

Research Article

Developing a Student-Centered Project-Based Learning Model for English Writing: Insights from ESL Learners

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Abstract: This study develops a student-centered project-based learning (PJBL) model tailored to enhance Keywords: English writing skills for ESL learners by addressing challenges and leveraging effective strategies identified Project-based through their experiences. A qualitative case study approach was employed, and data were collected from nine learning ESL learners in Malaysia through semi-structured interviews conducted over nine weeks. Key challenges included linguistic barriers, time management, group dynamics, and workload. Students employed peer ESL writing collaboration, online research, and iterative drafting strategies to overcome these obstacles. Based on these, the Model development study proposes a six-phase PJBL model integrating reflective practices, structured feedback, and continuous support to address these challenges. The phases include pre-writing, drafting, revising, editing, assessment, and Writing challenges feedback, emphasizing collaboration, critical thinking, and adaptability. This framework provides a structured English language yet flexible approach to improving writing skills while fostering transferable skills like teamwork and resilience. teaching The findings contribute to the growing body of research on PJBL by offering actionable insights for educators and policymakers to implement effective learner-centered writing frameworks. The proposed model enhances ESL writing proficiency and prepares students for academic and professional success in diverse contexts.

Anahtar Sözcükler: İngilizce Yazma Becerileri için Öğrenci Merkezli Proje Tabanlı Öğrenme Modeli Geliştirme: İkinci Dil Olarak İngilizce Öğrenenlerin Görüşleri

Proje tabanlı Özet: Bu çalışma, yazma becerilerini geliştirmek amacıyla, öğrencilerin deneyimlerinden hareketle tespit edilen öğrenme zorlukları ve etkili stratejileri ele alan öğrenci merkezli bir proje tabanlı öğrenme modeli geliştirmeyi İngilizce yazma amaçlamaktadır. Çalışmada nitel araştırma yaklaşımı benimsenmiş ve veriler, Malezya'da eğitim görmekte olan dokuz öğrenciyle dokuz hafta boyunca yürütülen yarı yapılandırılmış görüşmeler yoluyla toplanmıştır. Öğrencilerin Model geliştirme karşılaştığı temel zorluklar arasında dilsel engeller, zaman yönetimi, grup dinamiği ve iş yükü yer almıştır. Katılımcılar, bu engellerin üstesinden gelmek için akran iş birliği, çevrimiçi araştırma ve tekrarlı taslak hazırlama Yazma zorlukları stratejilerini kullanmışlardır. Bu bulgulara dayanarak, söz konusu zorlukları ele almak üzere yansıtıcı uygulamalar, İngilizce öğretimi yapılandırılmış geri bildirim ve sürekli destek mekanizmalarını içeren altı aşamalı bir model önerilmektedir. Modelin aşamaları; ön yazma, taslak oluşturma, gözden geçirme, düzeltme, değerlendirme ve geri bildirim şeklinde düzenlenmiş olup, iş birliği, eleştirel düşünme ve uyum sağlama becerilerini vurgulamaktadır. Bu çerçeve, öğrencilerin yazma becerilerini geliştirmelerine yönelik yapılandırılmış ancak esnek bir yaklaşım sunarken, aynı zamanda takım çalışması ve dirençlilik gibi aktarılabilir becerileri de desteklemektedir. Bulgular, proje tabanlı öğrenme modeli alanındaki araştırmalara katkı sağlamakla birlikte, eğitimciler ve politika yapıcılar için uygulanabilir öneriler sunmaktadır. Önerilen model, öğrencilerinin yazma becerilerini artırmakla kalmayıp, akademik ve profesyonel bağlamlarda başarıya hazırlayan bir çerçeve sunmaktadır.

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1. Introduction

Writing is a cornerstone of effective communication and academic success, particularly for learners of English as a second language (ESL). It transforms abstract ideas into tangible expressions, fostering critical thinking and creative articulation. According to Nurul Farihah et al. (2024a), writing is considered a productive skill as it requires the writer to form something intangible to something tangible: form ideas, opinions, and feelings into writing. Hence, it is a critical skill for ESL learners, fostering academic success and effective communication. Despite its importance, writing remains one of the most challenging skills for ESL students to master. However, writing requires students to understand its complex rules and learn new related skills, making them perceive writing as challenging to master (Hassan et al., 2021). Moreover, the writing process involves many stages, which are pre-writing, drafting, revising, and editing, which undoubtedly contributes to the complexity of writing (Nurul Farihah et al., 2024b). Ceylan (2019) also noted that lacking basic fundamental strategies and writing contributes to writing challenges. Previous models used to improve students' writing skills include using digital learning platforms for collaborative learning (Üstünbaş, 2023).

