Jadila: Journal of Development and Innovation in Language and Literature Education
Publisher: Yayasan Corolla Education Center

E-ISSN: 2723-6900
P-ISSN: 2745-9578
Volume 4 Number 4, 2024
Page 257-272

The Role of Project-Based Learning in Developing 21st Century Skills in EFL Classes

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Abstract

The usefulness of Project-Based Learning (PBL) in fostering the development of critical thinking, teamwork, communication, creativity, and digital literacy—all crucial 21st-century skills—is examined in this paper. Based on constructivist learning theories, such as those proposed by Lev Vygotsky and John Dewey, the study emphasizes PBL as a student-centered method that encourages experiential learning via practical projects. Through active problem-solving and teamwork, these projects help students grow in their ability to think critically and creatively. A narrative literature review was used as part of the study's approach to compile pertinent studies related to Project-based learning. The conceptual framework for the analysis concentrated on the ways in which PBL develops essential competencies, paying special emphasis to student participation, technological integration, and collaborative learning. The results show that by challenging students to apply their knowledge to solve real-world situations, PBL dramatically improves critical thinking. Additionally, it fosters creativity by supporting invention and concept experimenting. Teamwork in PBL environments fosters collaboration, an essential ability in today's businesses. PBL also helps students become better communicators since they have to explain their thoughts and provide solutions. PBL's incorporation of digital technologies improves digital literacy even further and gets pupils ready for a world where technology is everywhere. To sum up, PBL is an effective teaching strategy for cultivating 21st-century competencies. However, sufficient training for teachers, institutional backing, and fair access to digital resources are necessary for successful implementation. PBL is recommended for use by educators in order to help students become lifelong learners and better equipped for the complexity of the modern workforce.

Keywords: critical thinking; collaboration; modern education; project-based learning; 21st-century skills

A. Introduction

The 21st century has ushered in a rapidly changing world driven by technological advancements, globalization, and a dynamic labor market, prompting educators to shift focus from traditional rote learning toward fostering competencies that prepare students for future challenges. These competencies, commonly referred to as 21st-century skills, include critical thinking, collaboration, communication, creativity, and technological literacy (Thornhill-

E-ISSN: 2723-6900
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Miller et al., 2023). Research highlights that these skills are crucial not only for employment but also for personal and civic responsibility in today's complex global society.

The growing importance of 21st-century skills is further emphasized by international initiatives such as the OECD's Future of Education and Skills 2030 project (Miyamoto et al., 2015). This shift underscores the urgent need to rethink pedagogy in a way that aligns with modern demands, where traditional methods often fall short.

One such innovative pedagogical approach that has gained significant traction is Project-Based Learning (PBL). PBL enables students to engage deeply with real-world problems through hands-on, collaborative projects that promote problem-solving, critical thinking, and creativity (Miyamoto et al., 2015). As a learner-centered approach, PBL not only enhances academic outcomes but also prepares students with the competencies needed for the 21st-century workplace.

Despite the recognized importance of 21st-century skills, many traditional education systems continue to rely on outdated teaching methods, focusing heavily on memorization and standardized testing. These methods often fail to equip learners with the critical skills necessary for success in today's fast-paced, technology-driven world (Sousa & Wilks, 2018). There is a growing disconnect between what students are taught and the skills they need to thrive in the workforce.

The educational community has increasingly acknowledged this gap, as evidenced by policy shifts and global education goals (Grek, 2022). However, the practical integration of 21st-century skills into everyday teaching remains a challenge. This issue points to a need for innovative pedagogical approaches that can bridge this gap, with PBL being one of the most promising methodologies.

The purpose of this paper is to explore how Project-Based Learning (PBL) can effectively develop 21st-century skills, including critical thinking, collaboration, communication, and creativity. By examining current research and case studies, this study seeks to demonstrate the effectiveness of PBL in fostering these essential skills, and how its implementation in classrooms can address the gap between traditional teaching methods and the skills required for the modern workforce.

The significance of this study lies in its potential to contribute to ongoing efforts to reform education in a way that better prepares students for the demands of the 21st century. Integrating PBL into educational systems can have profound implications not only for student learning outcomes but also for long-term workforce development. By fostering creativity,

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collaboration, and problem-solving, PBL equips learners with the skills they need to succeed in a rapidly changing world. Furthermore, it encourages a shift in education that aligns with the global push toward sustainable development, equity, and inclusivity.

