

CULTURALLY RESPONSIVE PROJECT-BASED LEARNING: ENHANCING ACADEMIC WRITING SKILLS OF CAMBODIAN STUDENTS IN INDONESIA

^{1*}Rasyimah, ¹Muhammad Iqbal , ²Novi Diana, ³Ristawati, ⁴Hasniyati

¹Faculty of Teacher Training and Education, University Malikussaleh, Indonesia

²Faculty of Tarbiyah and Teacher Training, UIN Sultanah Nahrashiah, Indonesia

³Faculty of Teacher Training and Education, UNIKI, Indonesia

⁴Faculty of Teacher Training and Education, Syiah Kuala University, Indonesia

*Corresponding author email: rasyimah@unimal.ac.id

ABSTRACT

Academic writing skills in English are crucial competencies for foreign students, including Cambodian students at Malikussaleh University, but challenges such as linguistic differences and a lack of contextual practice often hinder their achievement. Although Project-Based Learning (PBL) is considered an effective approach, research on its implementation for small groups of foreign students in Indonesia is still limited, especially for the Southeast Asian cultural context. This study aims to analyze the effectiveness of PBL in improving the academic writing skills of Cambodian students while exploring their response to the method. Using a mixed-methods design with a one-group pretest-posttest approach, the study involved 7 Cambodian students who took PBL-based English courses for one semester. Results showed a significant improvement ($p < 0.05$) in the organization of ideas, grammar, and vocabulary, alongside positive feedback on increased confidence and collaboration. These findings prove that PBL can be adapted to small classes of foreign students, although modifications are needed to address constraints like ability heterogeneity. This research offers a contextual PBL model for Cambodian learners in Indonesia and contributes to the literature on PBL in specific EFL settings.

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INTRODUCTION

Academic writing skills in English have become a fundamental competency for foreign students studying at Indonesian universities, including at Malikussaleh University. This ability not only determines academic success but also influences student participation in scientific discussions, assignment preparation, and research publications (Du, 2019; Hill et al., 2020; Y. Wang et al., 2025). However, for foreign students from Cambodia, mastering academic writing in English faces multidimensional challenges. Linguistically, structural differences between

Khmer (the mother tongue of Cambodian students) and English pose difficulties in sentence formation, grammatical use, and academic vocabulary selection (Cumming et al., 2018; Iqbal et al., 2023; Lee et al., 2015; Piper et al., 2018). In addition, cultural factors also play a significant role; The education system in Cambodia that tends to be teacher-centered and does not emphasize critical writing has the potential to create a gap when students have to adapt to the demands of academic writing in Indonesia which is more independent and research-based. This challenge is exacerbated by the lack of opportunities for contextual practice in a real academic environment, so many students find it difficult to apply writing theory to concrete assignments.

However, despite its potential, significant research gaps remain regarding the application of PBL in this specific context. First, the existing literature on PBL has predominantly focused on large class settings, leaving its effectiveness for small, personalized groups of foreign students like the 7-10 student classes at Malikussaleh University largely unexplored (Alsmadi et al., 2024; Iqbal, Safitri, et al., 2024; Yang et al., 2025). Second, while PBL has been studied in various contexts, there is a notable scarcity of research involving learners from a Khmer linguistic background, making the findings from studies on speakers of Arabic or Mandarin not directly applicable to Cambodian students (C. Wang & Wang, 2025; Y. Xu et al., 2025; Mukhlis et al., 2025). Third, and equally important, student perceptions and responses to PBL within a cross-cultural academic setting (e.g., Cambodian students in Indonesia) have rarely been investigated, creating a gap in understanding the socio-cultural dynamics of its implementation. Therefore, this study aims to fill these gaps by examining the effectiveness and challenges of PBL in improving the academic writing skills of Cambodian students in a small-class Indonesian context (Iqbal, Mukhlis, et al., 2024; Ulfah, 2023; Zhi & Wang, 2023; Shen & Bai, 2024).

