Journal of English Language and Education
ISSN 2597- 6850 (Online), 2502-4132 (Print)
Journal Homepage: https://jele.or.id/index.php/jele/index
OPEN ACCESS
Article

Needs Analysis on Project Base Learning Development to Improve 21st Century Skills

https://doi.org/10.31004/jele.v10i4.1153

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A B S T R A C T

The rapid advancement of the times demands that the world of education prepare students with skills relevant to the 21st century. One approach believed to be effective in addressing this challenge is Project Based Learning (PjBL). This study aims to analyze the needs in developing Project Based Learning (PjBL) to enhance students' 21st-century skills. The method used in this study is the Research and Development (R&D) approach, employing the ADDIE development model, which includes the stages of Analysis, Design, Development, Implementation, and Evaluation. In the needs analysis stage, data were collected through observations, interviews, and questionnaires administered to teachers. The analysis results indicate a high need for the development of project-based learning (PjBL); most teachers are aware of the importance of integrating 21st-century skills into learning. The development of Project Based Learning (PjBL) teaching modules is deemed highly necessary. Students' needs also highlight the necessity for a learning approach that is engaging, contextual, and encourages the development of critical thinking, collaboration, communication, and creativity skills.

Keywords: *Needs Analysis, Project-Based Learning, 21st-Century Skills*

Article History:
Received 25th June 2025
Accepted 26th July 2025
Published 28th July 2025

INTRODUCTION

Education in Indonesia continues to experience a very rapid development cycle, resulting in many different learning models, including strategies and methodologies, and is tied to education management and design. In today's era, technological progress is very fast and the use of technology is increasing. Many areas of life are affected by technology, such as education. In this situation, the teacher's task is not as simple as imagined to achieve learning goals. In addition, students who play an important role in learning and understanding the material presented will become a more flexible generation (Maulidia, 2023:127).

In Law No. 20 of 2003 Article 3 concerning the functions and objectives of national education where national education functions to develop abilities and shape the character and civilization of a dignified nation in order to educate the life of the nation, aiming to develop the potential of students to become human beings who believe and fear God Almighty, have noble character, healthy, knowledgeable, capable, creative, independent, and democratic and responsible citizens. This is in line with the development of the Indonesian nation in the 21st century has challenges, especially in the field of education, namely preparing an active, proactive and creative generation. Through education, students need to be formed to be skilled in solving problems like to deliberate, wise in making decisions, able to communicate ideas effectively, and able to work together effectively both individually and in groups.

In the current 21st century, where the era of information technology sophistication is skyrocketing, learning must certainly be able to keep up with this progress so that the knowledge transfer process can be optimized considering that students also demand everything that is conveyed in a hurry, so students are not enough to just have knowledge but

must have the skills to prepare themselves to develop and have skills. According to the Center for Curriculum Redesign in Skills for the 21st Century, to be able to face the challenges of the 21st century, students must have skills such as Creativity, Critical Thinking, Communication, and Collaboration ("4 C's") (Joseph & Oils, 2021:193).

In addition, the era of the industrial revolution 4.0 requires policies and education management that can prepare students to acquire the skills needed today. According to Schwab, in presenting the Fourth Generation Industrial Revolution (Industrial Revolution 4.0) which is a strategic and drastic change in production patterns that collaborate three main dimensions in it, namely humans, technology/machines, and big data (Ayu, 2019:39)

The rapid development of the times, especially in the era of the Industrial Revolution 4.0 which is now moving towards the era of Society 5.0, has posed a great challenge in the world of education. The global community is now required to be able to adapt quickly to increasingly complex technological, social, and cultural changes. The world of work no longer only needs individuals who excel academically, but also those who are able to think critically, be creative, communicate effectively, and work together in cross-disciplinary and cross-cultural teams. Therefore, education must respond to this need by developing learning approaches that can foster 21st century skills early in school.

According to Joyce and Weil, a learning model is a plan or pattern that can be used to design face-to-face classroom learning or additional learning outside the classroom, as well as to organize learning materials. From this understanding, it can be concluded that a learning model is a basic framework of learning that can be filled with a variety of subject contents according to the characteristics of the framework. Learning models can appear in various forms and variations, depending on the philosophical and pedagogical foundations that underlie them (Suyanto & Jihad, 2018:69).

