

Voices from the Field: English Education Students' Perceptions of Research Readiness After Project-based Blended Learning Experiences

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ABSTRACT

Research competence is a key requirement for pre-service English teachers, yet its development remains a challenge. Project-Based Blended Learning (PjBBL), known for promoting engagement and autonomy, holds potential to address this issue. However, its influence on students' research readiness is still underexplored. This study investigates English education students' perceptions of their research readiness after engaging in PjBBL. Using a mixed-methods approach, data were collected through surveys, interviews, and focus group discussions with undergraduate students enrolled in a research methods course. Findings indicate that PjBBL enhances foundational research skills, critical thinking, and collaboration but presents challenges in advanced data analysis, time management, and resource accessibility. The study underscores the need for structured guidance, resource support, and training in research methodologies. Future research is encouraged to explore longitudinal impacts of PjBBL on research competence and to examine its integration with digital tools for advanced data analysis and academic writing.

KEYWORDS:

Blended learning;
English education;
Project-based blended learning (PjBBL);
Research readiness;
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Introduction

The need to strengthen research skills among English education students has prompted shifts in instructional strategies within higher education. In the 21st century, research competency is fundamental for students pursuing higher education, as it fosters critical thinking, problem-solving, and academic inquiry (Ariani et al., 2023). With the rise of blended learning—an approach that integrates face-to-face instruction with online learning environments—students are experiencing new methods of acquiring research skills (Suana et al., 2023). As an integral part of blended learning, online learning allows students to access educational resources beyond physical classrooms, facilitating more flexible and personalized learning experiences

(Asi et al., 2024). Among the various instructional strategies, Project-Based Learning (PBL) has been widely recognized as a powerful approach that promotes student engagement and independent learning (Sulastri et al., 2023). Integrated within a blended learning framework, Project-Based Blended Learning (PjBBL) enables students to engage in meaningful research experiences across digital platforms and conventional classroom settings (Knoblauch, 2022). This hybrid model has been particularly beneficial in fostering self-directed learning, collaboration, and research autonomy, as students engage in inquiry-based projects with digital tools and classroom-based mentorship (Fahlevi, 2022).

Despite the pedagogical advantages of PjBBL, its role in strengthening research readiness among English education students remains underexplored. Previous studies have primarily examined its impact on language proficiency, student motivation, and critical thinking (Fahlevi & Jabnabillah, 2023; Firdayanti et al., 2022). However, fewer studies have addressed students' perceived preparedness to undertake independent research following PjBBL experiences. While some research—such as that of Barbosa (2022)—has touched upon students' adaptation to research tasks in technology-rich learning environments, investigations into how PjBBL supports the acquisition of concrete research skills (e.g., designing frameworks, analyzing data, and composing academic reports) are still limited. Furthermore, studies focusing on PjBBL in teacher education often highlight its cognitive and collaborative benefits (Hudayana et al., 2022), yet rarely assess its influence on pre-service teachers' confidence in conducting independent academic inquiry. Research on blended learning, in general, has tended to emphasize its impact on academic performance and engagement metrics (Hujjatusnaini et al., 2022), rather than exploring how such models foster students' self-efficacy in applying higher-order thinking skills—such as analytical reasoning and evaluation—within real research contexts. Although these skills are often associated with blended PBL environments, their practical transfer to research-based activities remains uncertain.

Thus, this study addresses this gap by exploring English education students' perceptions of their research readiness following their engagement in Project-Based Blended Learning. Understanding their perspectives is essential for refining instructional strategies and ensuring that PjBBL effectively supports research skill development. Furthermore, this study seeks to contribute to the growing discourse on the intersection of digital and experiential learning in teacher education programs (Islami & Nikensari, 2023). By examining the perceived strengths and challenges of PjBBL in research preparation, this study aims to inform future curriculum enhancements that better equip students for academic inquiry and knowledge production.

