

TECHNOLOGY-BASED PROJECT-BASED LEARNING TO TEACH ENGLISH IN UNIVERSITY LEVEL: NEED ANALYSIS

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ABSTRACT

The goal of this study is to create a conceptual framework for implementing project-based learning in private institutions to teach language skills. This study made use of the LPKS Aura Sukma Insani-Tourism and the Home Assistance Program in the English study program. An explanatory mixed methods design method was used in this study, with quantitative research and qualitative analysis conducted to support the analysis. The needs analysis model is a hybrid of CIPP and OEM evaluation concepts. According to the findings of this study, this institution in this context requires a conceptual framework for the use of technology-based Project-based learning in teaching language skills so that trainers are pedagogically prepared. The input results indicate that this institution requires trainers and students to be prepared to implement technology-based Project-based learning in the classroom. The process results indicate that technology-based project-based learning must be implemented with adequate technological support for students. The product results demonstrate that this technology-based project-based learning must be capable of producing results in the form of products that will later be used as evaluation material in the implementation of additional technology-based project-based learning. In addition to the findings of the analysis, it was discovered that the planning of teaching materials must be in accordance with student needs as well as 21st-century skills.

Keywords: language skill, project-based learning, technology, 21st-century learning

INTRODUCTION

In everyday life, language is one of the most important forms of communication. It comes as no surprise that language is valued. The establishment of language as the primary means of communication represents a watershed moment in the establishment of national unity. It's no surprise that language learning is becoming increasingly popular. It is not surprising that in this increasingly advanced era, language is studied as more than just a national language. Foreign languages can also be learned to improve communication skills and to build relationships with people from other countries. As a result, an increasing number of schools are beginning to deepen their approach to foreign language learning. One of them is to establish an English language study program in Indonesia.

Students enrolled in foreign language programs must be able to write and speak in the intended target language fluently and understandably. However, in order for students to achieve those skills, they must be placed in a learning environment that allows them to effectively learn and use a foreign language. The further the world's development progresses, the more the world is confronted with the Coronavirus pandemic, also known as Covid-19, which has a significant impact on all levels of education worldwide. The learning process encountered numerous obstacles and challenges as a result of the pandemic, ranging from student activities that were not permitted to conduct face-to-face learning. As a result, our government is implementing online-based learning activities as a temporary replacement for teaching and learning activities.

In this case, the process of teaching English is aided by the use of learning models, one of which is the "Model Technology Based Project-Based Learning," which can motivate students to improve their English skills. Given the benefits of the "Project-Based Learning Model," which can motivate students to create a project or authentic work that will help them develop their skills, using this model is the best way for teachers and students to overcome problems. This aligns with the principles that guided the development of the 2013 Curriculum, which include a scientific approach to teaching and learning, as well as process and product-based learning outcomes assessment through activities like observing, asking, exploring, associating, and communicating.

"Project-Based Learning Model" (PjBL) is a learning approach that involves students in a project based on a problem, with the goal of producing real work at the end," and PjBL focuses on student activities such as gathering information and using it to create something useful for their own or others' lives, but it cannot be separated from the applicable curriculum. as cited in Nakada et al., 2018 (Nurhadiyati et al., 2020). Concerning the application of Project-Based Learning.

Because of the conditions in the field, which have many demands in the teaching and learning process, technology is a good solution to use at this time. On the one hand, the entire community is prohibited from gathering. According to Hodgins (2010), the "Project-Based Learning Model" (PjBL) emphasizes a student-centered learning method in which students on the particular topic of active learning are more self-reliant in having completed authentic works as a result of learning. Tresna Dermawan et al. (2008: 30) defined Project-Based Learning as a systematic learning method in which students learn skills and knowledge throughout a lengthy and structured exploratory process aimed directly at authentic and complex questions, as well as carefully designed tasks and products.

