. Teachers get different results. Problem-based learning is important for solving everyday problems. Teachers act as mediators by asking the right questions, providing support and encouragement, and providing learning resources to solve students' problems. In addition, student-centered activities require more information. Today's students must identify, analyze, and evaluate problem-based learning methods that provide students with the best learning opportunities and are consistent with their educational goals. In PBL courses, students solve scientific or practical problems by using creative thinking and reasoning to gain knowledge of the problem.

Students also have the ability to solve problems based on past experience or adapt to new problems in the future. Since this is an exploratory and exploratory study, the answers to these questions are unknown. Students and teachers may find different ways to answer these questions. Therefore, problem-based learning gives students the opportunity to explore all aspects of data collection and analysis, as well as writing essays and other assignments. The starting point of problem-based learning is to distinguish real problems from made-up problems. Questions, requests, or concerns regarding this event are welcome, and creative students are encouraged to submit creative writing. As we have discussed in this article, damage can be caused by environmental or social problems, issues, or pressures. Therefore,

learning to read and write creates excitement and creativity in reading. The characteristics of problem-based learning are: 1. Learning starts from a problem. 2. The main topic is current; Helps students work individually and in groups; 4. Must have critical thinking, understanding and problem-solving skills; 5. Ask students to describe the product and its special characteristics. Through problem-based learning (PBL), teachers can integrate the educational value of creative writing skills into the learning process.

The nature of education is to strive and try to create a good culture so that students can behave independently and act according to established values. The objectives of cultural education are (1) the achievement of multicultural life in the country; (2) psychological, cultural and ethnic knowledge can be useful in improving people's lives; develop basic skills to be a good person, think well, act well and be a good example; (3) understand the attitude of a peaceful, creative, independent and cooperative society. The verse shows that friendship between students is very important. Problem-based learning (PBL) is a learning model with many shortcomings. The weaknesses of problem-based learning (PBL) are: a) if students do not believe that solving a problem is difficult, then they will not want to try to solve it; b) they need support in the form of educational activities and books needed to fulfill their needs; c) long discussion time (PBL); d) Not all universities can use this method. For lazy students, the purpose of this method cannot be achieved, it consumes a lot of time and money, many students have difficulty shortening the learning time, and cannot do PPA; Due to the difficulty of the task, PBL is suitable for elementary schools. Encouraging teachers to work in groups is a long and difficult task.

Distinctive Features of Problem Based Learning

According to (Afriansyah, 2023), he found four characteristics of problem-based learning: problem solving, relational, direct questioning, and inquiry-based learning. The following four aspects were identified: a) Questioning. PBL is not based on any academic or academic principles, but on learning topics and issues that affect students' lives. In this research, people focus on facts, avoid simple answers, and accept different answers based on their point of view. b) Access to other data (for other purposes). You have to ask yourself the right questions to achieve different results. c) Look for real problems. In problem-based learning, it is important to study real problems and find concrete solutions. Students are expected to analyze and question, form hypotheses and predictions, collect and analyze data, conduct research (if needed), provide explanations and draw conclusions. d) Display educational outcomes. This model teaches students to plan and implement the learning process according

to their abilities. When students have completed their work, one group presents their work in front of the class, while the other groups provide responses and criticisms. Then discuss your partner's concerns.

In this phase the teacher guides, guides and limits students to focus on learning. d) Cooperation. The core of this model is cooperation between students in the same group. It enhances teamwork, critical thinking and social skills in solving complex tasks and developing solutions and discussions. The purpose of problem-based teaching is not to help teachers convey knowledge to students. However, the purpose of problem-based teaching is to help students develop critical thinking skills; (2) Teach adults self-control, independence, and responsibility when working in their areas of responsibility. The characteristics of PBL applied to students with special needs today are: a) Participation and enthusiasm in all sessions. b) Explaining the PBL process. c) Student learning is very predictable. d) Actively engaging in discussion and creative thinking and participating in a non-intimidating environment. e) The need for evaluation of personal development, team development and teacher development.