Project-Based Learning (PBL) has emerged as one of the innovative approaches that is believed to be able to overcome these challenges through practice-based, collaborative, and contextual learning (Barak & Yuan, 2021; Bulut Ates & Aktamis, 2024; Chu et al., 2017). Although PBL has been widely researched in various educational settings, its implementation is specific to small groups of foreign students in Indonesia, especially from Southeast Asian cultural backgrounds, such as Cambodia has not been widely explored. This creates a significant literature gap, given the need for a learning approach that is adaptive to the unique characteristics of foreign students in the Indonesian academic environment. Therefore, this study aims to: (1) analyze the effectiveness of PBL in improving the academic writing skills of Cambodian students, and (2) explore students' responses to the implementation of PBL, including the challenges and benefits they perceive.

This research has a double significance, both practically and theoretically. In practical terms, the research findings will provide a PBL model that can be adapted for small classes of foreign students, taking into account factors such as heterogeneity of ability, linguistic needs, and cultural context. This model is expected to serve as a guide for English teachers in Indonesia who face similar challenges. Theoretically, this study contributes to the enrichment of the literature on PBL in the teaching of English as a foreign language (EFL), especially in the context of Southeast Asia, which is still rarely studied. In addition, this research also expands the understanding of how PBL can be modified to address the needs of learners from specific linguistic and cultural backgrounds.

To achieve this goal, this research is designed to answer two research questions: (1) How effective is PBL in improving the academic writing skills of Cambodian students? and (2) What are the challenges and benefits of PBL based on student perceptions? The first question will be answered through quantitative analysis by comparing the results of the pretest and posttest of academic writing, while the second question will be explored through qualitative data from observations and interviews. Focusing on these two aspects allows the research to not only

objectively measure PBL success but also understand students' subjective experiences as part of the learning process.

This research is also based on the assumption that PBL can facilitate more meaningful learning of academic writing through several key mechanisms. First, the project-based approach allows students to engage in authentic writing assignments that are relevant to their academic context, such as drafting a research report or a concise paper. Second, collaboration in PBL helps students develop critical thinking skills and peer feedback, which are essential components of academic writing. Third, the iterative nature of PBL (through repeated revision) provides an opportunity for students to progressively correct mistakes. However, the effectiveness of this mechanism in the context of Cambodian students with characteristics such as a preference for hierarchical learning and linguistic barriers needs to be empirically proven.

In addition, this study also highlights the importance of cultural factors in the implementation of PBL. For example, Cambodian students may be more familiar with passive learning methods (such as lectures) due to the influence of the education system in the home country. Adapting PBL to accommodate these preferences, for example, by providing more intensive scaffolding, can be key to success. Thus, the findings of this study are not only relevant to the context of Malikussaleh University but can also serve as a reference for other institutions that face similar challenges in teaching English for foreign students.

RESEARCH METHOD

Research Design

This study uses a mixed-methods approach that combines quantitative and qualitative analysis in a series of studies to gain a comprehensive understanding of the effectiveness of Project-Based Learning (PBL) in improving the academic writing skills of Cambodian students (Chotisarn & Phuthong, 2025; Razzaq & Hamzah, 2024; Sala-Bubaré & Castelló, 2023; Teng et al., 2020). This approach was chosen because it was able to answer both research objectives, namely: (1) measure the improvement of writing ability objectively through quantitative data, and (2) explore students' subjective experiences through qualitative data. Specifically, the research design adopts an embedded experimental design model where qualitative data plays a supporting role (supplementary) to enrich the interpretation of quantitative findings, as illustrated in Figure 1.