Given the rapidly changing times and increasing media support for the communication process, using technology is currently one of the simplest things to do. Weaknesses in current technology use are only visible in need for quotas and insufficient networks, as well as electronic devices that not everyone believes they can afford. People can get the effect of learning anywhere and at any time without having to think about time constraints because distance learning is very effective today when we are faced with different distances and times. It should be noted, however, that not all schools make effective use of today's technology.

According to Prasetyo's (2020) research, many teachers in a variety of schools are still unable to effectively use technology in their elementary schools due to limitations in the network and technological tools used when teaching students at school. Given the issues raised, the decision to use PjBL as a method of learning language skills can be viewed in the context of the importance of current technology as a medium of learning in online learning. As a result, assessing the success of implementing technology-based Project-Based Learning on private campuses is critical, especially in terms of improving English language skills. In the English language education study program, developing an understanding of foreign language concepts for students in their future application as language teachers are considered very important because students will become a milestone for the future of the nation's children.

Few private universities have investigated the need for using Project-based learning in the form of technology to see and demonstrate the efficacy of this teaching method in improving language skills. The goal of this research was to identify the learning requirements for developing an understanding of how to use technology in project-based learning methods in private universities. In the LPKS Aura Sukma Insani-Tourism and Home Assistance Program, the researcher focuses on what type of technology-based Project-based learning is necessary for teaching students English language skills and what aspect of technology-based Project-based learning is necessary to learn English language skills.

LITERATUR REVIEW

21st century

Internalization of character values must always go hand in hand with 21st-century learning, especially when it comes to learning strategies that are integrated with school culture and course design. For the next generation to act as lifelong learners, lifelong learners with personality, and lifelong learners with the ability to develop in the present and the future, character education in schools is essential. The phrase "21st-century skills" refers to a broad range of knowledge, abilities, work habits, and personal qualities that are crucial in today's society, especially for academic success and future employment. The four Cs—communication, collaboration, critical thinking, and creativity—are essential skills for this century (Erdoan, 2019).

Language Skill

The four basic language skills that have long been used in education are listening skills, speaking skills, reading skills, and writing skills. These four skills are known as macro abilities. Grammar, vocabulary, pronunciation, and spelling are examples of micro-skills. Two parameters connect the four basic macro skills: communication mode (oral or written) and communication direction (receiving or producing messages) (Supina, 2018).

In spoken mode, listening skills are receptive abilities. When a sound flows into our ears, and we listen to it, listening skill refers to the process of listening and understanding what we hear (Aydoan & Akbarov, 2014). When used in spoken mode, speaking ability is a productive skill. This skill, like others, can be more difficult than it appears because speaking entails more than just words. This skill is frequently associated with the listening process because it is a form of two-way communication that includes the process of listening to understand the meaning of the conversation (Aydoan & Akbarov, 2014).

Reading abilities are written receptive abilities. These abilities can be acquired through the process of listening and speaking on their own. Reading can help us increase our vocabulary and understanding by listening to what is said. When used in writing mode, writing skills are productive (Supina, 2018). Writing is considered to be one of the more difficult skills than it appears; even native speakers of a language consider this skill to be the most difficult because it requires the structured representation of an utterance and thought. (2018) (Supina).

Project-based Learning

"Project-Based Learning Model" (PjBL) is a learning model that involves students in a project based on a problem, with the goal of producing real work at

the end," and PBL focuses on student activities such as gathering information and using it to create something useful for their own or others' lives, but it cannot be separated from the applicable curriculum. as cited in Nakada et al., 2018 (Nurhadiyati et al., 2020). PjBL learning generally consists of three steps, according to Mahanal and Wibowo (2009), as cited in (Syakur et al., 2020): planning, creating (creating or implementing), and processing.

PjBL criteria emphasize focusing on questions or problems, constructive inquiry or design, granting students autonomy, and being realistic. The primary components of Project-Based Learning are (1) posing questions or problems to organize and begin activities and (2) obtaining final results or several products as a series of activities, individual communication, or various task results that answer the problem. as cited in Lisminingsih (2010) (Syakur et al., 2020). Project-based learning focuses on students based on their learning context, allowing students to demonstrate and explore their understanding through projects they create to solve an existing problem.