The models in learning are very diverse and can be varied according to need. For example, one model is Project-Based Learning (PjBL). According to the Buck Institute for Education (BIE), PjBL is a learning model that involves students in activities to solve problems and encourages them to express their creativity, thereby improving learning outcomes and creativity. Learning outcomes, according to Trianto (2019:41), Susanto (2019:18), and Suyono & Hariyanto (2019:22), are changes that occur in students in cognitive, affective, and psychomotor aspects as a result of learning activities. In Bloom's Taxonomy, learning outcomes focus more on knowledge, attitudes, and skills. Therefore, learning outcomes can be concluded as the abilities possessed by students after participating in learning activities and gaining experience.

Factors that affect students' creativity, based on Hurlock in Susanto (2019:36), include providing time, opportunities for solitude, encouragement or motivation, and the necessary means. In this study, the researcher focuses on time, encouragement, and means as key factors to enhance children's creativity. However, there are also obstacles to improving student creativity. According to Torrance in Susanto (2019:45), these obstacles include students being too young, limitations on their curiosity, excessive rules and restrictions, and a lack of confidence to express their creativity.

The characteristics of creativity, according to Guilford and Torrance, include four key aspects: fluency, originality, flexibility, and elaboration. Creativity, especially when supported through appropriate learning models, can enhance students' 21st-century skills. One such effective model is Project-Based Learning (PjBL), which emphasizes project-based teaching and learning activities. In this model, while students work on projects, they are still guided by the teacher to ensure meaningful and structured learning experiences (Filsaime, 2018:31).

Sanjaya, (2018:524) mentioned that PjBL is a learning activity that provides opportunities for students to do project work, which means that students are given the task of making a project according to what they have learned. From some of these expert opinions, it can be concluded that the Project Based Learning (PjBL) learning model is an innovative learning that is student-centered and places teachers as motivators and facilitators, where in this case students are given the opportunity to work autonomously to construct their learning. The project-based learning model of students designs a problem and seeks its own solution,

so that it is able to increase students' creativity to come up with their own solutions to make learning activities more meaningful so that they are remembered.

According to project-based learning or Project Based Learning is a learning model that uses projects or activities as a means of learning to achieve competencies, attitudes, knowledge and skills. Basically, it is not the project that is the core of this learning, but rather problem solving and implementing new knowledge experienced from project activities. Project Based Learning emphasizes various contextual problems that will be experienced by students directly from the projects or activities they do (Fathurrohman, 2019:84).

Although Project Based Learning has various advantages, its implementation in schools still faces various obstacles. Many teachers have not fully understood the concepts, steps, and assessments in PjBL. In addition, the dense curriculum, limited time, and lack of facility support are also obstacles in the optimal implementation of this approach. Therefore, the development of project-based learning tools that are structured and in accordance with the context of the educational unit is very important.

To be able to develop appropriate learning tools, the first step that must be taken is a needs analysis. Needs analysis is an important stage in the Research and Development (R&D) approach, which aims to find out the actual conditions in the field, the problems faced, and the gap between ideal and realistic conditions. The results of this analysis will be the basis for designing and developing learning tools that are targeted, effective, and efficient.

Needs analysis activities involve various parties involved in the learning process, such as teachers, students, school principals, and other education practitioners. The information obtained can come from observations, interviews, questionnaires, or school documents. This data is then analyzed to formulate real needs in the learning process, including the need for a PjBL approach that is able to improve 21st century skills.

The results of the initial study showed that most teachers still applied lecture methods and individual assignments that were minimally explored. Students tend to be passive and less involved in the decision-making process during learning. This situation is not conducive to cultivating critical and collaborative thinking skills. The development of project-based learning is a potential solution to overcome these weaknesses. In addition, most teachers do not have learning tools that are specifically designed with the PjBL approach. In fact, for PjBL to run effectively, careful planning, activity design that is in accordance with the curriculum, and authentic assessments that reflect the learning process and outcomes are needed.

Teachers' involvement in the development of learning tools is crucial. Teachers not only play the role of learning implementers, but also designers and facilitators of the student learning process. Therefore, teacher capacity development in designing and implementing PjBL needs to receive serious attention from educational institutions and the government. One of the initial steps is to analyze teachers' needs for a project-based learning model. A well-designed PjBL-based learning tool can be an effective tool in supporting educational transformation. The toolkit must contain essential components such as 21st century competency-based learning objectives, clear learning syntax, digital literacy integration, and authentic assessment schemes. Without systematic tools, project-based learning risks becoming an unstructured and less meaningful activity.