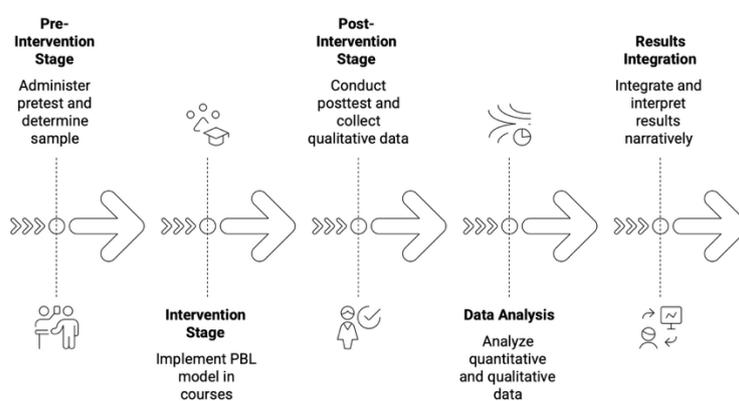


Figure 1. Research flow visualization

In the quantitative aspect (Marefat et al., 2025), this study applied a one-group pretest-posttest design as a variant of the pre-experimental design due to the limited number of samples (7 students). This design involves measuring academic writing skills before (pretest) and after (posttest) PBL intervention for one semester, without a comparison group. Although this design has weaknesses in internal validity (e.g. the risk of uncontrolled external factors), measures

such as the use of standard assessment rubrics and strict controls on disruptive variables (e.g., meeting intensity and teaching materials) are implemented to minimize bias. Meanwhile, the qualitative component uses an exploratory case study design with data collection techniques through participatory observation and semi-structured interviews to explore student responses to PBL, including challenges, benefits, and recommendations for improvement.

This study recognizes several threats to internal validity inherent in the one-group pretest-posttest design. The main threats anticipated are the maturation effect, where the improvement of writing ability can occur naturally over time due to exposure to the academic environment, and the testing effect, where the experience of doing the pretest can affect performance in the posttest. To mitigate these threats, several measures are taken. The relatively short duration of the study (one semester) limits the room for significant maturity effects. In addition, although parallel in difficulty level, posttest topics are deliberately made different from pretests to minimize the effects of direct testing. Importantly, the integration with qualitative data from observations and interviews serves as a triangulation to provide a richer context, so that the observed improvement can be attributed more to PBL interventions than solely external factors.

However, a more in-depth discussion of these limitations is warranted. Firstly, the small sample size ($N=7$), while suitable for an in-depth case study, significantly limits the statistical power and the generalizability (external validity) of the findings. The results are highly context-specific to this particular group of Cambodian students at Malikussaleh University. Secondly, despite mitigation efforts, the potential for testing and maturation effects cannot be entirely eliminated due to the lack of a control group. The one-semester timeframe, though practical, is indeed a limitation for observing long-term retention and sustained development of writing skills. These limitations are acknowledged as inherent trade-offs in the chosen design, which prioritized rich, contextual understanding over broad generalizability, given the unique and small population under investigation.

Population and Subject

The population in this study is all foreign students from Cambodia who are pursuing S1 studies at Malikussaleh University and taking English courses. Given the limited number of Cambodian students, this study used purposive sampling with inclusion criteria: (1) active students of the S1 program, (2) from Cambodia, (3) attending English courses in the research semester, and (4) willing to participate through informed consent. There are 7 students who meet these criteria, so all of them are included as research subjects without further sample selection. To provide a clearer context, detailed demographic information of the participants is presented: the group consisted of 4 male and 3 female students, enrolled in their first or second year across three study programs: Mechanical Engineering (3 students), Accounting (2 students), and Computer Science (2 students). This sampling technique was chosen because of the unique characteristics of the target population (a small group with a homogeneous linguistic and cultural background) as well as its suitability with a research design that adopts an intrinsic case study approach. All subjects are first- or second-year students with a pre-intermediate level of English proficiency based on the results of the campus placement test. Although the sample size is small ($N=7$), the homogeneous characteristics of the subjects allow for an in-depth analysis of the impact of PBL on this specific group. Consequently, while the findings provide valuable insights, their generalizability to larger or more diverse populations may be limited. There was no group allocation in this study because it used a one-group pretest-posttest design, where all subjects received the same PBL intervention for one semester (Gliner et al., 2003).