Online Learning

Online learning is defined as learning that takes place using the internet network as a medium. Because it is highly adaptable, students can do this learning anywhere. Online learning can supplement traditional learning in today's digitalized world (Krishan et al., 2020). The Ministry of Education and Culture No. 15 of 2020 provides information on distance learning guidelines, which state that the entire teaching and learning process is carried out online from the comfort of their respective homes. As a result of this information, the Ministry of Education has issued a directive that no more teaching and learning activities will take place in schools for an unknown period of time.

As long as there is no further government notification about the pandemic's spread, the entire teaching and learning process will be moved online (e-learning). In response to the COVID-19 pandemic, several countries, including Indonesia, have implemented e-learning. According to Dahwan (2020), as cited in (Anggraini, 2021).

The Use of Technology in Teaching

Asynchronous Learning

Asynchronous learning is a type of online education in which students can access learning materials at their leisure and from any location (Perveen, 2016). This is the most common type of asynchronous learning used in online learning. This learning model is popular because it allows students to learn freely,

independently, and at their own pace without feeling left behind or under pressure from others (Perveen, 2016). Asynchronous online learning also offers students advantages such as independent learning, critical thinking, and student-centeredness. Aside from the benefits that this type of learning provides, the disadvantages include a lack of direct feedback, personal interaction, hands-on collaboration, and real-time activities.

Synchronous Learning

In contrast to the asynchronous learning model, the synchronous learning model allows students to participate in virtual activities in real-time. Synchronous learning is an online learning method in which students and teachers communicate in real-time through an online platform (Khalil & Ebner, 2017). Synchronous learning is defined as learning in which teachers and students communicate with each other through online learning platforms at the same time. Because real-time interaction is advantageous, this learning model encourages active forms of interaction, collaboration, and student participation. Video conferencing, audio conferencing, live webcasting, and a variety of other applications can all be used for synchronous learning (Riwayatinationsih, 2020).

Need Analysis

Needs assessment is a process that examines and frames people-related issues and opportunities for performance improvement. A needs assessment is a procedure for determining how to close a learning or performance gap (Gupta et al., 2007). Comparing the current state to the desired state, defining the problems, understanding the behaviors and mechanisms that contribute to the current state, determining whether and how certain behaviors and mechanisms can be changed to produce the desired state, and developing a solution to the gap are all part of the process (Gupta et al., 2007). Requests for needs assessments are typically addressed in the following circumstances: solving a current problem, avoiding a past or current problem, creating or seizing a future opportunity, and providing learning, development, or growth (Gupta et al., 2007).

Munby's work, as well as Chambers' 1980 work, popularized the term "target situation analysis" (Songhori, 2008). During this time, several other terms were used, such as current situation analysis, deficiency analysis, pedagogic need analysis, strategy analysis, learning needs analysis, means analysis, discourse analysis, register analysis, and genre analysis (Songhori, 2008). In his 1980 article, Chambers coined the term Target Situation Analysis (TSA). He described Chambers' efforts to eliminate terminology ambiguity in his article. Chambers defines TSA as "communication in the target situation."

As cited in (Robinson, 1991; Jordan, 1997), present situation analysis (PSA) can be proposed as a supplement to target situation analysis (Songhori, 2008). A current situation analysis is performed if a target situation analysis is performed to determine what learners can expect at the end of the Language course. The use of need assessment, according to (Gupta et al., 2007), is intended to solve problems in the current state by developing strategies or practical solutions that correspond to the desired conditions.

Two models that can be used to analyze needs are the Organizational Elements Model (OEM) and the Evaluation model using the Context, Input, Process, and Product (CIPP) domains. The Organizational Element Model (OEM) is a tailored model that performs needs analysis and strategic planning by connecting and explaining the desired external and internal outcomes. This CIPP model is evaluation-focused, with the goal of improving performance or programs by meeting the needs for improvement. According to Stufflebeam and Shinkfield (1986), the CIPP model consists of four interconnected elements: context, input, process, and product evaluation.