A review of recent studies suggests that while PjBBL fosters analytical thinking and knowledge retention, students often struggle with applying research methodologies in real-world contexts (Marsiti et al., 2023). Additionally, research on integrating PjBBL and MOOCs in research training remains scarce (Risdianto et al., 2023). Previous research has emphasized the efficacy of PjBBL in improving student engagement and learning outcomes (Kusnadi et al., 2023). However, there is still a lack of in-depth studies examining how students assess their readiness and confidence to conduct independent research after participating in PjBBL. Most existing research focuses on performance metrics, such as test scores and competency assessments, rather than qualitative insights into students' confidence and readiness (Lin, 2024). Studies such as those by Agustina et al. (2022) and Hudayana et al. (2022) have demonstrated that PjBBL enhances collaboration and scientific literacy, but they primarily focus on content knowledge acquisition rather than developing independent research skills.

Similarly, Saptayana et al. (2023) demonstrated that PjBBL, assisted by digital tools such as Quizizz, significantly improved students' problem-solving skills and academic performance, highlighting the potential of digital integration in project-based instruction. However, these studies have primarily focused on cognitive and performance-based outcomes rather than students' perceptions of their research readiness. Studies by Tureni and Dhafir (2020) confirmed the effectiveness of PjBBL in enhancing academic achievement in higher education settings, yet further qualitative insights into students' preparedness for independent research remain unexplored.

The objectives of this research are to analyze English education students' perceptions of their research readiness after participating in project-based blended learning; to identify the perceived benefits and challenges of PjBBL in research skill development; and to explore the extent to which PjBBL supports students in acquiring practical research competencies applicable to academic and professional contexts. The significance of this study lies in its contribution to the ongoing development of innovative pedagogies in higher education. By providing empirical evidence on students' experiences with PjBBL, this research can guide educators in designing curricula that effectively balance experiential learning with research preparation. Moreover, the findings can offer insights for policymakers seeking to integrate blended learning approaches in teacher education programs to enhance research proficiency (Mielikäinen et al., 2024). Ultimately, this study aspires to support future English educators in becoming competent researchers, equipped with the skills necessary to contribute to the academic and professional landscape. By providing empirical insights into students' experiences, the findings can help educators refine instructional strategies for research-based learning (Putri & Dwikoronto, 2022) and guide policymakers in designing curricula that balance experiential learning with research preparation (Permana et al., 2021).

Method

This study adopted a convergent parallel mixed-methods research design, which involves the simultaneous collection and separate analysis of both quantitative and qualitative data, followed by the integration of results to gain a comprehensive understanding of the phenomenon (Cresswell & Clark, 2007). By employing this design, the study aimed to capture both the breadth and depth of English education students' perceptions of research readiness after engaging in Project-Based Blended Learning (PjBBL).

The participants consisted of undergraduate English education students enrolled in a Research Methods in ELT course at a university. Purposive sampling was employed to ensure that all participants had prior experience with PjBBL. A total of 77 students participated, representing a diverse range of academic backgrounds and learning experiences.

Data collection was carried out through surveys, semi-structured interviews, and focus group discussions. The survey included a combination of Likert-scale and open-ended questions designed to assess students' perceptions of their research readiness, confidence in applying research methodologies, and perceived challenges. Semi-structured interviews provided deeper insights into students' experiences with PjBBL and their self-assessed preparedness for academic research. Focus group discussions facilitated collaborative reflections on the benefits and limitations of PjBBL in developing research skills.

The collected data were analyzed using both quantitative and qualitative techniques. Survey responses were analyzed using descriptive statistical methods, such as mean analysis, to identify trends and differences in research readiness levels (Field, 2018). Qualitative data

from interviews and focus groups were subjected to thematic analysis to identify recurring themes and patterns related to students' experiences, attitudes, and challenges (Braun & Clarke, 2006).

To ensure rigor and trustworthiness in the qualitative component, the study employed triangulation, member checking, and inter-rater reliability assessments. Triangulation was achieved by cross-verifying findings from multiple data sources to enhance credibility (Patton, 2015). Member checking involved participants reviewing their responses to ensure accuracy (Lincoln & Guba, 1985), while inter-rater reliability was established by having multiple researchers independently code and verify qualitative themes, ensuring consistency and reducing bias.