One way to overcome the difficulties is through traditional learning classrooms. However, limitations occur. Siddiqui (2020) stated that applying traditional classroom learning in writing through rote learning, grammar-fixated writing, and ineffective feedback has impeded students' ability to write a proper paragraph. Nurul Farihah et al. (2024a) suggested a shift from a traditional classroom environment focused on the teacher to a more dynamic classroom environment focused more on the students. To overcome the problems faced in writing, project-based learning (PJBL) emerged as a learner-centered approach, allowing students to engage in authentic, collaborative tasks in the writing classroom. Deveci (2018) defined PJBL as an approach that enables students to engage in a complex, real-world project that allows them to explore and apply their knowledge holistically. PJBL is a learning model based on constructivist theory (Chen & Yang, 2019). Applying PJBL in the constructivist model allows students to learn best by engaging in a hands-on learning activity that will allow them to actively construct their knowledge on writing skills while working collaboratively with peers. This is supported by Chen and Yang (2019) and Vogler et al. (2018), who stated that PJBL is one of the most recent models that allow students to engage in real-life problems and hands-on learning opportunities. Although PJBL is a student-centered approach, it does not deny the role of a teacher in the classroom. Teachers in the PJBL model classroom are responsible as facilitators to guide and assist the students in completing the project, while students are responsible for demonstrating their skills (McMahan-Krepop, 2020).

This study is grounded in constructivist learning theory, where students build their knowledge based on past experiences and prior knowledge. It is grounded in Piaget's cognitive constructivism, Vygotsky's sociocultural theory, and Dewey's experiential learning; Piaget emphasized that learners construct knowledge through active experiences, progressing through stages of cognitive development. Vygotsky's zone of proximal development (ZPD) highlights the role of peer collaboration and scaffolding, where students improve through guided interaction with teachers and peers. Dewey's learning-by-doing approach supports active engagement in real-world writing tasks. PJBL first emerged based on the idea of experiential learning by Dewey (Deveci, 2018). The learning model encourages a learning environment of 'learning by doing' by working in a hands-on experience, allowing the students to participate in the learning experiences. By encouraging exploration through the PJBL model, students are expected to improve their creativity and critical thinking skills, improving language skills, mainly writing. These theories align with PJBL, which fosters

student autonomy, critical thinking, and collaboration, reinforcing that knowledge is best constructed through meaningful, hands-on experience.

1.1. Problem Statement

Writing has been acknowledged as one of the language skills to master worldwide (Abdul Rahman et al., 2020; Akhtar et al., 2019; Bulqiyah et al., 2019; Huang et al., 2022). Bulqiyah et al. (2021) highlighted two writing challenges the students face: affective and cognitive problems. Affective problems stem from students' and teachers' attitudes during teaching and learning, usually characterized by ineffective teaching and learning strategies. Affective challenges in writing, as reported in previous studies, include low self-confidence, lack of motivation, lack of feedback, and limited practice opportunities (Abdul Rahman et al., 2020; Akhtar et al., 2019; Bulqiyah et al., 2021; Hassan et al., 2021; Ismayanti & Kholiq, 2020; Quvanch & Si Na, 2020). On the other hand, cognitive challenges are described as problems that result from the writing process itself, and they typically involve linguistic issues. Previous studies have highlighted cognitive challenges in writing, which include problems in grammar, vocabulary and syntax, language transfer, and problems in understanding their written work (Abdul Rahman et al., 2020; Akhtar et al., 2019; Bulqiyah et al., 2019; Bulqiyah et al., 2021; Ghulamuddin et al., 2021; Huang et al., 2022; Sabarun, 2019; Toba et al., 2019). Academic writing is difficult due to its iterative process involving multiple steps (Zorba, 2023).

Ceylan (2019) suggested that the writing difficulties faced by the students stem from inadequate fundamental writing strategies in the process of writing. The process of writing includes pre-writing, drafting, revising, and editing. Previous research on writing strategies has been conducted in Malaysia, focusing on blended learning strategies. However, gaps and limitations of using blended learning strategies were identified when it was found that the strategy poses challenges for the teachers to supply enough materials based on students' needs (Abdul Rahman et al., 2020). Other findings also suggest that blended learning strategies in writing impeded students' self-directed learning abilities and limited classroom abilities (Hassan et al., 2021). Moreover, implementing traditional classroom learning in writing through rote learning, grammar-fixated writing, and ineffective feedback has impeded students' ability to write a proper paragraph (Siddiqui, 2020). Additionally, the traditional teaching-learning environment is teacher-centered, providing limited space for students to think critically and work collaboratively, impeding their creative and critical thinking skills (Sinaga, 2019). Additionally, the environment will lead to passive writing instructions, which focus solely on grammar instead of idea development, which limits students' ability to develop ideas creatively in writing skills (Mukminatien, 2020). The method is ineffective in cultivating students' creative and critical thinking skills. In the academic realm, critical thinking skills are vital to success across multiple disciplines, including developing writing skills, where students must articulate their ideas coherently, with logic and clarity (Alpat & Gorgulu, 2024).