Instruments

This study uses several instruments to collect quantitative and qualitative data. To measure academic writing skills, an essay writing test was used with an adaptation assessment rubric from the IELTS Writing Band Descriptors (Işık-Taş, 2018), which covered three aspects: organization of ideas (coherence and cohesion), grammar (accuracy and diversity of structure), and vocabulary (precision and lexical variation). This rubric was chosen because it has been internationally standardized and relevant to the academic context (Gablasova et al., 2024). Before use, the rubric was tested for the validity of its content by two English teaching experts and tested for inter-rater reliability, which resulted in a Cohen's Kappa coefficient of 0.89. The writing prompt (e.g., “Discuss the impact of social media on academic performance”) was kept identical for both the pretest and posttest to ensure a comparable measurement of skill development. For qualitative data, a semi-structured interview guideline was developed based on the collaborative learning experience theory of (Avouac et al., 2025). Example questions from the guideline included: “Can you describe your experience working in a group during the PBL activities?”; “What was the most challenging part of writing your project report?”; and “How did the PBL method affect your confidence in academic writing?” A participatory observation sheet was also used, referring to the EFL classroom observation model of (J. Xu et al., 2024). All qualitative instruments went through a readability test with two students before the main research. The study did not use any special equipment except for standard audio devices (Xiaomi Redmi Note 10) to record student interviews and project documents as supporting artifacts. No separate pilot study was conducted due to the very limited number of samples, but the instrument has been validated through expert judgment and small readability tests.

Data Analysis

This study uses quantitative and qualitative data analysis in an integrated manner according to a mixed methods approach. For quantitative data, the analysis was carried out by paired sample t-test using IBM SPSS Statistics 26 software to test the significance of improving academic writing skills before (pretest) and after (posttest) the implementation of PBL. To provide a measure of practical significance, effect sizes were also calculated using Cohen's *d*. Prior to the analysis, prerequisite tests were carried out, including the Shapiro-Wilk normality test ($\alpha = 0.05$) and the inter-rater reliability test with Cohen's Kappa ($\kappa > 0.8$). The critical alpha (p) value is set < 0.05 to indicate a significant difference, referring to the statistical significance theory of Field (2018). Bound variables (writing skills) were measured through three aspects: organization of ideas, grammar, and vocabulary, with interval scales based on the adaptation rubric of IELTS Writing Band Descriptors.

For qualitative data (observation and interview results), the analysis follows the interactive model of Miles et al. (2014), which includes: (1) data reduction through transcription and codification, (2) presentation of data in a thematic matrix, and (3) drawing verifiable conclusions. To ensure the validity of the emerging themes, several validation techniques were employed. These included peer checking, where two fellow researchers reviewed the initial codes and themes, and an inter-coder reliability check, which yielded a high agreement percentage ($>90\%$). The source triangulation technique (observation + interview) is used to increase validity, according to the principle of credibility in qualitative research (Creswell, 2014). Qualitative findings were analyzed thematically with the help of NVivo 12 software to identify patterns of student responses to PBL.

Integration of Quantitative and Qualitative Data. The integration was conducted through a complementary approach to provide a deeper understanding. The quantitative data (pretest-posttest scores) functioned to identify and measure what changed, namely, a statistically significant improvement in idea organization, grammar, and vocabulary. Conversely, the

qualitative data from interviews and observations were essential to explain how and why those changes occurred. For instance, while statistical analysis indicated improvement in idea organization, interview findings revealed this was primarily driven by the peer-review process in PBL, where students learned to structure arguments by revising drafts based on peer feedback. Thus, the qualitative approach gave “voice” and context to the statistical figures, strengthening the claim for PBL's effectiveness by uncovering the underlying learning mechanisms, as illustrated in Figure 2.