The use of the ADDIE development model in R&D is one of the right choices in developing PjBL learning tools. The model is systematic and flexible, allowing for the development of sustainable and empirical data-driven educational products. At the analysis stage in the ADDIE model, the researcher must explore the needs of the user in this case teachers and students in depth. This process not only includes mapping academic needs, but also includes the psychological, social, and cultural aspects of learners. Thus, the results of development will be contextual and able to answer real needs in the field.

Each school has unique characteristics, both in terms of resources, student backgrounds, and school culture. Therefore, the PjBL device developed must pay attention to the locality aspect so that it is more relevant, accepted, and easy to implement by teachers and students in their respective environments. Project-based learning also contributes to increasing students' motivation to learn. Active involvement in meaningful projects can build confidence, a sense

of responsibility, and a sense of ownership of the learning process. This is in line with a constructivist approach that emphasizes that knowledge is built by learners themselves through social experiences and interactions.

In addition to the motivational aspect, PjBL also provides space for cross-disciplinary integration. A well-designed project can combine a variety of subjects such as science, math, languages, and the arts in one unified activity. Not only does this reflect the complexity of the real world, but it also helps students see the interconnectedness between different sciences and develop a holistic mindset. Through the project, students also learn how to design plans, manage time, and resolve conflicts in teams. It is an essential competency in the modern world of work that demands self-management and cooperation skills. In other words, PjBL not only teaches what to learn, but also how to learn and work effectively.

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This PjBL learning model can help students to discover new concepts, new experiences, and in improving student learning outcomes and creativity both in solving problems and in making a product. As explained, there are several factors that have been described about the development of children's creativity. One of them is by facilitating it, in this case we try to facilitate them to imagine the product and solve the problems presented. In addition, educators also encourage students' creativity to develop through the data they have found during the activity, either during experiments, or elaboration so that with direct activities it becomes meaningful learning and is always remembered by students. These skills include communication and presentation skills, organizational and time management skills, research and inquiry skills, self-assessment and reflection skills, group participation and leadership skills, and critical thinking. PjBL allows students to reflect on their own ideas and opinions, and make decisions that affect the outcome of the project and the learning process in general. The final product produces high-quality and authentic products and presentations.

METHOD

The research method used in this study is the Research and Development (R&D) method with the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) development model approach. This method was chosen because it is suitable to produce learning products in the form of Project-Based Learning (PjBL)-based learning tools designed to improve 21st century skills. R&D aims not only to discover new knowledge, but also to create practical products or solutions that can be used in an educational context. Therefore, this method is very appropriate to be used in contextual and applicative learning development research.

The initial stage in the ADDIE model is the analysis stage. At this stage, a need analysis is carried out to find out the real conditions of the learning process in the field, the gap between actual conditions and ideal conditions, and the identification of problems faced by teachers and students in learning related to 21st century skill development. Data was collected through

observation techniques, interviews, and the distribution of questionnaires to teachers and students at the secondary school level. Needs analysis is the main foundation in designing the design of learning tools to suit the context and needs of users.

The subjects in this study are teachers and students from the secondary education level who have characteristics in accordance with the criteria for the implementation of PjBL. The selection of subjects is carried out purposively, which is based on certain considerations such as teachers' experience in teaching, the readiness of the school in implementing innovative approaches, and the relevance of the curriculum used. The number of respondents was adjusted to the needs of qualitative and quantitative data analysis, taking into account the representativeness and depth of information obtained.

Data collection was carried out using several main instruments, namely interview guides, observation sheets, and needs analysis questionnaires. The instrument was developed based on 21st century skill indicators and PjBL principles. Interviews were used to explore teachers' views on the learning that has been implemented, perceptions of PjBL, and obstacles faced in implementing innovative learning approaches. Observations were carried out to photograph learning practices in the classroom, while questionnaires were used to get an overview of the needs of teachers and students more broadly.

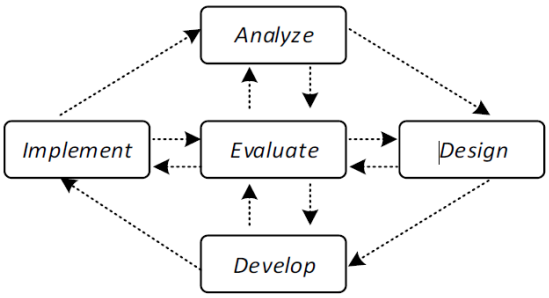
Data analysis was carried out with a mixed methods approach, which combines qualitative and quantitative analysis. Qualitative data from the results of interviews and observations were analyzed using data reduction techniques, data presentation, and thematic conclusion drawn. Meanwhile, quantitative data from the questionnaire were analyzed descriptively using percentages and diagrams to show the tendency of needs and challenges in the implementation of PjBL. The use of this mixed method aims to obtain a comprehensive and in-depth understanding of the existing needs.