To address the needs, PJBL provides a solution as it encourages both individual growth and collaborative work. Writing through PJBL enables students to work collaboratively while engaging in deep and individual learning (Sukerti & Yuliantini, 2018). However, while PJBL has been widely explored in education, limited studies specifically address its application to ESL writing. Despite its advantages, the implementation of PJBL in higher education remains limited, equating to 20% prevalence (Chen & Yang, 2019). Hence, this study aims to fill this gap by developing a student-centered PJBL model tailored to the needs of ESL learners. This research seeks to provide actionable insights for educators and policymakers by examining

their challenges and strategies. The proposed model aspires to enhance writing proficiency and equip students with transferable skills for lifelong learning.

1.2. The Present Study

This research aims to develop a student-centered PJBL model tailored for English writing improvement, focusing on the challenges ESL learners face and their strategies for overcoming these obstacles. Hence, the research questions of this research are as follows:

- 1. What are the key challenges ESL students face during PJBL implementation in writing?
- 2. How do ESL students overcome these challenges?
- 3. What is the suitable PJBL model to enhance ESL writing skills?

1.3. Literature Review

1.3.1. PJBL

PJBL emphasizes experiential learning through real-world tasks. It is grounded in Dewey's constructivist principles, which enable students to construct knowledge collaboratively. Learning through PJBL enables students to be responsible for their learning process, as they are required to be active learners, and students also need to work collaboratively in a group (Thomas, 2000). It is advocated that students 'learn by doing,' where students are involved in real-life tasks and challenges (Allazzam, 2015). In PJBL, students will be involved in meaningful learning activities based on experiential learning, as students are responsible for their learning. This happens when students can engage in real-world situations while working collaboratively, thus encouraging 'learning by doing.' Praba et al. (2018) suggest that the definition of PJBL is a model that dynamically engages students in various activities designed to produce learning outcomes through project-based tasks. This is true due to the PJBL concept of 'learning by doing,' which revolves around real-world tasks and meaningful questions, where students must be responsible for learning to find relevant answers to the given questions. Similarly, Mudiono (2024) states that PIBL is a teaching method that considers students a central part of the learning environment, making it student-centered. Meanwhile, Zhao and Wang (2022) describe PJBL as an innovative teaching and learning approach that prioritizes students centered learning. Using PJBL in teaching and learning helps students construct new knowledge on top of their prior knowledge by executing the project tasks and enhancing students' problem-solving abilities.

Studies show that PJBL enhances problem-solving, critical thinking, and engagement in various educational contexts, including language learning. PJBL requires students' active participation as they work collaboratively to understand, investigate, and solve problems while teachers guide and facilitate them (Roisatin et al., 2022). Although PJBL is a student-centered approach, it does not deny the role of a teacher. The teacher's role is crucial in learning, and they are the mediators that provide learning objectives and initiate students' learning construction (Rodriguez-Barboza et al., 2024). Additionally, Larmer et al. (2015) have outlined the principles of PJBL: challenging problems or questions, sustained inquiry, authenticity, student voice and choice, reflection, critique and revision, and public product. Therefore, students can engage in student-centered learning, fostering their collaborative, critical thinking, problem-solving, and creativity skills while being facilitated by the teachers.

1.3.2. PJBL in writing

Praba et al. (2018) describe writing as a productive and cognitive skill as students must learn, understand, apply, and synthesize new knowledge. Concerning PJBL, students are required to solve real-life writing tasks. For example, writing a report, review, or proposal based on a topic related to real-world situations. This is supported by Khalili and Ravand (2017), who stated that the basis of PJBL lies in the ability of students to gain new knowledge by solving problems when real-world issues stimulate their interest, and it also helps promote deep thinking. Using writing in PJBL has been proven to improve students' critical thinking and problem-solving skills (Al-Busaidi & Al-Seyabi, 2021; Deveci & Nunn, 2018; Kemaloğlu-Er & Sahin, 2022). When students are exposed to writing tasks in the PJBL context, they can actively participate in their learning process while improving their social skills as they work collaboratively to produce a well-written paragraph. Previous studies have shown that using PJBL in the context of writing helps improve the collaboration and teamwork skills of students as they work together on a project (Cao et al., 2021; Chen, 2021; Kemaloğlu Er, 2022; Praba' et al., 2018; Samarji, 2020; Yunus et al., 2020). A collaborative environment is also gained when the students receive and provide feedback to one another and from the teachers, which ultimately improves students' social and communication skills (Cao et al., 2021; Chen, 2021; Deveci, 2018; Praba'et al., 2018).