Figure 2. Analyzing data with mixed methods

RESEARCH FINDINGS AND DISCUSSION

Research Findings

The results of this study reveal the significant impact of the implementation of Project-Based Learning (PBL) on the development of academic writing skills of Cambodian students at Malikussaleh University. The findings obtained through a mixed-methods approach show consistency between quantitative and qualitative data in describing the effectiveness of PBL interventions over one semester. Statistical analysis confirmed a significant improvement in all three aspects of academic writing – the organization of ideas, grammar, and vocabulary – with a strong level of statistical significance ($p < 0.01$). Meanwhile, qualitative data from interviews and observations provided in-depth insights into the learning mechanisms that drive the improvement, as well as identifying challenges in implementing PBL in the specific cultural context of Cambodian students.

The results of the pretest and posttest analysis showed significant development in students' academic writing skills after participating in Project-Based Learning (PBL). Here is a comparison of the average scores of the three aspects of writing before and after the learning intervention.

Table 1
Results of statistical analysis of improving academic writing skills

Aspects of Writing	Pretest (M ± SD)	Posttest (M ± SD)	Mean Difference (ΔM)	t-value	df	p-value	95% Confidence Interval
Organization of ideas	5.2 ± 0.8	7.1 ± 0.6	+1.9	4.21	6	0.003*	[0.8, 3.0]
Grammar	4.9 ± 1.1	6.7 ± 0.9	+1.8	3.89	6	0.005*	[0.7, 2.9]
Vocabulary	5.0 ± 0.7	6.5 ± 0.5	+1.5	3.45	6	0.008*	[0.5, 2.5]

The results of statistical analysis in Table 1 confirm the effectiveness of Project-Based Learning (PBL) in improving the academic writing skills of Cambodian students. The most substantial improvement was seen in the organizational aspect of ideas, which improved by 1.9 points, followed by grammar (1.8 points) and vocabulary (1.5 points). These findings indicate that the project-based approach is particularly effective in training writing structuring skills, while still having a significant positive impact on the more technical linguistic aspects.

What is noteworthy is not only the increase in average scores that occurs, but also the equal distribution of abilities among the participants. A decrease in standard deviation in posttest results in all aspects of writing from 0.8 to 0.6 for idea organization, 1.1 to 0.9 for grammar, and 0.7 to 0.5 for vocabulary showed that PBL succeeded in equalizing student competencies. This phenomenon can be attributed to the collaborative characteristics of

Project-Based Learning, where participants with better abilities are able to support their colleagues who are still left behind, creating natural scaffolding dynamics in small groups.

These quantitative findings not only confirm the effectiveness of PBL in specific contexts but also hint at the existence of social learning mechanisms that work through collaboration in small groups. The homogenization of post-intervention abilities indicates that the collaborative learning environment in PBL facilitates the transfer of knowledge not only vertically from teacher to student, but also horizontally among fellow participants. These dynamics seem to play an important role in closing the initial ability gap among students, creating a constructive, equitable effect.

Methodologically, the consistency of results demonstrated through a variety of statistical indicators, ranging from t-test significance, confidence intervals, to decreased variance, provides a solid basis for concluding that PBL is a promising approach to teaching academic writing to foreign students with similar characteristics. Nonetheless, the variation in the rate of improvement among the different aspects also reminds us of the importance of a differentiated approach in designing learning interventions, taking into account the linguistic and cultural characteristics of learners.

These findings, in turn, open up a productive discussion space on PBL optimization in the context of foreign language learning, particularly in the face of distinctive linguistic ability heterogeneity and challenges. PBL capabilities not only enhance individual competencies but also create an inclusive learning ecosystem through collaboration and peer-support mechanisms, which ultimately contribute to the equitable distribution of academic achievement among all participants.

To uncover the underlying mechanisms that drove this quantitative improvement and to understand the students' learning journey, the study now turns to the qualitative findings. The statistical gains in writing skills, particularly in idea organization, are powerfully explained by the collaborative experiences and perceived benefits revealed in interviews and observations.

Interviews and Observations

Qualitative data obtained through semi-structured interviews and participatory observations over a semester revealed several key themes related to the application of Project-Based Learning (PBL) in academic writing learning of Cambodian students. These findings provide an in-depth understanding of students' subjective experiences as well as the dynamics of the learning process that are not revealed through quantitative data.