The characteristics of successful problem-based learning in Indonesia are:

1. Active student involvement: Successful problem-based learning emphasizes students' active participation in the learning process. Students are not only passive listeners but also active in identifying, analysing and finding solutions to the problems they face.
2. Contextual problem solving: Successful problem-based learning emphasizes problem solving that is contextual and relevant to students' real lives. The problems raised are related to the content of the program and students' daily lives.
3. Collaboration and discussion: Successful problem-based learning encourages collaboration between students, teachers and others involved in the learning process. Students are encouraged to discuss, share ideas and find common solutions to problems.
4. Effective use of technology: Successful problem-based learning effectively uses technology as a tool in the learning process. Technology is used to support discovery, research and presentation of solutions to specific problems.
5. Reflection and evaluation: Successful problem-based learning provides opportunities for students to reflect on their learning and evaluate the solutions they have found. Students are encouraged to reflect on the steps they have taken and identify learning from the process.
6. Improves critical thinking skills: Successful problem-based learning develops students' critical thinking skills. Students must analyze information, develop hypotheses and evaluate proposed solutions using logical and rational thinking.

7. Student-centered learning: Successful problem-based learning places students as the main subject in the learning process. Teachers guide and support students in the learning process

In addition, signs that problem-based learning can be effective with educational technology inc:

1. Using online learning platforms: Teachers use online learning platforms to provide learning materials, share information, and assign homework to students. This platform can facilitate interaction between students and teachers and allow students to access learning materials flexibly.
2. Use interactive learning apps: Teachers use interactive learning apps interactive learning applications that allow students to engage in engaging learning activities and support problem solving. The application can be in the form of simulations, educational games, or other interactive learning materials.
3. Online Collaboration: Students and teachers use online collaboration tools, such as discussion platforms or chat rooms, to communicate with each other. discussion platforms or chat rooms, to communicate and collaborate on problem solving. They can share ideas, exchange information and work together to find solutions to specific problems.
4. Use digital resources: Teachers use digital resources, such as instructional videos instructional videos, online tutorials and other digital learning resources to support problem-based learning topics. These resources can help students understand complex concepts and improve their information seeking skills.
5. Use analysis and visualization tools: Teachers use analysis and visualization tools such as graphics software or presentation applications to help students analyze data, present information and develop solutions to specific problems. These tools allow students to visually organize information and present it in an interesting way.
6. Develop online collaborative projects: Teachers facilitate the development of online where students work together in groups to complete tasks or projects related to online learning about an issue. They use online collaboration tools to communicate, share documents and schedule meetings.
7. Digital assessment and feedback: Teachers provide assessment and feedback to students digitally through online learning platforms or other tools. They may use automated grading features, written feedback, or voice/video recordings to provide feedback that supports student progress in problem-based learning.

Syntax Problem Based Learning

Syntax in education refers to the rules or structures used to adapt phrases, sentences, or texts to a particular language. It involves understanding how words, phrases, clauses, and sentences are grammatically arranged to convey a message or information clearly and effectively (Ratmiati, 2019). Syntax is an important part of language learning as it helps students understand the structure of a language and the correct arrangement of its parts. Text syntax analysis and creative writing are also emphasized. Students learn to recognize and understand the structure of the texts they read and use this knowledge when writing articles. According to the author, learning syntax usually helps students understand how to communicate effectively in a particular language. It contains rules about vocabulary, grammar and relationships between sentences. Syntax helps you understand how words and expressions are grammatically arranged to convey the meaning of a sentence or expression.