Moreover, utilizing PJBL in writing enables students to engage in a meaningful learning process as they 'learn by doing' (Alwasilah, 2019; Samarji, 2020; Sudadi et al., 2021; Syarifah & Emiliasari, 2019). This is due to the foundation of PJBL, which is designed to be authentic and similar to daily life, encouraging the students to practice language skills within the PJBL context (Alwasilah, 2019). A previous study conducted by Samarji (2020) on the real-life problems of a community proved that students can improve their writing skills in a problem-solving essay. This is in line with Sudadi et al. (2021), who note that PJBL enables students to apply their previous knowledge to their current knowledge. Previous studies have shown that students viewed writing skills as a complex skill to master due to complex rules in writing (Hassan et al., 2021). However, it has been consistently proven that students' language skills, including writing, can be improved using PJBL (Chen, 2021; Grant, 2017; Samarji, 2020). Studies have also shown that PJBL implementation in the writing classroom can improve students' writing performance (Susanti et al., 2020). Students also showed high motivation and enjoyment in learning writing using PJBL (Grant, 2017; Sudadi et al., 2021; Tamimi & Salamin, 2020; Yasuta, 2018).

1.3.3. Challenges in ESL writing

The implementation of PJBL relies on various factors, posing challenges (Tamimi & Salamin, 2020). Firstly, PJBL is a highly time-consuming approach, requiring the tiniest details to be paid attention to (Habók & Nagy, 2016; Marx et al., 1997). The challenge occurred when students struggled to complete PJBL tasks along with demands from other coursework (Al-Busaidi & Al-Seyabi, 2021; Olizko, 2022; Tamimi & Salamin, 2020). However, students can allocate their time wisely by allocating the nighttime to focus on the PJBL tasks (Al-Busaidi & Al-Seyabi, 2021). Meanwhile, Deveci (2018) notes the challenge of conflicting schedules, which has affected the quality of work done due to the difficulties in coordinating group efforts. The challenges in time management resulted in students' dissatisfaction with their results and outcomes (Poonpon, 2017).

Moreover, PJBL requires a collaborative environment. Hence, unreliable and irresponsible group members have posed challenges for students in PJBL. Those students reportedly did careless

work by putting in minimal effort and resorting to last-minute work (Deveci, 2018; Kemaloğlu-Er, 2022; Olizko, 2022). As a result, other group members must assume additional responsibility to compensate for the irresponsible group members. Other than that, challenges in teamwork and collaboration in the PJBL in writing implementation may also be affected by cultural context. For example, a study reported that Ukrainians, who are used to working independently, struggled to cooperate in the PJBL environment (Olizko, 2022). However, Turkish students, who are used to living in a collective environment, reported participating actively and taking action and initiative to work collaboratively (Kemaloğlu-Er, 2022). Lastly, the heavy workload of PJBL has been reported as one of the main challenges in PJBL implementation due to its rigorous schedule and high workload, leaving students feeling overwhelmed and exhausted (Olizko, 2022; Kemaloğlu-Er, 2022; Kemaloğlu-Er & Sahin, 2022).

2. Method

2.1. Research Design

This study employed a qualitative case study approach. It aimed to investigate the challenges of PJBL in improving writing skills from the students' perspectives. The case study approach allowed the researchers to understand the relationship between PJBL and its impact on the challenges faced by ESL students.

2.2. Participants

The participants consisted of nine ESL students enrolled in a writing course at a public university on the east coast of Malaysia. The participants included five female and four male students, aged between 19 to 22 years old. The students were diploma students who were not from the English department. The participants were purposefully selected based on their enrollment in the writing course and willingness to engage in the PJBL activities.

Table 1.