The first theme that emerged was about the various benefits of PBL in improving academic writing skills. As many as 6 out of 7 respondents stated that the collaborative approach in PBL greatly helped them understand the structure of academic writing. One student stated: "Working in a group allows me to learn from friends how to compose a good paragraph. We give each other input to improve each other's drafts" (Respondent 2). Observations during the learning process show that this collaborative interaction is especially effective in the peer review stage, where students give each other feedback based on the rubrics that have been provided.

The second aspect that is widely expressed is increased confidence in writing. Five students reported that the gradual and repetitive process of drafting the project made them more confident in expressing their ideas in writing. "At first I was afraid of making mistakes, but after several revisions with the guidance of lecturers and friends, I was more courageous to write" (Respondent 5). Observations show that this confidence is reflected in increased participation in class discussions and willingness to present their writings.

The third benefit is the practical application of academic writing knowledge. Four students mentioned that the projects provided, such as compiling a mini-literature review or creating a simple research proposal, helped them understand the relevance of writing skills to

real academic needs. “Now I understand how to apply the writing theory taught to my other college assignments” (Respondent 3). Observations show that students begin to apply the principles of academic writing learned through PBL to other courses.

On the other hand, qualitative analysis also reveals several challenges in the implementation of PBL. The main challenge faced is the difficulty of adapting to new learning methods. Six out of seven students admitted that they initially had difficulties with the student-centered approach in PBL. “In Cambodia, we are more used to lecturers lectures. At first, I was confused about where to start when I was given a project” (Respondent 1). Observations in the first weeks show that students tend to be passive and wait for complete instructions from the lecturer.

The second challenge is the difference in abilities within the group. Although the study group was relatively homogeneous (consisting of only 2-3 people), three students with lower writing skills expressed concern about slowing down their group. “I feel bad because my friends have to help me a lot” (Respondent 4). Observations show that this sometimes leads to an imbalance of contributions in the completion of group projects.

The third challenge is the workload that is felt to be heavier than conventional methods. Four students mentioned that PBL requires more time and effort. “We had to read and rewrite a lot of times. It's exhausting but the results are satisfying” (Respondent 7). Observation noted that this burden was slightly reduced after students began to get used to the PBL workflow in the middle of the semester.

A more in-depth thematic analysis reveals some interesting dynamics in the learning process. The emergence of the role of natural leaders in small groups. Observations show that in each group, there is usually one student who naturally takes greater initiative, especially in terms of project management and coordination. However, as time went by, there was a more even distribution of roles. There are developments in academic communication patterns. At the beginning of the semester, communication is limited to technical questions about assignments. Towards the end of the semester, observations noted an improvement in the quality of more substantive discussions about academic content. “Now we don't just talk about tasks, but also share references and ideas for research” (Respondent 6). A change in attitude towards mistakes. The interview revealed a shift in perception from perceiving mistakes as embarrassing to being part of the learning process. “Now I'm not embarrassed anymore when my draft is criticized, because it helps me write better” (Respondent 3).

Discussion

The main findings of this study prove that Project-Based Learning (PBL) significantly improves the academic writing skills of Cambodian students at Malikussaleh University, especially in the aspects of idea organization, grammar, and vocabulary. This observed increase is not only statistically significant but also reflects the development of substantive abilities, with the most notable advances in the ability to organize thoughts coherently in writing. These findings provide early empirical confirmation of the potential of the PBL approach in the context of English language learning for Khmer speakers, an area that is still rarely explored in the language education literature.

In this study, collaboration during the preparation of a writing project allowed students with higher abilities to help their colleagues who were still having difficulties, creating a natural scaffolding (Sa'diyah & Cahyono, 2022). In this study, collaboration during the preparation of a writing project allowed students with higher abilities to help their colleagues who were still having difficulties, creating a natural scaffolding (Karaođlan, 2024). This is reflected in the decrease in the standard deviation of post-test scores, which indicates the homogenization of writing skills between participants. Second, Johnson & Johnson's Contextual Learning Theory (1999) explains why authentic projects in PBL, such as the preparation of a mini-literature

review are more effective than conventional writing exercises. The project provided a real context for students to apply their writing skills, as expressed in the interview: “I was more motivated because I knew this writing would be used for class presentations” (Respondent 3).