Knowing the phrases will help you create correct sentences and avoid misunderstandings when speaking Indonesian. Designing problem-based learning (PBL) based on students' writing skills requires real, hands-on opportunities to solve problems or tasks related to writing. Here are some learning strategies for solving problems that can influence students' writing skills:

1. Context: PBL often considers real-world learning situations and challenges. As a result, students write in response to the problem or situation, improving their writing skills.
2. Participation: Students participate in the learning process, including identifying questions and information, analyzing information, and writing answers or solutions. These activities will help them develop their writing in a structured and meaningful way.
3. Developing critical thinking: PBL encourages students to think critically in solving problems. This also includes the ability to present logical arguments, analyze data, and express ideas in writing.
4. Collaboration: PBL is essentially a group activity where students work together to solve a problem or project. This collaboration can help students reflect on their own writing and improve their understanding of different writing styles.
5. Reflection: PBL grammar encourages students to think about their writing, including the decisions they made while writing. This allows them to identify the strengths and weaknesses of their work and plan their next steps

By using the PBL approach in teaching writing, teachers can help students improve their writing skills in a meaningful, fun and meaningful way. In general, the PBL model still

relies on scientific learning methods that begin with looking at texts or materials and end with interaction. Before starting the main activity, teachers should plan the learning, think about and set quality education goals. For more details, below we present a description of problematic grammar learning in tabular representation.

Table 1. Problem-based learning syntax

Phase or Stage	Teacher Behavior
Phase 1: Orienting students to the pro	The teacher explains the learning objectives, identifies basic needs and encourages students to participate in problem solving.
Phase 2: Organizing students to learn	The teacher helps students define and organize learning tasks related to this issue.
Phase 3: Assist independent and group investigation	The teacher encourages students to gather information, research, explanations and answers related to the topic.
Phase 4: Developing and presenting work and exhibiting it	The teacher helps students plan and plot workplace solutions.
Phase 5: Analyze and evaluate the process problem solving process	The teacher helps students reflect on their research and the process they used.

Based on the problem-based learning categories above, it is clear that PBL learning requires students to be more active. In this case students are directly involved in research and investigate research to find answers to their questions, so that students will become independent in the acquisition of information.

PBL (Problem Based Learning) learning strategy as one of the technology-integrated learning methods in writing skills

Problem-based learning (PBL) as a teaching method can be integrated with technology to improve students' writing skills in a variety of ways:

1. Access to Information Sources and Resources: Technology allows easy access to various documents and sources of information. Specific problems or projects in PBL. Students can search for information on the Internet, digital databases, and specialized computers to help them solve problems and write.
2. Using word processing software: Students can use word processing software to organize, edit and format their writing. Features such as automatic spell check, page layout, and speed-reading help students improve the quality of their writing.

3. Collaborative environment: Technology allows students to collaborate online on PBL problems and projects. They can use collaboration platforms like Google Docs or Microsoft Teams to share ideas, give feedback, and create documents in real-time.
4. Creative Techniques: Students can use a variety of creative media such as photos, videos or graphics to support or convey information in written form. Technology makes it easy for them to create and edit these, enriching and strengthening the message they want to convey.
5. Automatic Assessment: Some online learning environments offer automated assessment tools that provide immediate feedback on student writing. This may include assessing the accuracy of grammar, spelling and content, allowing students to improve and refine their writing.

By incorporating technology into PBL, teachers can create student-centered learning experiences that allow students to develop their writing skills (Yuberti, 2015). Technology can be a useful tool to facilitate collaborative learning and reflection and to support the development of students' overall writing skills. Problem-based learning (PBL) is an educational approach that emphasizes problem solving through inquiry and independent learning. The integration of technology into writing skills can be optimized through PBL with the following steps:

1. Identify the Problem: Start by identifying a specific writing problem or challenge. For example, students may struggle to write an argumentative essay about a current event.
2. Using technology resources: Show students how to use technology (such as the Internet, word processing software, and online learning platforms) to receive information, understand different perspectives, and make arguments effectively.
3. Cooperative Learning: Encourage students to work in teams or groups to solve problems. They can use technology such as text-sharing applications to collaborate and share ideas online.
4. Independent Inquiry: Asking students to investigate problems independently by using available technological resources. They can search the Internet, read articles, watch videos or participate in online discussion forums.
5. Writing Process: After gathering information and understanding the problem, encourage students to express their thoughts and arguments in writing using technology. They can use word processing software to write articles and online learning platforms to get feedback from teachers and other students.