After the needs analysis stage is completed, the process continues to the design stage. At this stage, project-based learning tools are designed, including the formulation of learning objectives, the planning of project activities, the integration of 21st century skills, and the development of authentic assessment instruments. The design of learning tools is adjusted to the results of the analysis of needs, student characteristics, and applicable curriculum standards. This design process also involves initial discussion and validation from subject matter experts and instructional design experts to ensure the relevance and feasibility of the product.

The next stage is development, where the design results are implemented in the form of real products in the form of learning modules, student worksheets, teacher guides, and assessment rubrics. This product is then validated by experts to determine the level of suitability of content, component integration, and practicality of use in the classroom context. Validation is carried out using validation sheets that are systematically developed and refer to the principles of instructional development.

The implementation stage was carried out on a limited scale (limited trial) to observe the effectiveness and practicality of the developed learning tools. The trial was carried out in one of the designated classrooms, involving teachers as learning facilitators and researchers as observers. The results of the implementation are analyzed to identify aspects that need to be refined before the device is used more widely. This process is important to ensure that the product can actually be used in the field with optimal results.

The final stage is evaluation. Evaluation is carried out formative and summative to assess the quality of the developed products. Formative evaluation is carried out during the development process to gradually correct the product's weaknesses. Meanwhile, summative evaluation is carried out after the final product has been tested, with the aim of assessing the effectiveness of learning on 21st century skill improvement. This evaluation also considers feedback from teachers and students regarding the ease of use, benefits, and impact of project-based learning that has been implemented. The stages of the ADDIE model can be made a chart as follows:



Picture 1 ADDIE Model Stages

The R&D method with the ADDIE model allows researchers to develop learning tools that are systematic, needs-based, and applicable in the classroom. This approach also provides flexibility in adapting learning designs to various educational contexts. With this method, the results of the research are not only conceptual but also produce concrete products that can be used directly by educators in improving the quality of learning and strengthening 21st century skills in students.

FINDINGS AND DISCUSSION

This study aims to analyze the needs for the development of *Project Based Learning* (PjBL) learning to improve 21st century skills in elementary school students, especially in grade 5. The subjects of the study were 5th grade elementary school teachers totaling 28 people from 28 elementary schools in Slawi District, Tegal Regency. Using the Research and Development (R&D) method with the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) development model, this study describes each stage in a structured manner. The following is a recapitulation table of the results of the questionnaire from 28 5th grade elementary school teachers:

Table 1 Analysis Results

Yes	Aspects analyzed	Percentage of teachers stating "Necessary"
1	The need for a project-based approach	89%
2	Teacher readiness in designing projects	61%
3	Students' interest in project-based activities	82%
4	Availability of learning media and teaching aids	58%
5	Lack of integration of 21st century skills in lesson plans	93%

Based on the table above, it shows that in the first stage, namely *Analysis*, needs are identified through questionnaires and interviews with teachers. The results show that 89% of teachers feel the need to implement project-based learning to develop students' 21st century skills. However, only 61% said they were ready to implement it due to limited understanding and experience. In addition, 93% of teachers admit that 21st century skills have not been explicitly integrated in their lesson plans.

In the Design stage, the researcher begins to design the PjBL learning structure based on the needs found. This includes mapping 21st century skills in grade 5 elementary school learning themes, drafting lesson plans that accommodate project approaches, and creating assessment rubrics. Teachers provide input on the initial design through focus group discussions, and they suggest contextual local projects such as waste management and village history.

Furthermore, at the Development stage, a complete learning tool was developed consisting of PjBL lesson plans, student worksheets, assessment rubrics, and implementation guides. The prototype of this device was developed iteratively , referring to the teacher's input. Teachers also suggest the use of simple digital media as a complement, such as instructional videos and interactive quizzes.

At the Implementation stage, the developed devices were tested on a limited basis in several elementary schools in Slawi District. Teachers try to implement projects that have been designed and reflect together. The results of the observation showed an increase in student involvement in group discussions, communication skills, and activeness in completing project tasks.