This study will provide educators, policymakers, and curriculum developers with insights into how PBL can be effectively integrated into various educational contexts, ultimately helping to shape a more relevant and dynamic learning experience for students. By promoting the development of 21st-century skills, this approach has the potential to transform education, preparing learners not only for the challenges of the workforce but also for active and responsible citizenship in the global community.

B. Literature Review

Theoretical Background

The rapid advancement of technology and globalization has significantly reshaped the educational landscape. The demand for graduates equipped with 21st-century skills—critical thinking, creativity, collaboration, communication, and digital literacy—has increased. As such, there is a growing emphasis on innovative pedagogical approaches, such as Project-Based Learning (PBL), that foster these competencies in learners. PBL has been recognized as an effective strategy to bridge the gap between traditional instruction and the demands of the contemporary workforce, making it a key focus in the education sector today.

Theoretical framework

The implementation of Project-Based Learning (PBL) is rooted in constructivist learning theories, particularly those of John Dewey, Jean Piaget, and Lev Vygotsky. Constructivism emphasizes active learning, where students construct knowledge based on their experiences and interactions with the environment. According to Dewey's experiential learning theory, education is a process of learning through doing, where learners engage in activities that require them to apply their knowledge in practical situations. Dewey posited that such experiential learning fosters deeper understanding, as students are more engaged and motivated when learning is connected to real-world tasks (Dewey, 1916).

Similarly, Piaget’s cognitive development theory underlines that learners build knowledge through interaction with their environment. PBL aligns with Piaget’s theory, as it encourages students to explore, experiment, and engage in problem-solving activities that stimulate cognitive growth (Piaget, 1954).

Vygotsky’s social constructivism also provides a theoretical basis for PBL, emphasizing the role of social interaction and collaboration in learning. Vygotsky’s concept

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of the "Zone of Proximal Development" (ZPD) is particularly relevant to PBL, as students work together in teams, learning from peers and teachers who provide scaffolding to support the development of more complex skills (Vygotsky, 1978).

Through the lens of constructivist theories, PBL is viewed as a pedagogical approach that fosters not only knowledge acquisition but also the development of 21st-century skills. Students are encouraged to work collaboratively, think critically, and communicate effectively, all of which are essential for success in the modern world direct quotations widely. It should be written in full sentences, and provide building bridges and an overview.

Conceptual Framework

The conceptual framework for implementing PBL in developing 21st-century skills revolves around the integration of content knowledge with skill development. PBL provides an authentic learning environment where students engage in complex, real-world projects that require the application of cross-disciplinary knowledge. Within this framework, the teacher acts as a facilitator, guiding students through the project process while encouraging independence and creativity.

In this model, the development of 21st-century skills is both the process and the outcome of PBL. The process involves student engagement in collaborative, inquiry-based activities that require critical thinking, problem-solving, and effective communication.

Digital tools and technologies are often integrated into these projects, promoting digital literacy and preparing students for the technological demands of the future workforce (Bellanca & Brandt, 2019). The outcome of PBL is the acquisition of skills such as creativity, collaboration, and self-management, all of which are crucial for success in the 21st century. According to Kaldi, Filippatou, and Govaris (2020), PBL has been shown to enhance not only academic achievement but also students' abilities to work in teams, solve complex problems, and communicate their ideas effectively.

Relevant Studies

Research on the implementation of PBL has demonstrated its effectiveness in developing both academic competencies and 21st-century skills. A study by Condliffe et al. (2017) found that students who participated in PBL-based curricula showed significant gains in critical thinking, problem-solving, and collaboration compared to those in traditional instructional settings. The study highlighted that PBL allows students to engage deeply with content, as they are required to apply their knowledge to solve real-world problems, a process that fosters higher-order thinking skills.

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Similarly, a study by Kokotsaki, Menzies, and Wiggins (2016) emphasized the role of collaboration in PBL. Their research indicated that PBL enhances students' teamwork and communication skills, as they must work closely with peers to complete complex projects. Collaboration in PBL settings mirrors the collaborative nature of modern work environments, where team-based problem-solving is a key aspect of success. By working in groups, students not only learn how to share knowledge but also develop interpersonal skills such as empathy, leadership, and conflict resolution.