RESEARCH METHOD

In this mixed methods study, Clark and Creswell's Explanatory Mixed Method Design model is used. This mixed method collects quantitative and qualitative data sequentially and concurrently. The qualitative method is used to understand the phenomena of the subject's experience, such as behavior, motivation, action, and perception, and it is used to give the general public a better understanding of the world. The purpose of this design is to investigate the research problem, where research refers to preliminary research that serves as the foundation for further investigation. The first stage entails collecting and analyzing quantitative data in order to answer research questions. In the second phase, the researcher advances to the next stage, using qualitative methods to test or generalize preliminary findings. The researcher then interprets how the findings are derived from the preliminary findings.

To analyze the characteristics of the conceptual framework of project-based learning required in teaching language skills subjects, the researcher used the Organizational Elements Model (OEM) as a Needs assessment model and the Context, Input, Process, Product (CIPP) model as an evaluation model. The Organizational Element Model (OEM) is a model for analyzing and planning needs by relating and explaining desired external and internal outcomes. The CIPP model, on the other hand, is evaluation-oriented, with the goal of improving performance or programs by meeting the needs required for performance improvement.

The purpose of this research is to determine what type of technology-based Project-based learning is required by the lecturer when teaching language skills, as well as to investigate the characteristics of technology-based Project-based learning required for learning language skills. A language skills trainer at LPKS Aura Sukma Insani-Tourism and Home Assistance Program is the subject/object of this study. The researcher would collect data using a mixed method that included both qualitative and quantitative data. The interview guide and document analysis will be used to collect qualitative data. The questionnaire would be used to collect quantitative data. During the data collection process, questionnaires were used to determine the needs of lecturers when teaching language skill subjects, and interviews with lecturers who teach language skill subjects were conducted.

In this study, researchers used a triangulation method to test the credibility of research data using a mixed explanatory method. Triangulation is a method of gathering information from various sources using various techniques and at various times. In this study, the researcher used a source triangulation technique to double-check data obtained from various data sources, such as quantitative questionnaire results, which were supplemented by qualitative research results from interviews and document analysis. This study builds on the source technique to investigate the differences between quantitative and qualitative data obtained through triangulation. As a result, this research requires techniques that can detect data differences in order to produce accurate and precise conclusions.

FINDING AND DISCUSSION

Interviews, questionnaires, and document analysis were used by researchers in this study to collect and process data obtained during the research process at LPKS Aura Sukma Insani-Tourism and Home Assistance Program. Gupta et al. (2007) combined a needs analysis model that combines two analytical methods, namely the CIPP evaluation concepts and OEM, in this study (Organizational Element Model).

In the combined analysis method of CIPP evaluation concepts and OEM (Organizational Element Model), the needs analysis in question is an analysis to compare the current condition and desired condition by analyzing the problems that occur in the current condition in the lesson and understanding the expected condition in the next lesson. The CIPP and OEM (Organizational Element Model) evaluation concepts included several elements of analysis, such as Context, Input, Process, and Product. This analysis process' findings provide an overview of the requirements for implementing the Technology-Based Project-Based Learning process at the LPKS Aura Sukma Insani-Tourism and Home Assistance Program.

Table 1 The findings of the kind of technology-based project-based learning needed in teaching language skill subject

	Context	Input	Process	Product
Current Conditions	At LPKS Aura Sukma Insani-Tourism and Home Assistance Program, there is no conceptual framework for implementing Project-based Learning.	Project-Based learning is not being taught in institutions, by trainers, or by students.	At the moment, Project-Based Learning is not being used at LPKS aura Sukma Insani-Tourism and Home Assistance Program.	Project-Based learning is still not widely used as a method of acquiring 21st-century and 6C skills.
Desired Conditions	A conceptual framework and planning are required to implement Project-Based Learning.	Institutions, trainers, and students are expected to be ready to implement Project-Based Learning.	It is hoped that in the future, the LPKS Aura Sukma Insani-Tourism and Home Assistance Program will be able to implement Technology-based, Project-based Learning.	In the future, it is hoped that technology-based project-based learning will be implemented to improve 21st-century skills and 6C skills.