Results

This research aimed to analyze English education students' perceptions of their research readiness after participating in Project-Based Blended Learning (PjBBL), identify the perceived benefits and challenges of PjBBL in research skill development, and explore the extent to which PjBBL supports students in acquiring practical research competencies applicable to academic and professional contexts. Data were collected through surveys, interviews, and focus group discussions (FGDs). Below is a detailed summary of the findings, starting with the demographic profile of the participants, followed by the analysis organized by research objectives.

Demographic Profile of Participants

The participants in this study were English education students from various semesters, with a focus on Semester 6 and Semester 8 students. The demographic data collected from the survey is summarized in the Table 1.

Table 1. *Demographic Profile of Participants*

Demographic Category	Subcategory	Percentage
Semester Distribution	Semester 6	60%
	Semester 8	40%
Gender Distribution	Female	70%
	Male	30%
Prior Research Experience	Yes	45%
	No	55%

The demographic data indicates that the majority of participants were in their sixth semester, with a higher proportion of female students. Additionally, more than half of the participants had no prior research experience, which is relevant to understanding their perceptions of research readiness and the impact of PjBBL.

Students' Perceptions of Their Research Readiness after Participating in PjBBL

Students generally felt confident in basic research skills, such as formulating research questions and conducting literature reviews. According to the survey in Table 2, students reported high confidence in formulating research questions (average score: 4.0) and

conducting literature reviews (average score: 4.1). Interviews and FGDs supported these findings, with participants expressing confidence in designing research studies and synthesizing academic sources. However, students faced challenges with more advanced tasks, such as data analysis and applying theoretical concepts in practical settings. The survey in Table 3 revealed that students found it moderately difficult to apply theoretical research concepts (average score: 3.5), and time constraints were a significant barrier (average score: 3.8). Interviews and FGDs further highlighted difficulties with data analysis tools (e.g., SPSS, Jamovi) and balancing research tasks with other responsibilities.

Table 2. Confidence in research skills (survey results)

Skill	Average Score	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Formulating research questions	4.0	0%	5%	20%	50%	25%
Conducting literature reviews	4.1	0%	3%	15%	55%	27%
Choosing appropriate methodologies	4.2	0%	2%	10%	50%	38%
Collecting and analyzing data	4.0	0%	5%	20%	50%	25%

Perceived Benefits and Challenges of PjBBL in Research Skill Development

PjBBL was perceived as highly effective in improving students' research skills. The survey showed that 83% of respondents agreed or strongly agreed that PjBBL helped improve their research skills (average score: 4.2). Interviews and FGDs revealed that students appreciated the hands-on, collaborative nature of PjBBL, which enhanced their critical thinking, problem-solving, and teamwork skills. Many students noted that PjBBL allowed them to apply theoretical knowledge to real-world research projects, making the learning process more engaging and practical.

However, PjBBL also presented challenges. Time management was a major issue, with 75% of survey respondents agreeing or strongly agreeing that time constraints were a significant challenge (average score: 3.8). Interviews and FGDs further emphasized difficulties in accessing academic resources, such as journals and books, and understanding research methodologies. Students also struggled with data analysis tools, which hindered their ability to fully develop their research skills.

Table 3. Perceived benefits and challenges of PjBBL

Skill	Average Score	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
PjBBL improved research skills	4.2	0%	2%	15%	50%	33%
Difficulty applying theoretical concepts	3.5	5%	10%	30%	40%	15%
Time constraints	3.8	0%	5%	20%	50%	25%

Support of PjBBL in Acquiring Practical Research Competencies

PjBBL was effective in helping students acquire practical research competencies. The survey showed that students felt confident in understanding qualitative, quantitative, and mixed research approaches (average score: 4.3). Interviews and FGDs highlighted the practical

aspects of PjBBL, such as designing and implementing research studies, analyzing data, and drawing conclusions. These hands-on experiences were seen as crucial for developing practical research skills applicable to academic and professional contexts.