In terms of creativity, studies have shown that PBL encourages students to think outside the box and develop innovative solutions to problems. According to Larmer, Mergendoller, and Boss (2015), PBL fosters creativity by giving students the freedom to explore various approaches to problem-solving. The open-ended nature of projects allows students to experiment with ideas, encouraging a creative mindset that is crucial in the 21st-century economy, where innovation is a key driver of success. Digital literacy is another crucial skill developed through PBL. In the digital age, students must be proficient in using technology to access, analyze, and create information.

A study by Becker and Park (2019) explored the integration of digital tools in PBL and found that students who engaged in technology-enhanced projects demonstrated significant improvements in digital literacy skills. These findings align with the growing recognition that digital proficiency is as important as traditional literacy in the 21st century. Furthermore, PBL has been linked to improvements in student motivation and engagement.

Research by Thomas (2021) revealed that students involved in PBL projects were more motivated to learn because the projects were relevant to their lives and interests. The authenticity of PBL tasks encourages students to take ownership of their learning, which leads to deeper engagement and a greater sense of responsibility for their educational outcomes.

Despite the clear benefits of PBL, its successful implementation requires careful planning and support. Teachers need to be trained not only in the pedagogical principles of PBL but also in managing classroom dynamics, facilitating collaboration, and integrating technology effectively (Harris & Rooks, 2020). In addition, schools must provide the necessary resources and support structures to ensure that PBL can be implemented effectively.

The literature clearly supports the implementation of Project-Based Learning as an effective pedagogical approach for developing 21st-century skills in modern education.

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Rooted in constructivist theories, PBL provides an authentic, student-centered learning environment that fosters critical thinking, creativity, collaboration, and digital literacy. Research has demonstrated the positive impact of PBL on academic achievement, skill development, and student engagement. However, successful implementation requires ongoing teacher training, access to resources, and institutional support to ensure that all students can benefit from this innovative approach to education.

C. Research Methodology

This study employed a narrative literature review using a conceptual framework approach to examine the implementation of Project-Based Learning (PBL) in developing 21st-century skills in modern education. The narrative literature review methodology was selected due to its suitability in synthesizing diverse sources, identifying trends, and providing a broad understanding of the topic (Siddaway et al., 2019).

In this study, the narrative review method was deemed appropriate, as it provides the ability to explore a wide range of studies on PBL and its impact on 21st-century skills development. A systematic search for relevant literature was conducted using online academic databases, including Google Scholar, Scopus, ERIC, and Web of Science. Search terms included "Project-Based Learning," "21st-century skills," "modern education," "collaborative learning," "constructivism," and "PBL implementation." To ensure that the review encompassed recent advancements in the field, the search was limited to articles published within the last five years (2018–2023). This timeframe was chosen to capture the latest research findings and pedagogical approaches related to PBL and 21st-century skills, reflecting the evolving educational landscape.

The inclusion criteria for selecting studies were as follows: (1) the study focused on Project-Based Learning in educational contexts, (2) the study examined the development of 21st-century skills, including critical thinking, collaboration, creativity, communication, and digital literacy, (3) the study was published in a peer-reviewed academic journal or scholarly book, and (4) the study was published between 2018 and 2023. Only articles available in English were included in the review.

Exclusion criteria were applied to ensure the relevance and quality of the selected literature. Studies were excluded if they (1) focused on other pedagogical approaches not directly related to PBL, (2) did not specifically address 21st-century skills, or (3) were published before 2018. Additionally, studies that lacked empirical data or theoretical

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grounding were excluded to maintain the rigor of the review. Articles were further screened based on their relevance to the research questions and conceptual framework.

This study applied a conceptual framework approach to structure and analyze the literature on PBL and 21st-century skills. A conceptual framework provides a structure for understanding the key components of a phenomenon, identifying relationships between variables, and guiding data analysis (Jabareen, 2009). In this review, the conceptual framework focused on the intersection of Project-Based Learning and 21st-century skills, drawing on key themes such as constructivism, collaborative learning, technology integration, and student engagement.