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More detailed results for the comparison of the current condition and desired condition using a combination of the CIPP and OEM models based on the type of Technology-Based Project-Based Learning Required in Teaching Language Skill Subjects are provided below.

- **Context**

Researchers examined data on the fundamental laws that support the structure and implementation of project-based learning in the teaching of language skills at LPKS Aura Sukma Insani-Tourism and Home Assistance Program in this context. Researchers used questionnaires, interviews, and document analysis to collect and process data. A context analysis yielded the following results:

Table 2 The findings in the context

Current Condition	Desired Condition
<p>The basic legal that supports the structure and implementation of project-based learning in teaching language skills at LPKS Aura Sukma Insani-Tourism and Home Assistance is provided in the form of a syllabus or RPS that is designed to implement project-based learning in the current situation based on data analysis conducted in the form of questionnaires and interviews. However, the document analysis revealed that this institution lacks basic juridical or legal foundations for designing and implementing project-based learning. In other words, these organizations are unaware of the legal framework and conceptual framework that should be used in designing and implementing this project-based learning process.</p>	<p>In the desired situation, data analysis in the form of a questionnaire revealed that this institution anticipates developing and implementing a project-based learning process at LPKS Aura Sukma Insani-Tourism and Home Assistance in the future.</p>

The context analysis revealed that the LPKS Aura Sukma Insani-Tourism and Home Assistance Program lacks a conceptual framework that supports the planning and use of PjBL on campus. All learning methods are permissible according to educational regulations. As a result, this institution requires a fundamental foundation or framework to support the use of Technology-Based Project-Based Learning in Language Skills Teaching.

- **Input**

Researchers examined data on trainers' and students' readiness to implement project-based learning in teaching language skills at the LPKS Aura Sukma Insani-Tourism and Home Assistance Program. In order to collect and process data, researchers used questionnaires, interviews, and document analysis. The following are the findings of an input analysis:

Table 3 The findings in the input

Current Condition	Desired Condition
In the current situation, data analysis from questionnaires and interviews shows that trainers are pedagogically prepared to implement project-based learning, and students are willing to accept and participate in the project-based learning process. The document analysis, however, revealed that the trainers at this institution were not prepared to implement project-based learning.	Data analysis in the form of a questionnaire revealed that all trainers were expected to be pedagogically prepared by preparing to teach concepts using project-based learning in the desired situation, and students were expected to be ready to accept the project-based learning process at LPKS Aura Sukma Insani- Tourism and Home Assistance Program.

According to the input evaluation analysis, the trainer's readiness in the Technology-Based Project-Based Learning process is perceived to be lacking, and the trainer's readiness in the form of planning, implementation, and assessment is critical in implementing Project-Based Learning. Trainers must have a thorough understanding of both the PjBL implementation process and the institution's Project Based Learning foundation. Even though students come from a variety of backgrounds, when implementing Project Based Learning, student pedagogical readiness is also required.

- **Process**

Researchers examined data from the planning, implementation, and assessment of project-based learning in the teaching of language skills at LPKS Aura Sukma Insani-Tourism and Home Assistance Program. In order to collect and process data, researchers used questionnaires, interviews, and document analysis. The following is the outcome of a process analysis:

Table 4 The findings in the process

Current Condition	Desired Condition
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<p>Based on data analysis from a questionnaire and interviews in the current situation, this technology-based project-based learning was carried out at LPKS Aura Sukma Insani-Tourism and Home Assistance Program. Trainers who have completed the entire process of implementing project-based learning by making plans for the desired learning process, implementing it in class, and providing appropriate assessments using the project-based learning assessment model can attest to this. However, document analysis revealed that the trainers at this institution did not demonstrate the correct process for use.</p>	<p>In the desired situation, data analysis in the form of a questionnaire revealed that all trainers anticipate a type of technology-based project-based learning designed to help students learn in class. The trainer hopes to be able to design the learning process in accordance with the stages of the project-based learning model, beginning with planning and ending with assessment, which is used to evaluate students at LPKS Aura Sukma Insani-Tourism and Home Assistance Program.</p>
<p>Technology-based project-based learning in the classroom because no document results showed that this institution used project-based learning for everyday learning processes. Institutions frequently use task-based learning in the classroom.</p>	