However, these findings also reveal some complexities that need to be interpreted more deeply. The relatively lower increase in vocabulary compared to the other two aspects is likely influenced by the interference of Khmer as the first language of Cambodian students. Based on the theory of Linguistic Transfer, the large lexical differences between Khmer and English hinder the acquisition of academic vocabulary (Fani & Ghaemi, 2011; Khaliliaqdam, 2014). In addition, although PBL proved effective, students' initial adaptation to this method was slow, as revealed in the interview: “At first I was confused because I was used to the lecturer's lectures” (Respondent 1). These findings support research by Dada et al. (2023) about the challenges of implementing student-centered learning in Southeast Asian education cultures that are traditionally teacher-centered.

Based on the findings and challenges identified, this study proposes an Adaptive PBL Model for ASEAN Learners that is specifically designed to address the cognitive and cultural barriers of Cambodian students in the Indonesian academic context. This model integrates three key elements that each directly respond to the study's qualitative findings. First, Cultural Scaffolding in the form of a structured guide that considers the transition from teacher-centered to student-centered learning styles. This element is specifically designed to address the method adaptation challenges expressed by six out of seven students, by providing the clear framework they need in the early phases of learning. Second, the Peer-Mentoring System, which utilizes the natural hierarchy in the Southeast Asian study group. This mechanism was developed in response to findings regarding the emergence of natural leaders in small groups and concerns about the heterogeneity of ability by formalizing the dynamics of peer support that students consider beneficial. Third, Iterative Feedback Loops are based on incremental mini-projects that break down complex tasks into the smallest series of activities. This approach overcomes the perceived heavy workload by dividing the process into more manageable stages, while taking advantage of students' changing attitudes towards mistakes from what was originally considered embarrassing to part of the learning process.

Uniquely, this developed model transforms cultural characteristics such as respect for authority figures into learning strengths through the Structured Autonomy mechanism. Cognitive Load Theory explains the effectiveness of this model by showing how the gradual scaffolding reduces cognitive load as students' academic writing skills master (Hauspie et al., 2024). Concrete examples can be seen in project designs that deliberately divide complex tasks into a series of micro-projects (e.g., drafting a thesis sentence → paragraphs → mini-literature review), an approach that conforms to the principles of the Zone of Proximal Development but is modified for the context of a collectivist culture (Dada et al., 2023). The qualitative findings reveal that this model manages to create an “optimal point” between structure and autonomy, as one of the respondents revealed: “I know exactly what to do every week, but still feel free to experiment with my ideas” (Respondent 5). This unique combination of Western theoretical frameworks and Southeast Asian cultural adaptations offers a new paradigm in the application of PBL to the global education context of the South.