The framework was informed by constructivist learning theories (Dewey, 1916; Vygotsky, 1978), which emphasize active, student-centered learning and collaboration, and by research on the essential 21st-century skills needed for success in modern education. Using this framework, the literature was categorized according to how PBL contributes to the development of specific skills, such as critical thinking, creativity, communication, collaboration, and digital literacy. Studies were analyzed in relation to these core components to determine the effectiveness of PBL in fostering these skills and its relevance in contemporary education.

Data extraction involved identifying key themes, methodologies, findings, and theoretical perspectives from the selected studies. A thematic analysis was used to group the findings into categories based on the types of 21st-century skills developed through PBL. This approach enabled the identification of recurring patterns, gaps in the literature, and potential areas for future research (Nowell et al., 2017). Findings from the literature were then synthesized and presented in a narrative format, with a focus on how PBL fosters critical 21st-century skills in students.

By using a narrative literature review combined with a conceptual framework, this study provides a comprehensive overview of the current state of research on PBL and its role in developing essential skills for the 21st century. The flexibility of the narrative review method allowed for the integration of diverse perspectives, while the conceptual framework offered a structured approach to analyzing the impact of PBL on skill development.

D. Results and Discussion

1. Results

PBL and Critical Thinking in English Language Learning

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The overwhelming body of research backs up the claim that Project-Based Learning (PBL) helps students develop critical thinking abilities, which are crucial for navigating the challenges of the twenty-first century. This is especially important when learning English, as critical thinking improves students' capacity to assess various viewpoints in texts, analyze linguistic structures, and use language knowledge in practical settings. According to a number of studies, PBL requires students to apply their knowledge, analyze data, and assess solutions while working through real-world situations. Kokotsaki, Menzies, and Wiggins (2016), for example, emphasized how PBL encourages students to engage more deeply with language activities and aids in the development of higher-order thinking abilities required for successful communication. Likewise, Condliffe et al. (2017) discovered that pupils engaged in PBL-based English assignments had improved decision-making skills, in contrast to students in conventional lecture-based classes, they participate in metacognitive activities and reflect on their learning processes.

Constructivist ideas, which hold that students actively create their understanding via investigation and critical interaction with material, are in line with PBL's emphasis on inquiry-based learning. Because they must ask questions, look for language answers, and critically assess evidence—whether it be linguistic structures, cultural quirks, or contextual appropriateness—before drawing conclusions, English language learners must pay particular attention to this. PBL gives English language learners the chance to take charge of their language learning, question presumptions about language use, and reconsider conventional methods of problem-solving, claim Kaldi, Filippatou, and Govaris (2020). Additionally, PBL fosters the growth of critical thinking in English language learners by having the teacher act more as a facilitator than a direct educator. By motivating students to examine various viewpoints and take into account different strategies, Through PBL, students develop critical language awareness and acquire the abilities necessary for successful communication in a variety of international contexts.

PBL and Creativity in English Language Learning

Project-Based Learning (PBL), especially in the context of English language instruction, greatly improves creativity, another essential 21st-century talent. PBL's inherent flexibility enables English language learners to think creatively, try out different language usage strategies, and tackle communicative difficulties from a variety of perspectives. According to studies examined by Larmer, Mergendoller, and Boss (2015), students

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participating in PBL were more likely than their counterparts in more conventional settings to experiment with a variety of language structures, explore innovative methods of expressing ideas, and produce original work. Instead of following preset answers, PBL projects' open-ended format enables students to be creative by coming up with original language-based solutions, such writing original scripts, creating interactive presentations, or creating narratives.

PBL's ability to incorporate cross-disciplinary knowledge into language challenges lends even more credence to its function in encouraging creativity. English language learners are motivated to produce meaningful, context-rich language products when they are encouraged to include ideas from many disciplines, such as science, technology, engineering, and mathematics (STEM), claim Becker and Park (2019). Students may need to understand scientific data, present findings in English, and develop strong arguments for change when working on a project about climate change, for example. The collaborative and creative demands of contemporary businesses, where cross-domain communication and problem-solving are crucial, are reflected in this multidisciplinary approach.