However, students also identified areas for improvement. They requested more hands-on practice, better access to resources, and additional training sessions on data analysis tools and research methodologies. The survey in Table 4 indicated a strong need for more training (average score: 4.1), and interviews and FGDs emphasized the importance of structured guidance and mentoring to help students navigate the research process.

Table 4. *Suggestions for Improvement*

Skill	Average Score	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Need for more training	4.1	0%	3%	15%	50%	32%
Better access to resources	4.0	0%	5%	20%	50%	25%
Structured guidance	4.2	0%	2%	10%	50%	38%

Discussion

The findings of this study provide valuable insights into the effectiveness of project-based blended learning (PjBBL) in enhancing English education students' research readiness. By analyzing survey, interview, and focus group discussion (FGD) data, this research highlights the strengths, challenges, and areas for improvement in PjBBL as a pedagogical approach for developing research competencies.

The study reveals that students generally feel confident in basic research skills, such as formulating research questions and conducting literature reviews. This aligns with the theoretical framework of PjBBL, which emphasizes active learning and practical application. The hands-on nature of PjBBL allows students to engage directly with research tasks, fostering confidence in foundational skills. For example, one student in the FGD mentioned, "PjBBL helped me understand how to design a research study step by step, which made me feel more prepared to conduct independent research." This finding is consistent with the constructivist learning theory, which posits that students learn best through active engagement and real-world application (Dewey, 1938; Vygotsky, 1978).

However, the findings also highlight significant challenges in advanced research skills, particularly in data analysis and applying theoretical concepts. One interviewee noted, "I still struggle with data analysis because I don't fully understand how to use tools like SPSS or Jamovi." This suggests a gap between theoretical knowledge and practical application, which is a common issue in research education (Biggs & Tang, 2011). Recent studies on PjBBL have similarly found that while students gain confidence in foundational skills, they often struggle with advanced tasks (Kurniawan et al., 2024), such as data analysis and methodological application. Thus, educators should focus on bridging the gap between theory and practice by incorporating more hands-on exercises, such as data analysis workshops and case studies, into the curriculum. This would help students develop the technical and analytical skills needed for advanced research tasks.

One of the most significant findings is the positive impact of PjBBL on collaboration and practical application. Students reported that PjBBL enhanced their critical thinking,

problem-solving, and teamwork skills. The collaborative nature of PjBBL projects allowed students to share ideas, divide tasks, and learn from one another, which is consistent with the social constructivist approach to learning (Vygotsky, 1978). For instance, a participant in the FGD shared, "Working in a team helped me see different perspectives and approaches to solving research problems, which I wouldn't have thought of on my own." Additionally, the practical, project-based nature of PjBBL enabled students to apply theoretical knowledge to real-world research scenarios, making the learning process more engaging and relevant. As one interviewee stated, "PjBBL gave me the opportunity to work on a real research project, which made the concepts I learned in class much more meaningful." Recent studies have also highlighted the benefits of PjBBL in fostering collaboration and practical skills (Joshi et al., 2023; Sarwadi et al., 2024). Therefore, institutions should continue to emphasize collaborative projects in PjBBL but provide structured guidance to ensure that all students contribute equally and benefit from the collaborative process. This could include clear role assignments, regular check-ins, and peer feedback mechanisms.

Despite its benefits, PjBBL presents several challenges, particularly in time management and access to resources. Students reported difficulties balancing research tasks with other academic and personal responsibilities, which is a common issue in project-based learning (Agustina et al., 2022; Alamri, 2021). For example, one student in the FGD mentioned, "I found it hard to manage my time because I had to juggle research tasks with other assignments and personal commitments." Additionally, many students faced challenges accessing academic resources, such as journals and research tools, due to paywalls or limited availability. One interviewee shared, "I couldn't access some of the journals I needed for my research because they were behind a paywall, which slowed down my progress." These barriers hindered their ability to fully develop their research skills. Recent studies have similarly identified time management and resource access as significant challenges in PjBBL (Barbosa, 2022; Lu et al., 2023). The findings highlight the importance of addressing logistical and resource-related barriers in project-based learning. While PjBBL is effective in fostering engagement and practical skills, its success depends on adequate support systems, including time management strategies and access to resources. Thus, institutions should provide students with better access to academic resources, such as journals, books, and software, through partnerships with libraries or academic institutions. Additionally, workshops on time management and task prioritization could help students balance their workload more effectively.