The Evaluation stage is carried out to assess the effectiveness and acceptability of learning tools. Formative evaluation is carried out through teacher feedback after initial implementation, while summative evaluation is carried out by comparing student learning outcomes and interviews with teachers. Teachers stated that learning becomes more meaningful, students are more enthusiastic, and the learning process is more lively.

The teacher also suggested that the project be integrated in thematic learning across subjects, so that it is more effective and efficient in implementation. This is an important part of the revision of *the Design* and *Development stage*, so that the PjBL device developed can be adapted to the national curriculum.

Analysis of the Needs of Teachers, Students and the School Environment

This stage aims to understand the real needs both from the side of teachers and students, as well as the school environment so that the teaching modules developed can meet these needs. The results of the analysis include:

Teacher Needs

Practical Guide in Implementing the PJBL Model which Includes Systematic Steps, Relevant Project Examples, and How to Evaluate Student Learning Outcomes.

Practical guidance in implementing *the Project Based Learning* (PjBL) model is designed to help teachers carry out structured, relevant, and effective learning in developing students' competencies. The guide includes three main components: systematic steps, relevant project examples, and how to evaluate learners' learning outcomes. The systematic steps in PjBL provide a thorough procedure to guide teachers from planning to evaluation. This process begins with the identification of topics or problems relevant to the students' daily lives, followed by the formulation of essential questions that provoke critical thinking, project planning that includes the division of tasks and resources, collaborative project implementation, presentation of project results to the audience, to reflection and evaluation of learning processes and outcomes.

In addition to these steps, the guide also includes examples of projects that are relevant to the learners' local context, so as to increase their engagement in learning. These projects are designed to be contextual, engaging, and support the development of critical thinking, collaboration, communication, and creativity (4C) skills. For example, a project about waste management in a school environment, making products from recycled materials, or designing an energy-saving campaign. With these applicable examples, teachers can easily adapt and apply them according to the needs of the class.

This guide also provides direction on how to evaluate student learning outcomes comprehensively, both in terms of process and product. Evaluation includes the use of project assessment rubrics, observation of group work, and feedback from teachers and the audience during presentations. In addition, reflections on learning are carried out to help learners understand the experiences they have gained, including strengths and weaknesses during the implementation of the project. With this approach, PjBL's practical guide not only assists teachers in implementing project-based learning, but also ensures that each stage of learning has a positive impact on student development.

Instruments to Measure the Achievement of 21st Century Competency, such as Observation Sheets, Assessment Rubrics, and Reflection Guides.

The instrument for measuring achievement of 21st Century Competency is designed to help teachers assess the extent to which learners have developed critical thinking, collaboration, communication, and creativity (4C) skills. One of the main instruments is the observation sheet, which is used to record and monitor students' involvement during the learning process, such as their participation in group discussions, problem-solving skills, and the way they communicate and cooperate with peers. This instrument provides authentic data about student behavior in real situations during learning.

In addition, the assessment rubric is an important instrument in evaluating the work of students, both in the process of working on the project and the final product produced. This rubric is designed with clear assessment criteria, such as the quality of problem-solving, the level of creativity in drafting the project, the effectiveness of communication during

presentations, and the individual's contribution to the groupwork. With a structured rubric, teachers can provide objective and fair assessments based on predetermined indicators.

As a complement, the reflection guide is used to invite students to evaluate their learning experiences independently. These guides are typically open-ended questions that encourage learners to identify what they have learned, the challenges they face, and how they can improve themselves in the future. This reflection not only helps learners understand their learning process, but also builds awareness of the importance of developing 21st century skills in everyday life. With a combination of these instruments, teachers have a comprehensive tool to assess and support the success of 21st-century competency-based learning.

Materials Adapted to the Curriculum and Local Conditions in Slawi District.

Learning materials that are tailored to the curriculum and local conditions in Slawi District are designed to ensure that learning is relevant to the needs of students while supporting the achievement of educational goals. This adjustment is made by referring to the applicable curriculum, so that the material delivered still includes the core competencies and basic competencies that have been determined. However, the adjustment also takes into account the local context in Slawi District, such as the geographical, social, cultural, and economic environment of the local community, so that learning becomes more meaningful for students.