According to the analyzed studies, PBL fosters an atmosphere that encourages creativity in language acquisition. assisting kids in cultivating an attitude receptive to creative language and communication techniques. In addition to developing their creativity, English language learners gain confidence in their ability to use the language in a variety of real-world situations by participating in realistic, meaningful assignments.

PBL and Collaboration in English Language Learning

A key component of Project-Based Learning (PBL) is collaboration, which is especially beneficial in English language instruction as students frequently collaborate in groups to finish challenging, language-rich assignments. According to the literature, PBL greatly improves students' capacity for collaboration, which is an essential talent for efficient teamwork and communication in both academic and professional settings. PBL promotes English learners to exchange linguistic information, negotiate responsibilities in group work, and build on one other's ideas, according to Kokotsaki, Menzies, and Wiggins (2016). These cooperative procedures are modeled after real-world situations where problem-solving and creativity, especially in globalized workplaces, depend on proficient English communication.

Vygotsky's idea of the "Zone of Proximal Development" (ZPD) serves as the foundation for PBL's collaborative aspect, since students improve their English by engaging

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with classmates who may speak the language at different levels. As they work inside their ZPD, students co-create their understanding of English and learn from one another. According to research by Thomas (2021), English language learners who participated in PBL projects outperformed their counterparts in regular classrooms in terms of interpersonal communication skills, such as empathy, leadership, and dispute resolution. These results demonstrate that PBL's collaborative element not only improves collaboration but also promotes social-emotional and personal development, both of which are critical for meaningful language use.

The teacher's involvement in encouraging teamwork is crucial in English classes that emphasize PBL. Teachers serve as mentors, assisting students in resolving linguistic misunderstandings, navigating group dynamics, and promoting cooperative learning. For example, a teacher could assist students in developing a group presentation by providing guidance on proper pronunciation, grammar, and vocabulary. The demands of the contemporary workforce, where teamwork and proficient English communication are highly prized, are reflected in this pedagogical transition from teacher-centered education to student-centered cooperation.

PBL and Communication in English Language Learning

One of the most important skills that Project-Based Learning (PBL) fosters, especially in English language instruction, is effective oral and writing communication. According to a number of studies, PBL helps English language learners communicate their ideas more effectively and convincingly both orally and in writing. Students must use English to communicate their ideas, support their arguments, and explain their solutions to teachers and peers while collaborating on assignments. PBL encourages English language learners to participate in meaningful conversations, offer helpful criticism, and hone their ideas through group discussions, all of which support the development of good communicative competence in English (Harris and Rooks, 2020).

The literature also emphasizes how technology can improve communication in PBL environments, which is particularly important in English classrooms. According to Becker and Park (2019), including digital technologies like video conferencing, online collaboration platforms, and multimedia presentation software helped English language learners interact more successfully with their teams and with outside audiences. For instance, students may work together on shared papers, record and distribute English-language video presentations,

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or produce interactive language-based projects using digital technologies. In addition to improving communication, these resources help students get ready for the kinds of digital communication tools they will use in professional and academic contexts where English is frequently used as the primary language of contact.

Additionally, PBL helps English language learners improve their writing communication abilities. Many PBL projects end with written outputs like essays, reports, or presentations, which call on students to arrange their ideas, formulate logical arguments, and effectively explain their research in English. Students' written English abilities are improved through the iterative process of drafting, receiving feedback, and editing work in PBL, which helps them communicate complex concepts more accurately and professionally (Kaldi et al., 2020). Additionally, this procedure strengthens their comprehension of vocabulary, syntax, and text structure—all crucial elements of clear written English communication.

PBL and Digital Literacy in English Language Learning

Digital literacy has become a vital 21st-century ability, especially in English language education, since digital technology is progressively incorporated into every facet of life and business. According to a review of the literature, Project-Based Learning (PBL) provides an effective framework for helping English language learners improve their digital literacy. Numerous studies demonstrate how PBL integrates technology as a key element of language learning, allowing students to become proficient in researching, collaborating, and presenting in English utilizing digital resources. Students can improve their digital literacy in an English-language setting by, for example, using online platforms to access English-language materials, collaborate on language-based projects, and present their findings in multimedia formats.