Performance Level	Group Label	Class Label	Participants
High Performance	А	1, 2, 3	Student A1, Student A2, Student A3
Moderate Performance	В	1, 2, 3	Student B1, Student B2, Student B3
Low Performance	С	1, 2, 3	Student C1, Student C2, Student C3

Classification of participants

2.3. Data Collection

The project of this study required students to write an evaluative essay based on a news article collaboratively. Over nine weeks, students worked in groups of two to three, following the PJBL model. The implementation of PJBL activities was guided by PJBL's principles outlined by Stoller (2006) and PJBL activities outlined by Hamidah et al. (2020). Students were engaged in brainstorming sessions, conducted peer feedback exercises, and underwent teacher-guided revisions. The project phases included topic selection, research, drafting, peer review, editing, and final submission. The topics assigned for the essays were drawn from real-world issues, ensuring that students engaged in meaningful writing experiences. The structured implementation of PJBL ensured that students actively participated in their learning while developing their writing skills. This study utilized semi-structured interviews conducted over nine weeks. The questions focused on personal experiences and students'

challenges during the PJBL implementation in the writing classroom. The data collection procedure was guided by the work scheme and syllabus provided by the university.

2.4. Data Analysis

The findings were analyzed using a thematic analysis, following Braun and Clarke's (2006) steps. Recurring patterns were identified and categorized into challenges, strategies, and components for model development.

3. Findings

The findings indicate that students encountered challenges during the PJBL writing process, often stemming from their ESL backgrounds and personal learning environments. These challenges include linguistic barriers, time management issues, group dynamics, and heavy workload concerns. However, it was reported that students also demonstrated resilience and adaptability through various strategies, showcasing the transformative potential of PJBL. Table 2 summarizes these challenges and the strategies employed to overcome them.

Table 2.

Challenges and strategies in PJBL writing

Challenge	Description	Strategies used	
Linguistic barrier	Difficulty in coherence, vocabulary, and generating ideas	Conducted focus research, created outlines, and peer feedback.	
Time management	Struggles with balancing coursework and project deadlines	Allocated dedicated time slots and set personal deadlines.	
Group dynamic	Conflicts due to uneven work distribution	Set clear roles, mediated through teacher guidance.	
Heavy workload	Overwhelming due to PJBL tasks alongside other courses.	Task segmentation, peer collaboration, workload distribution	

3.1. Linguistic Barrier

Linguistic challenges emerged as a significant obstacle for many students. Common difficulties included maintaining coherence, selecting appropriate vocabulary, and generating ideas. For instance, Student A1 experienced difficulty adhering to word limits while maintaining coherence and challenges in developing main ideas and personal opinions.

Student A1: The challenge is on the word limits of the essay. The word limit is 400 words. It was a challenge because it became longer when we paraphrased the sentence. And there are lots of ideas from both of us when paraphrasing. So, we need to choose which is better and perfect for our writing. That is why, in this writing, many words exceeded the word limit. I also struggled at first to determine the main points. I initially encountered difficulties in structuring paragraphs coherently. So, the challenge was ensuring a smooth transition between ideas and maintaining a logical flow.

These issues were addressed by conducting focused research, creating comprehensive outlines, and refining topic sentences and transitions to achieve logical flow.

Student A1: To overcome the word limit problem, I prioritize the key points and ensure each paragraph contributes to the overall argument. For the struggle to determine the main point, I took a step back and conducted focused research to identify the core themes. I created a detailed outline. And to ensure coherence,

I start by incorporating a clear topic sentence at the beginning of each body paragraph and use transition words to link thoughts seamlessly. I utilized an outline and draft to refine the structure to address this.

Similarly, Student A2 faced challenges in generating self-opinions, which were overcome by conducting online research to scaffold and adapt their ideas into their work.

Student A1: Coming up with our own opinion was a bit difficult. Actually, I'm not really dedicated to my topic. So, I just googled some ideas and went off from there.

Student A3 struggled with essay organization, particularly structuring paragraphs and ensuring logical transitions. This was mitigated through collaborative efforts with peers and teacher guidance, emphasizing the importance of a supportive learning environment.

Student A3: Completing the essay is a little bit difficult. Maybe it is because I don't know much about the article's topic. I think I have some problems, such as a lack of understanding about the title, not having much knowledge and ideas, or stomach grammatical errors, and I also think that the problem I face in making a good essay is organizing the essay properly. Overall, it is actually okay because I have my friend to help me to write the essay. I need to learn how to write a good essay by asking my teachers or friends to organize the paragraph well.

3.2. Time management

Time management was another recurring challenge. Student C3 had difficulties coordinating with a partner who lacked time management skills, which was resolved by offering advice and reminders to improve prioritization.