Students' suggestions for improvement centered on the need for more hands-on practice, better access to resources, and structured guidance. These recommendations align with the challenges identified in the study and provide actionable insights for enhancing PjBBL. For example, one student in the FGD suggested, "We need more practice with data analysis tools like SPSS or NVivo because it's hard to learn just from lectures." Another interviewee emphasized the importance of structured guidance, stating, "I would have benefited from more step-by-step instructions, especially when it came to choosing the right research methodology." These findings support a study conducted by Alamri (2021), who emphasized the need for structured guidance and hands-on practice in PjBBL to enhance student learning outcomes. Therefore, educators should incorporate more hands-on practice into the curriculum, such as mini-research projects or case studies, to help students apply theoretical concepts. Additionally, structured guidance, such as step-by-step instructions and mentoring sessions, could help students navigate the research process more effectively.

The findings of this study have broader implications for research education in higher education. First, they highlight the importance of active learning and practical application in developing research competencies. PjBBL, as a pedagogical approach, effectively engages students in the research process and prepares them for academic and professional contexts. However, the study also underscores the need for adequate support systems, including access to resources, time management strategies, and structured guidance, to ensure the success of project-based learning.

Second, the findings suggest collaboration is a key component of effective research education. By working together on research projects, students develop not only technical skills but also teamwork and communication skills, which are essential for success in both academic and professional settings (Mydin et al., 2021). For example, one student in the FGD noted, “Collaborating with my peers helped me learn how to communicate my ideas more effectively and solve problems as a team.” His statement illustrates how the collaborative aspect of PjBBL not only enhances interpersonal communication but also builds students’ capacity for teamwork—an essential skill in both academic research and professional contexts. Through peer interaction, students were able to exchange perspectives, refine their thinking, and jointly navigate research challenges, which reflects the social constructivist principle that learning is shaped through collaboration and shared experiences (Vygotsky, 1978).

Finally, the study highlights the importance of addressing equity issues in research education. Access to resources, such as journals and software, is a significant barrier for many students, particularly those from underprivileged backgrounds. Institutions must take steps to ensure that all students have equal access to the resources they need to succeed. Recent research has emphasized the need for equitable access to resources in PjBBL to ensure that all students can benefit from the approach (Barbosa, 2022; Lu et al., 2023).

Conclusion

This study investigated English education students’ perceptions of their research readiness after participating in Project-Based Blended Learning (PjBBL). The results show that PjBBL effectively supports the development of essential research competencies, particularly in foundational areas such as formulating research questions, conducting literature reviews, and choosing appropriate methodologies. Collaborative activities within PjBBL also foster critical thinking, teamwork, and problem-solving skills crucial for independent academic inquiry.

However, students still encountered several challenges. These included difficulties in applying advanced research methods, analyzing data, and managing time. Many participants also struggled with limited access to academic resources and a lack of familiarity with digital research tools, underscoring the need for institutional support in these areas.

Based on these findings, this study concludes that while PjBBL is a promising approach to research education, its success depends on the integration of structured guidance, improved access to resources, and targeted training—particularly in data analysis and time management. Enhancing these components can help bridge the gap between theoretical learning and practical research application, leading to greater research autonomy and confidence among pre-service teachers.

Despite its contributions, the study has limitations. It focused on a specific population of English education students and relied on self-reported data, which may not fully represent

actual competence levels. Future research should consider longitudinal designs or performance-based assessments to explore the long-term effects of PjBBL on research readiness. Additionally, examining the roles of instructor support and peer collaboration across diverse contexts could provide deeper insights into optimizing this model.

In summary, this study reinforces the value of constructivist, inquiry-based learning in teacher education and offers practical recommendations for strengthening the implementation of PjBBL. By refining pedagogical strategies and institutional support systems, PjBBL can be more effectively utilized to prepare future English teachers as competent, confident researchers.

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