According to the process evaluation analysis, the implementation of Technology-Based Project-Based Learning at the LPKS Aura Sukma Insani-Tourism and Home Assistance Program cannot be carried out properly because the Institute's meetings are very short, making it difficult to carry out. Because the LPKS Aura Sukma Insani-Tourism and Home Assistance Program previously used Schoology but no longer does, the availability of technology to support the implementation of Technology-Based Project-Based Learning is deemed insufficient. As can be seen, the LPKS Aura Sukma Insani-Tourism and Home Assistance Program institution require a type of Technology-Based Project-Based Learning with time constraints and adaptations to student practicum based on existing Practical Work Institutions.

- **Product**

Researchers analyzed data on student learning outcomes related to 6C and 21st-century skills at the LPKS Aura Sukma Insani-Tourism and Home Assistance Program after implementing project-based learning in teaching language skills. In order to collect and process data, researchers used questionnaires, interviews, and document analysis. The following is the outcome of a process analysis:

Table 5 The findings in the product

Current Condition	Desired Condition
<p>In the current situation, data analysis using questionnaires and interviews reveals that the results of this project-based learning process can improve students' 4C skills specifically and 6C students in the future, and the analysis reveals that this project-based learning process can develop skills. Higher GPAs will help students in the twenty-first century. Using project-based learning, the resulting product, which can take the form of writing or video, is passed through the learning process in class. The results of the analysis through analysis documents, however, do not explain what form of real projects are the products of the project-based learning process because it has been discovered that LPKS Aura Sukma Insani-Tourism and Home Assistance do not use project-based learning in their learning process but instead use task-based learning in the classroom on a daily basis.</p>	<p>In the desired situation, data analysis in the form of a questionnaire revealed that all trainers anticipate a type of technology-based project-based learning designed to help students learn in class. According to the trainer, there will be product forms in the future that correspond to the subjects that correspond to the stages of the project-based learning process itself.</p>

According to the findings of the previous section's analysis, the researchers interviewed trainers who stated that Project-Based Learning is very well used to improve these skills in order to achieve 21st-century skills, 6C skills, and increase

student GPA scores. In practice, however, institutions fail to incorporate Project Based Learning in accordance with the appropriate measures. The LPKS Aura Sukma Insani-Tourism and Home Assistance Program frequently employ Blended Learning and Task-Based Learning, and this is reflected in the lesson plan that serves as a teaching guide for trainers. As a result, in order to raise students' GPAs, improve 6C skills, and achieve 21st-century skills, a learning plan based on Technology-Based Project-Based Learning is required.

CONCLUSION

The researcher discovered it found that nearly all trainers have a legal basis that supports the use of project-based learning, but they lack conceptual framework guidelines that could be used as a guide for implementing the project-based learning process in class after data was collected using the instruments used. Not all trainers, however, provide the entire project-based learning process; instead, trainers provide project task-based learning, which is similar to project-based learning in class, such as directly creating dialogues, videos, and products.

Students are evaluated in class based on factors such as attitude, participation, individual skills, group skills, collaboration, communication, and critical thinking, as well as the results of midterm and final semester exams, which can take the form of projects or writing. According to the explanation above, all trainers are not ready to implement project-based learning because this institution does not have conceptual framework guidelines that are used as a reference for implementing learning; however, this institution is aware of it on a legal basis; the only difference is that not all trainers currently provide true project-based learning but provide a similar task; this institution uses blended learning and task-based learning. Based on this, it is feasible to conclude that this institution requires a conceptual framework for planning teaching materials that incorporate technology-based project-based learning while also being tailored to students' language abilities.

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