Student C3: The second challenge is my partner. She has terrible time management skills when it comes to our discussions. My partner is always with her boyfriend, so I did not know what time we could discuss, although she did her work. But the time management is so bad. I even need to force her to meet our lecturer. But it's okay, I love her.

Student C3: I advise my partner to manage her time and remind her early before she does her activities. So that improved my partner's time management; she always prioritizes me.

Meanwhile, Student A3 managed time constraints by allocating additional study hours outside the class to meet deadlines effectively.

Student A3: Maybe it's time to discuss our essay. We have other assignments to do, and at the same time, we must finish the essay. To overcome this, we also wrote essays outside the classroom.

Time management was a significant hurdle in PJBL due to the self-directed nature of the approach, requiring students to develop independent study habits.

3.3. Group dynamics

The collaborative nature of PJBL revealed both opportunities and challenges in group dynamics. Students often faced interpersonal conflicts, disagreements among group members, peers with low confidence, and challenges in dominating group members. For example, Student A3 encountered challenges during group interaction when there were disagreements among each other. This was resolved through clear communication, seeking external opinions, asking and accepting opinions, and improved teamwork.

Student A3: I think we disagreed with my partner about our opinions and ideas. Because we have different opinions and ideas, I overcame it by asking other friends' opinions, giving in, and agreeing with my partner's opinion. We were not sure about each other's ideas, so we asked others and agreed on what the majority said. Luckily, my friend is reliable, and we did the work together and brainstormed together.

Another student, B1, reported that dealing with a low-confidence group member posed challenges to the project. However, peer encouragement helped build the student's confidence. "I'm not underestimating him, but he said his English is not good. And I understand. However, the challenge is convincing him that writing the essay is okay. I know because he actually did a pretty good job. There are just a few things that I changed in his sentences. So, I think the challenge is to convince my partner to write an English essay because he thinks that English writing is tough." – Student B1

Student B1: I need to encourage him. I think after I encouraged him, he gained some confidence to write.

In other cases, dominant group members overshadowed others, as reported by Student B3, creating tension and imbalance within the team. Strategies like active listening, fostering mutual respect, and involving teachers as mediators were employed to restore balance.

Student B3: My partner is good, but sometimes she is stubborn and adamant about her view. I think it is more about the way we try to understand and tolerate each other's perspectives. Student B3: I need to slow down, be tolerant, and give her room for her opinion. I have tried to tolerate her because we both have different views and ideas, and after we have had several discussions, we can finally give our final idea when developing the essay.

These experiences underscore the dual-edged nature of group work, which, while fostering collaboration, can also present challenges that require practical conflict-resolution skills. The findings highlight the importance of clearly defined roles and accountability measures, further underscoring the importance of structured team management.

3.4. Heavy Workload

The intensive demands of PJBL often led to mental exhaustion and feelings of being overwhelmed. Students B1, B2, and C3 reported finding the workload daunting, particularly when adapting to the project in the early process.

Student B1: At the beginning of the semester, I think it's pretty hard because I don't know the whole thing about what we should do and how to do it. Student B2: At first, I admit it was difficult.

Student C3: This one is heavy for me because I hate doing essays, actually. Because I used to push my brain to find the words and the idea, I needed to understand what the article said.

Over time, students like B1 and C3 adapted by understanding the importance of evaluative writing and conducted additional research to improve the challenges faced.

Student B2: After the article was finally accepted, I understood why it is important for me to meet the requirements for the most suitable article. Student C3: I researched how to write an article review essay to fix my vocabulary and grammar problems.

Collaborative efforts, focused research, teacher guidance, peer encouragement, and strategic time management emerged as key strategies for mitigating these pressures. These findings highlight the complexity of implementing PJBL in ESL contexts, emphasizing its challenges and growth opportunities. Students overcame obstacles and developed critical academic skills through structured guidance and reflective practices.

4. Discussion

The findings of this study contribute to the broader discourse on the implementation of PJBL in ESL writing, aligning with and extending existing literature. The linguistic challenges students

face, such as maintaining coherence and generating ideas, mirror observations by Bulqiyah et al. (2021) and Ivanova (2020), who identified similar struggles among ESL learners. The reliance on online research to gather ideas aligns with Ivanova's (2020) findings on the importance of research and critical thinking in opinion formation. In fact, studies on the PJBL model have identified the positive effects of improved critical thinking skills among students and making learning more interactive (Kemaloğlu-Er & Sahin, 2022). Writing organization proved difficult for the student, who relied on collaboration with teachers and peers to enhance structure, reflecting studies by Praba et al. (2018) and Samarji (2020). These challenges underscore the cognitive demands of writing, which require scaffolding through structured approaches such as outlining, targeted feedback, and iterative revisions.