For example, learning materials related to environmental conservation can be contextualized with the issue of waste management in the local area. Projects such as the management of organic waste into compost or campaigns to reduce the use of plastic in schools not only support project-based learning, but also teach practical skills that are relevant to students' daily lives. In addition, aspects of local culture, such as Tegal's typical handicrafts, can be incorporated into learning to increase appreciation of their region's cultural richness while encouraging creativity.

By aligning learning materials with national curriculum and local conditions, students not only gain a better understanding of the competencies being taught, but are also motivated to be actively involved. Locally relevant materials help them see the relationship between what they learn in school and their lives in the community, making learning more contextual, applicative, and positively impactful for 21st-century skills development.

Student Needs

Engaging, Contextual, and Project-Based Learning Relevant to Everyday Life.

Engaging, contextual, and project-based learning that is relevant to everyday life is an approach designed to increase learners' engagement in the learning process. This learning emphasizes the use of materials that are directly related to the students' experiences and environment, so that they can more easily understand and relate what they learn to the real situation around them. By making learning contextual, students not only receive information in theory, but also see how the knowledge is applied in daily life, both in the social, cultural, and practical contexts they face.

In addition, project-based learning allows learners to engage in challenging, problem-solving-based activities. Through projects, learners can work in groups to solve real-life problems relevant to their lives, such as developing solutions to environmental problems in schools or designing impactful social campaigns. This kind of learning also encourages the development of 21st-century skills, such as critical thinking, collaboration, communication, and creativity. In this way, learning not only becomes more engaging because it actively engages learners, but it is also more meaningful because they feel connected to the material being taught and can see the immediate impact of learning on their lives.

Learning Activities That Encourage Them to Think Critically, Work Together, Communicate Well, and Create Innovative Solutions.

Learning activities that encourage learners to think critically, work together, communicate well, and create innovative solutions are designed to develop 21st-century skills that are critical to facing the challenges of the future. Through this activity, students are invited not only to passively receive information, but also to actively analyze, evaluate, and interpret existing information. This critical thinking process encourages them to question existing

assumptions, look for supporting evidence, and consider various perspectives in solving problems. In addition, learning activities that emphasize collaboration allow learners to work in groups, share ideas, and complete tasks together, thus developing social skills and the ability to work in teams.

Good communication is also an important aspect of this learning activity, where students are trained to express their opinions and ideas clearly, both verbally and in writing, as well as to listen and respect the opinions of others. Activities designed to encourage the creation of innovative solutions engage learners in projects that challenge them to think creatively and find new ways to solve existing problems. Through this approach, they not only learn academic content, but also develop skills that can be applied in daily life, such as problem-solving, decision-making, and the application of innovative ideas that can have a positive impact on the environment and society.

School Environment Needs

The analysis also includes the condition of the school environment in Slawi District. Some important points are:

School Resources

There are significant gaps in the availability of facilities and technology in many schools, which is one of the main obstacles in the implementation of the Project-Based Learning (PjBL) model. Most schools, especially in areas with limited resources, face obstacles in providing adequate technological devices, such as computers, projectors, or stable internet access. These limitations hinder the use of technologies that can enrich students' learning experiences, such as online learning platforms, collaborative applications, and other digital resources that support project activities. As a result, while PjBL offers great opportunities to improve 21st-century skills such as critical thinking, collaboration, and creativity, without adequate technological support, its implementation becomes less than optimal. Schools with limited facilities also struggle to access the latest technology-based learning materials, which can help students develop their competencies more effectively and relevant to the times. Therefore, it is important to address this gap by improving access and technology infrastructure in schools, so that project-based learning can be implemented to the fullest.

Characteristics of Students

Students at the Elementary School level generally have a high curiosity and a great enthusiasm for learning new things. However, even though they are full of enthusiasm, they often need a more engaging and relevant learning approach to keep their engagement to the fullest. Learning that relies solely on traditional methods such as monotonous lectures or practice questions tends to be unable to utilize their potential optimally. Therefore, a more creative and interactive approach is needed, such as project-based learning (PjBL) or methods that involve learners in practical and collaborative activities. This kind of approach can not only spark their curiosity, but also provide an opportunity for them to be more actively involved in the learning process. By providing challenges relevant to their lives, as well as providing space for exploration and creation, learners can develop critical thinking, creativity, and collaboration skills, all of which are critical to their development in the 21st century.