6. Presentation and reflection: Students can utilize technology to create video presentations or multimedia presentations that support their arguments. After the presentation, encourage them to reflect on their learning, including the challenges they faced and effective strategies.
7. Collaborative Assessment: Students can give each other feedback on the quality of their writing using technology or discuss the strengths and weaknesses of their writing with the teacher.

The integration of technology in PBL for writing skills allows students to develop their writing abilities while learning to collaborate, take initiative, and solve problems independently.

The debate on technology integration in problem-based learning in the digital era is very important and must be understood. This era is characterized by the acceleration of digital changes that have an impact on various fields of life, including education. In this context, the demand for technology integration is not just an opportunity, but also a necessity in the implementation of the learning process. The development of information and communication technology opens the door to new opportunities that can be utilized to improve problem-based learning. The importance of technology integration is especially evident in the role of writing skills as an innovative solution. Technology not only acts as a learning tool, but also as a catalyst that improves the overall quality of learning writing skills. Problem-based learning that integrates technology is unique in its ability to create dynamic and engaging learning.

Technology integration in writing learning can improve students' skills in several ways that are believed to be effective.

1. Access to Extensive Resources: Technology allows easy access to resources such as the internet, digital libraries, and academic databases. Students can search for information, read writing samples, and get inspiration from various sources to enhance their understanding of diverse topics and writing styles.
2. Fast and Measurable Feedback: Various technological tools, such as word processing software and online learning platforms, allow teachers to provide immediate feedback on students' written work quickly. This allows students to refine and improve their writing skills on an ongoing basis.
3. Easy Collaboration: Technology allows for easy collaboration between students, both within the context of the classroom and outside of it. They can share documents, give feedback to each other, and work together on writing projects online. This allows them to

learn from each other, develop cooperation skills, and improve their understanding of the writing process.

4. Creativity in Presentation: Technology allows students to express their ideas in creative ways through digital media such as videos, multimedia presentations, and blogs. This allows them to explore different writing styles and enrich the reader's experience with the use of visual and audio elements.
5. Personalization of Learning: Technology allows students to learn in a way that suits their individual learning styles. They can use customized apps and learning platforms to hone their writing skills individually.
6. Developing Digital Literacy: The integration of technology in writing lessons also helps students develop digital literacy, which is the ability to use technology effectively and responsibly. This is an essential skill in today's digital age and will help students in their future academic and professional lives.

Thus, technology integration can be a powerful tool to improve students' writing skills through wider access to resources, quick feedback, easy collaboration, creative expression, personalization of learning, and development of digital literacy.

Problem-based learning technology not only provides information, but also allows students to become more engaged, explore learning ideas, and improve their writing skills through hands-on activities. Therefore, the utilization of technology learning environment is not just a practice, but a practice in how educational questions arise in the digital world. The utilization of technology in problem-based learning is not only a solution to the changing world, but also an effective strategy to solve specific and precise learning problems, a tool that can transform the whole learning model. She considers the decision to include technology in the development of writing in problem-based teaching as a step forward compared to current developmental trends and the ability to develop creative ideas, creativity and enthusiasm of students. requires advanced typing skills. Problem-based learning using technology is a great way to improve student understanding and performance. The relationship between the two is as follows: Technology allows students to access a wide range of information quickly and easily. Problem-based learning allows students to use technology to research, collect data and find solutions to problems they encounter.