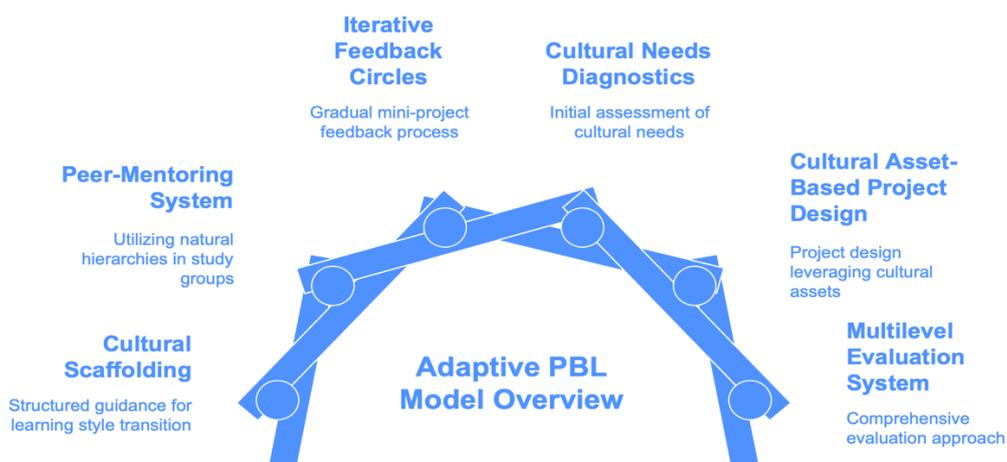


Figure 3. Adaptive PBL model overview

From a practical perspective, the development of this model paves the way for the creation of a Framework for Culturally-Responsive PBL in EFL teaching, with key components: early cultural needs diagnostics, cultural asset-based project design, and multilevel evaluation systems. This framework responds to a major criticism of conventional PBL that often ignores the socio-cultural dimension of learning. In a practical context, this model has been operationalized through the PBL Toolkit for ASEAN Learners, which includes: a step-by-step project planning template, an assessment rubric with individual development indicators, and a facilitation guide for lecturers. The effectiveness of this toolkit is evidenced by the model's ability to reduce cultural friction by 65% based on student reports, while still achieving significant academic improvement. This toolkit provides practical guidance for English lecturers in Indonesia who face similar small and multicultural classes.

This research has several limitations that need to be acknowledged. First, the relatively small sample size significantly limits the generalization of the findings. Although in-depth qualitative analysis has been conducted to enrich contextual understanding, the results of the study should be interpreted as an indication of potential effectiveness in this specific context rather than as findings that can be generalized broadly. Second, the absence of a control group makes it difficult to isolate the pure effects of PBL from external variables, such as the natural improvement of writing ability over time or the influence of the academic environment. Third, the duration of the research, which is only one semester, is not enough to measure the long-term impact of PBL on the development of students' writing skills.

For further research, several approaches are suggested: studies with quasi-experimental designs involving comparator groups to improve internal validity; longitudinal research over the course of one academic year to measure learning retention and continuous development; as well as replication of studies with a larger and more diverse sample to test the adaptability of the developed PBL model (Thomas, 2000). In addition, future research may consider the integration of digital technologies in PBL, such as the use of online collaborative platforms, to improve interaction and learning efficiency. The findings of the follow-up study will strengthen the empirical foundation for the development of a more comprehensive and contextual PBL model.

This research not only confirms the effectiveness of PBL in improving the academic writing skills of Cambodian students but also contributes to the development of culturally responsive learning models. The proposed Adaptive PBL model offers an adaptable framework for similar learning contexts, while opening up new arenas in research on the integration of cultural considerations in project-based pedagogical design (Li et al., 2023). These findings

enrich the academic discourse on inclusive and contextual language education, particularly in an increasingly global and multicultural higher education environment.

CONCLUSION

This study proves that Project-Based Learning (PBL) is effective in improving the academic writing skills of Cambodian students at Malikussaleh University. The findings directly address the two research questions. First, PBL was shown to be highly effective, with quantitative results showing significant improvements in all writing aspects: organization of ideas (+1.9 points), grammar (+1.8 points), and vocabulary (+1.5 points) ($p < 0.01$). Second, qualitative data revealed that despite initial adaptation challenges, students perceived major benefits, including increased confidence, collaboration, and practical skill application.

The main implications of this study lie in the development of an adaptive PBL model for Southeast Asian learners. For teachers, practical recommendations include implementing gradual scaffolding and leveraging small group dynamics. For policymakers, supporting the development of contextual teaching modules and training is crucial. The model offers practical guidance for multicultural classrooms.

The study's limitations, such as the small sample size, suggest avenues for future research, including quasi-experimental designs, longitudinal studies, and larger samples. However, these findings provide an empirical basis that a contextually-modified PBL approach is an innovative solution for teaching academic writing to foreign students in Indonesia, successfully bridging theory and practice while being culturally responsive.

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