Time management challenges, as observed in Students C3 and A3, highlight a common struggle, PJBL, where students often find it challenging to balance project demands with other academic or personal commitments. The implementation of flexible scheduling and collaborative strategies was effective in overcoming these challenges. This is because flexible scheduling enables students to optimize their time management, accommodating personal pace and unexpected interruptions. Collaborative strategies, conversely, allocate the workload among team members, promoting accountability and collective responsibility. This method corresponds with the findings of Al-Busaidi and Al-Seyabi (2021), which underscore the importance of flexibility and collaboration in mitigating time management difficulties in PJBL settings. Their research indicates that these strategies optimize time management and augment student engagement and productivity by fostering a supportive learning environment. Nonetheless, certain studies indicate that flexible scheduling and collaborative strategies may not consistently address time management issues. Excessively flexible schedules may result in procrastination, causing students to postpone tasks until the final moment. Collaboration may also present new challenges, including unequal workload distribution or reliance on high-performing team members, potentially impeding overall progress (Santyasa et al., 2020).

Group interaction posed disagreements and a lack of confidence, resolved through encouragement, patience, and external mediation. These approaches are supported by Hamidah et al. (2020), who stress the importance of communication in PJBL. The emphasis on collaborative learning within PJBL also aligns with studies by Deveci (2018) and Samarji (2020), which highlight the benefits of teamwork in fostering critical thinking and problem-solving skills. However, this study also sheds light on the complexities of group dynamics, including conflicts, dominance, and uneven participation. The strategies students employ to address these issues, such as setting clear roles, seeking teacher mediation, and fostering open communication, demonstrate the potential for PJBL to cultivate interpersonal and conflict resolution skills.

Mental fatigue and cognitive overload, frequently reported by students, reflect the rigorous demands of PJBL. This finding aligns with Kemaloğlu-Er's (2022) observations on the intensive nature of PJBL. This is also supported by Kemaloğlu-Er and Sahin (2022) that intensive demand for PJBL can lead to students' exhaustion due to being over-occupied with the project. Despite these challenges, students in this study exhibited resilience and adaptability, leveraging collaborative efforts and reflective practices to navigate obstacles effectively. This reinforces the transformative potential of PJBL, not only as a tool for academic skill development but also as a means of fostering personal growth and resilience. The proposed six-phase model builds on these insights, offering a comprehensive framework that addresses the identified challenges while promoting holistic learning. The model provides a robust foundation for implementing PJBL in diverse ESL contexts by integrating theoretical principles such as constructivism and experiential learning.

The study's findings indicate that PJBL is a practical approach for improving ESL students' writing skills and fostering deeper engagement, collaboration, and independent learning. The application of Vygotsky's sociocultural theory is evident in how peer interactions contribute to students' ability to refine their wiring. Additionally, Piaget's cognitive constructivism supports the notion that students actively build their writing competencies through hands-on experiences. However, while PJBL was largely beneficial, students faced difficulties in time management, workload distribution, and maintaining group dynamics. Addressing these challenges requires structured teacher guidance, more apparent task segmentation, and strategies to balance coursework effectively. Future research should explore scalable support mechanisms, including digital tools and structured peer-assessment frameworks, to enhance PJBL's effectiveness.

5. Model Development

The six-phase PJBL model proposed in this study offers a structured and comprehensive approach to enhancing ESL writing skills. Each phase addresses specific challenges identified during the research, ensuring a systematic progression from initial preparation to final assessment. The phases are as in Figure 1. The pre-writing phase evaluates students' initial abilities and introduces the project's objectives and expectations. This phase guides them in selecting appropriate topics and facilitates brainstorming sessions using tools such as mind maps and graphic organizers. This stage ensures a solid foundation for the writing process. Activities include diagnostic assessments, topic selection workshops, and brainstorming sessions using tools like mind maps and graphic organizers. These activities aim to build a strong foundation and align students' understanding with the project goals. During the drafting phase, students collaborate to set clear goals, develop detailed outlines, and allocate tasks among group members. Teachers are facilitative, guiding students in organizing their ideas and ensuring alignment with project requirements. This phase emphasizes the importance of effective planning and teamwork in achieving project outcomes. It involves interactive writing workshops where students engage in iterative drafting and receive real-time feedback from peers and teachers. Technology tools, such as online collaborative platforms, are integrated to enhance the writing process. This phase focuses on refining content, ensuring coherence, and addressing linguistic challenges.