In other activities, students can collaborate with other students or professionals outside the classroom. They can use collaboration platforms such as Google Docs or Microsoft Teams to solve complex problems. This ability is important to achieve good results as you can combine different ideas and skills. Now that technology enables project-based learning,

students have to create something, be it an app, a multimedia presentation or a real-world product. In this context, technology such as graphic design software, computer programs or 3D printing tools can be used to help students produce quality work, and technology can provide feedback to students. Students can also use technology to evaluate and improve their work based on feedback provided by the budget. This allows them to continuously improve the quality of their work over time. There are many tools and techniques that technology can use to motivate students. Problem-based learning allows students to use technology to develop new and creative solutions to problems they face and create better products.

By combining problem-based learning and technology, students can develop real-world skills and provide meaningful employment. Therefore, the utilization of technology in writing can be seen as an opportunity to provide an engaging learning experience that is more in line with students' needs and learning styles. Changing the thinking about technology as a learning tool by viewing technology as a tool to improve students' writing and learning skills, as well as technology-based innovative research. Students' writing skills can bring positive changes to the environment. Students' writing skills are improving rapidly. Literacy provides programs that encourage students to improve their writing skills. Students will not only improve their thinking, but also their ability to interpret, organize and structure texts effectively and efficiently. In addition, it has a positive impact on student participation in the educational process. Technology-integrated inquiry-based learning creates a fun and engaging atmosphere and encourages students to write more.

Students now view writing not as a monotonous activity, but as a challenging and dynamic creative inquiry. Problem-based learning and technology integration are equally important as they change the way students interact with information. They are not only consumers, but also providers of information. The ability to access information quickly and the utilization of innovative technology to improve writing skills in problem-based learning have opened up new opportunities for students to understand and improve the subject

CONCLUSIONS

PBL is a learning method where students learn by solving complex problems or problems that are not very structured and do not have a solution. problems that are not very structured and do not have an integrated solution. solution. In this model, students integrate what they need to solve problems, manage independent learning, apply new knowledge to solve problems, and evaluate the effectiveness of learning strategies. to solve problems, and evaluate the effectiveness of learning and application strategies. applying strategies. Problem-based

learning involves solving everyday problems. everyday problems. At this time the teacher acts as a guide, asking genuine questions, providing questions, providing support and encouragement, and providing learning materials that help alleviate students' problems. learning materials that help alleviate students' problems. This refers to problem-based learning, creativity and performance development integrated with technology. integrated with technology. Today's students need to learn, analyze and evaluate, and this method of learning was not created to help teachers convey certain knowledge to students.

This teaching method has 5 steps: (1) presenting a problem to students, (2) planning student learning, (3) conduct individual or group research, (4) develop and present learning results. (4) develop and present learning outcomes. (5) analyze and evaluate the the actual problem-solving process. PBL can be used as a method of integrated skills learning with a global outlook. This is demonstrated through the use of problem-based learning combined with techniques to improve writing skills and produce quality writing in each technology-based PBL education class, while demonstrating a learning style characterized by curiosity, diligence and enthusiasm. learning style characterized by curiosity, diligence and enthusiasm. Deploying PBM so that teachers can learn, create and innovate in using learning materials according to the latest trends, taking into account the environment, and learning materials according to the latest trends, pay attention to the environment, and pay attention to social issues. social issues. In addition, students are also trained on how to evaluate the implementation of their tasks by using PBL learning technology to improve creative and independent thinking, sociability/communication, and writing skills.

Consider and evaluate the final stage of PBL research research and the first design stage, such as tasks that follow the assessment process of problem solving given by the teacher. PBL learning problems are identified by the teacher as comprehensive factors including environmental, social, cultural, economic, and political factors so that the students can learn more about current problems. Of course, this This is closely related to increasing students' knowledge. This research shows positive impact of the application of problem-solving technology on increasing students' knowledge. Research and innovation supported by the latest and technology has changed students' writing patterns, creating a more effective and enjoyable learning experience. learning experience that is more effective and enjoyable. The development of writing skills is not only reflected in creative activities but also students' participation and development of critical thinking. Therefore, this research provides a strong basis for for integrating technology into education as a practical strategy to improve the quality of learning

and build strategy to improve the quality of learning and build the skills of students with understanding and confidence.

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