Social and Cultural Conditions

Schools in Slawi District are located in a rich environment of strong social and cultural values, which are important assets in the learning process. Therefore, the teaching modules developed in this area need to consider the local cultural context so that the learning applied becomes more relevant and meaningful for students. By incorporating elements of local culture, such as local traditions, customs, and wisdom, in learning materials, learners can more easily relate what they learn to their daily lives. This not only makes learning more engaging, but it also encourages them to appreciate and preserve their own culture. Additionally, by making local culture a part of learning, learners can develop a sense of identity and pride in their origins, which in turn can increase their motivation and engagement in the learning process.

Determination of the Purpose of the Development of the PjBL Teaching Module

Based on the analysis of problems, needs, and environmental contexts, the objectives of the development of this teaching module are:

Helping Elementary School Teachers in Slawi District Effectively Implement the Pjbl Model to Improve Students' 21st Century Competencies.

An important step to improve the 21st Century Competencies of students. PjBL, which emphasizes problem-based learning and collaboration, is well-suited for developing critical thinking, creativity, communication, and collaboration skills—the four competencies that are the main focus in 21st-century education. However, in order for PjBL to be implemented effectively, teachers need support in terms of understanding and skills to design, implement, and evaluate projects relevant to students' lives. A more practical and contextual approach is needed to ensure that teachers not only master the theory, but are also able to integrate the principles of PjBL in every aspect of their learning. This includes designing engaging and meaningful projects, managing group dynamics, and thoroughly evaluating project processes and outcomes. By providing appropriate training, resources, and teaching modules, teachers can be more confident in implementing PjBL, which will ultimately help improve the quality of education in Slawi District and prepare students with relevant skills to face future challenges.

Provide practical, contextual problem-based learning guidance to support learners in developing critical thinking, collaboration, communication, and creativity skills. This learning guide is designed to guide teachers in designing learning experiences that are relevant to the situations and challenges faced by learners in their daily lives. With a problem-based approach, learners not only learn theoretical concepts, but are also invited to solve real problems relevant to their environment, such as social, environmental, or local cultural issues. This approach stimulates them to think critically in analyzing problems, seek innovative solutions, and discuss in groups to achieve a common understanding. In addition, the guide also encourages collaboration between learners by involving them in group projects, which develop their communication skills in both speaking and listening, as well as the ability to work together effectively. By providing practical and contextual guidance, learning becomes more meaningful and can prepare learners to face the challenges of the 21st century with the skills they need to succeed in an ever-evolving world.

Improving the Quality of Learning in Elementary Schools by Presenting Innovative Approaches Relevant to the Demands of the 21st Century.

This innovative approach involves the application of learning methods that focus not only on knowledge transfer, but also on the development of skills needed in the future, such as critical thinking, creativity, collaboration, and communication. One example of an innovative approach that can be applied is Project-Based Learning (PjBL), where learners are exposed to real-world problems that are relevant to their lives. In this context, they can work in groups to find solutions, design projects, and communicate with various parties. This kind of approach not only improves academic skills, but also strengthens social and emotional skills that are important in everyday life. By integrating technology, social media, and various digital resources, learning becomes more dynamic and in line with the times. Thus, this innovative approach can improve the overall quality of learning, making it more effective, with the needs of learners in the 21st century.

CONCLUSIONS

The need for project-based learning development (PjBL) is very high among 5th grade elementary school teachers in Slawi District, Tegal Regency. Most teachers are aware of the importance of integrating 21st century skills in learning, but experience obstacles in terms of understanding the concept of PjBL, designing teaching tools, and limited facilities. The development of Project Based Learning (PjBL) teaching modules is very necessary to answer the needs of teachers and students in Slawi District, especially in providing practical guidance for the systematic implementation of PjBL, 21st century skill assessment instruments, and materials relevant to the curriculum and local conditions. The needs of students also show the

need for an interesting, contextual, and learning approach that encourages the development of critical, collaborative, communicative, and creative thinking skills. The school environment in Slawi District shows that there are challenges and potentials that need to be accommodated in the development of teaching modules, such as limited technological facilities, curious characteristics of students, and local socio-cultural richness that can be used to make learning more relevant and meaningful. The teaching modules developed must be adaptive to these conditions so that the implementation of PjBL can run optimally and effectively.

ACKNOWLEDGEMENTS

I would also like to express my deep gratitude to the supervisors who have given me direction, input, and motivation during the process of preparing this thesis and the BK teachers who have supported me by providing valuable data, insights, and experiences that are an important foundation in this research. The cooperation and assistance provided are very meaningful for the success of this thesis.

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