The revising and editing phases are critical to the model, incorporating structured peer feedback sessions and teacher guidance. It also incorporates structured peer feedback sessions, teacher guidance, and dedicated workshops addressing grammar, punctuation, and stylistic elements. Reflective practices are integrated to promote self-awareness and a deeper understanding of progress, encouraging students to engage in self-assessment and group discussions. The assessment and feedback phase includes formative and summative evaluations to assess students' performance comprehensively. Individual and group assessments focus on aligning outcomes with the project objectives. Teachers provide constructive feedback to guide future learning. They are integrated to promote self-awareness and deeper learning. Students maintain reflective journals, participate in group discussions, and engage in guided self-assessment to track their progress and identify areas for improvement. This phase fosters a growth mindset and encourages continuous learning. It includes formative evaluations throughout the process and comprehensive final assessments, ensuring alignment with learning objectives. Additionally, the model emphasizes continuous support, offering resources such as writing centers, one-on-one tutorials, and professional development opportunities for educators. These components aim to sustain students' growth while addressing challenges encountered during writing. Through its systematic and supportive framework, the model promotes skill development, critical thinking, collaboration, and resilience. The model's emphasis on continuous support, collaborative learning, and reflective practices ensures a holistic approach to ESL writing instruction. It addresses learners' diverse needs while fostering critical adaptability, creativity, and problem-solving skills.

Pre-Writing	 Initial Phase: Begin with an assessment of students' current writing skills to identify individual strengths and areas for improvement. Topic Selection: Guide students in selecting topics that align with their interests and academic goals, while also challenging them to explore new areas. Brainstorming Sessions: Conduct structured brainstorming sessions to help students generate ideas and develop a clear focus for their writing. Encourage the use of mind maps, graphic organizers, and other visual aids to facilitate idea generation.
Drafting	 Writing Workshops: Offer writing workshops that focus on the craft of writing, including the importance of a strong thesis statement, paragraph development, and transitions. Technology Integration: Integrate technology tools such as online dictionaries, grammar checkers, and writing software to support students in the drafting process. Iterative Drafting: Encourage multiple drafts, with a focus on refining content, structure, and language use with each iteration.
Revising and Editing	 Peer Feedback: Establish a culture of peer feedback, where students exchange drafts and provide constructive criticism on content, organization, and language. Teacher Guidance: Provide targeted feedback and one-on support to help students address specific writing challenges. Editing Workshops: Conduct workshops on editing techniques, such as proofreading for grammar, punctuation, and style consistency.
Reflective Practice	 Self-Assessment: Encourage students to self-assess their writing, reflecting on their progress and setting personal goals for improvement. Group Reflection: Organize group reflection sessions where students discuss their writing experiences challenges, and strategies for overcoming them.
Assessment and Feedback	 Formative Assessment: Use formative assessments throughout the project to track student progress and adjust instruction as needed. Final Evaluation: Conduct a final evaluation that includes both peer and teacher assessment, providing comprehensive feedback on the students' final essays.
Continuous Support	 Ongoing Support: Offer ongoing support through writing centers, tutorials, and additional resources to help students manage the challenges of writing. Professional Development: Provide professional development for teachers to ensure they are equipped to support students in the PJBL framework.
	Figure 1. PJBL Writing Model

6. Conclusion

This study demonstrated that PJBL is an effective pedagogical approach for enhancing ESL students' writing skills. By engaging in collaborative, real-world writing tasks, students improved their ability to organize ideas, articulate arguments, and refine language use. Despite challenges related to time constraints and workload, the benefits of PJBL outweigh its limitations. The study highlights the need for structured facilitation, peer collaboration, and strategies for task management to maximize the learning potential of PJBL. Future research should focus on the long-term impact of PJBL on academic writing proficiency and explore additional interventions to support students in overcoming common writing challenges. The proposed PJBL model offers a structured framework that integrates reflective practices, collaborative learning, and continuous support to enhance writing skills and foster holistic development. These elements collectively support the development of writing skills and the cultivation of critical thinking, adaptability, and teamwork among students. While the study provides valuable insights, it is limited by its small sample size and specific context. It necessitates further research to validate the model's applicability across diverse populations and other language skills. By addressing these challenges and building on the proposed framework, educators can harness the transformative potential of PJBL to create dynamic and effective learning environments for ESL students, equipping them with critical skills for academic and professional success.

Ethical Issues

Ethical permission for this study was obtained from Universiti Teknologi MARA's Ethical Committee on 02/05/2024, with the decision number 600-UiTMCTKD (PJI/RMU 5/2) JPN.

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Conflicts of Interest

The authors declared that they have no conflict of interest.

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