According to Becker and Park (2019), students who participated in PBL projects that incorporated technology showed greater levels of digital literacy than their counterparts in regular classroom settings. These initiatives frequently call for the use of digital tools for English language learners to conduct research on real English literature, work with peers on language assignments, and produce digital presentations in English. In addition to enhancing students' technical proficiency, these exercises help them develop the critical thinking skills necessary to navigate the wide variety of English-language content on the internet.

In the context of studying English, the use of technology into PBL also fosters the growth of related abilities like media and information literacy. Students gain the capacity to

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critically evaluate the reliability and applicability of the information they come across as they work on projects that call for them to collect, analyze, and synthesize data from a variety of digital English-language sources. In a world where false information is common and English is frequently the main language of international communication, this is especially crucial. Students improve their language skills and acquire the critical thinking and evaluation abilities needed to thrive in the digital age by interacting with real internet resources in English.

2. Discussion

The results of this review show that, in the context of teaching English, Project-Based Learning (PBL) is a successful pedagogical strategy for fostering the development of critical 21st-century abilities. According to the literature review, PBL improves critical thinking, creativity, teamwork, communication, and digital literacy—all of which are essential for learning English and succeeding in the contemporary world. These results support other studies on PBL's advantages and highlight how crucial it is to incorporate PBL into English language instruction (Dos Santos et al., 2021).

Being in line with constructivist learning theories, which prioritize active, student-centered learning, is one of PBL's biggest benefits in English language instruction. PBL encourages deeper cognitive engagement and the development of higher-order language abilities by involving students in real-world, language-rich challenges and empowering them to take charge of their education. Students working on a project about global environmental challenges, for example, might use English-language sources for their study, communicate their findings in English, and use proper syntax and vocabulary while presenting their ideas. Through this approach, students' critical thinking skills and confidence in their ability to communicate authentically in English are both enhanced. PBL's collaborative aspect also reflects the needs of international workplaces, where proficient English communication and teamwork are crucial (Saleh et al., 2022).

However, considerable preparation and assistance are needed for PBL to be implemented successfully in English language classrooms. The literature outlined a number of difficulties, such as the requirement that teachers receive PBL methodology training, have access to real English resources, and have enough time to finish projects (Harris & Rooks, 2020). By assisting students with the project process, structuring language acquisition, and assisting students in acquiring the English language proficiency required for success, teachers play a crucial role in supporting PBL. Teachers may find it difficult to apply PBL

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successfully without the right guidance and assistance, especially when juggling the dual objectives of language and skill development.

Additionally, PBL's incorporation of technology presents both opportunities and challenges, particularly for English language learners. Even though technology improves digital literacy and English communication—for example, by allowing students to work together virtually or make multimedia presentations—it also necessitates that educational institutions have the infrastructure in place to facilitate these activities. To give every student the chance to thrive in PBL, it is crucial to guarantee fair access to digital tools and English-language resources.

The Project-Based Learning is a potent instrument for fostering language competency and 21st-century abilities in contemporary English teaching, as this narrative literature review illustrates. PBL provides students with the tools they need to communicate well in a variety of international contexts by encouraging critical thinking, creativity, teamwork, communication, and digital literacy within the framework of learning English. However, sustained teacher support, enough funding, and a dedication to incorporating technology into the classroom are necessary for successful adoption. PBL provides a viable framework for developing the abilities students need to prosper in a world that is becoming more linked as English education continues to change in response to the problems of the twenty-first century.

E. Conclusion and Suggestion

The application of Project-Based Learning (PBL) as a pedagogical strategy to foster 21st-century competencies in contemporary education, including critical thinking, creativity, teamwork, communication, and digital literacy, was investigated in this study. The results, which are based on a conceptual framework approach and narrative literature evaluation, confirm that PBL is very successful in developing these critical abilities, meeting the needs of both the workforce and modern education. PBL frequently uses technology to support research, teamwork, and presentations, giving students the opportunity to become proficient with digital tools and learn how to critically evaluate information. Teachers are essential in helping kids learn, and they may find it difficult to use PBL successfully if they don't have the right support. PBL is an effective teaching strategy that gives students the critical 21st-century abilities they need to succeed in the contemporary world. This study's dependence on a narrative literature review, which might not fully represent the range of empirical data on PBL implementation in various educational contexts, is a limitation.

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