

Shaping Reflective Competence through Transformative Project-Based Learning in a Research Methodology Course

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Abstract

Research methodology courses can enable students to complete research procedures without necessarily developing the reflective judgment needed to explain, evaluate, and revise methodological decisions. This study examined how the implementation of Transformative Project-Based Learning (TPjBL) shaped students' reflective competence in a Research Methodology course in English Language Teacher Education. Adopting a qualitative case study design, the study drew primarily on weekly reflective journals produced across the semester, supported by participant observation notes, focus group discussions, students' project artifacts, and pre- and post-rubric scores as supplementary descriptive data. The data were analyzed thematically to trace recurring patterns and changes in the focus and depth of students' reflection throughout the TPjBL process. The findings revealed four interconnected developments. Students moved from initial uncertainty toward greater reflective awareness of the relevance and demands of research; they became more deliberate in evaluating the alignment among research problems, questions, literature, methods, instruments, and analysis; their reflections deepened during data interpretation and discussion writing; and peer feedback, revision, and repeated project cycles strengthened ownership and self-monitoring. These findings suggest that TPjBL can function as a reflective pedagogical structure when inquiry, methodological justification, interpretation, feedback, and revision are embedded across the project cycle. The study contributes a process-based account of how reflective competence may develop in research methodology learning rather than treating reflection only as an end-of-course outcome.

Keywords: Transformative Project-Based Learning, reflective competence, research methodology, English Language Teacher Education, qualitative case study

INTRODUCTION

Research methodology courses in English Language Teacher Education are expected to help students do more than reproduce research procedures. Yet a persistent instructional problem is that students may successfully complete proposal sections, select methods, and submit research products while still struggling to explain why particular decisions are appropriate, how choices connect across the study, and when those choices should be reconsidered. In such situations, procedural completion can conceal limited reflective judgment. This problem is consequential because research learning requires students to monitor their reasoning, evaluate evidence, and revise decisions rather than simply follow a template. Reflection therefore becomes central to research competence, especially when students must connect problems, questions,

methods, instruments, analysis, and interpretation into a coherent inquiry (Ryan, 2017; Ertl et al., 2020; Henderson et al., 2022).

Reflective competence in this study refers to students' developing capacity to examine their learning and research decisions, justify the reasoning behind those decisions, question assumptions, and use feedback or evidence to improve subsequent action. This view treats reflection as more than retrospective description. It involves movement from reporting what happened toward analyzing how and why a decision was made and, at a deeper level, reconsidering the assumptions that shaped that decision (Kember et al., 2000; Ryan & Ryan, 2019). Such competence is particularly relevant in teacher education because future teachers are expected to make situated professional judgments and learn from experience rather than depend indefinitely on prescribed procedures (Beauchamp, 2018; Körkkö et al., 2020).

Project-based learning offers a suitable environment for this development because it organizes learning around sustained inquiry, problem solving, collaboration, and the production of meaningful outcomes. Reviews and meta-analyses show that PBL can support engagement and a range of cognitive and behavioral outcomes in higher education (Chen & Yang, 2019; Guo et al., 2020). However, project work is not automatically reflective: students can remain task oriented unless the design deliberately requires them to interrogate assumptions, justify choices, revisit evidence, and revise their thinking. Drawing on transformative learning, which emphasizes critical reflection and perspective reconsideration (Mezirow, 1991; Hoggan, 2016; Mälkki, 2019), the present study conceptualizes Transformative Project-Based Learning (TPjBL) as project-based inquiry structured through repeated cycles of reflection, feedback, revision, and meaning-making.

Existing research leaves a specific gap. PBL literature has extensively examined student achievement, engagement, collaboration, and project outcomes (Chen & Yang, 2019; Guo et al., 2020; Markula & Aksela, 2022), while reflective-learning research has established the value of scaffolding, feedback, and critical examination of experience (Coulson & Harvey, 2017; Ertl et al., 2020). What remains insufficiently explained is how reflective competence develops across the actual stages of a semester-long research project, particularly in an English Language Teacher Education research methodology course. Much of the literature reports outcomes after an intervention; fewer studies trace how students' reflections change as they encounter research problems, methodological choices, data interpretation, peer critique, and revision. This process-oriented gap matters because reflection is developmental and may emerge differently at different stages of inquiry.

The distinctive feature of this study is therefore its longitudinal attention to reflective development within the research process itself. Rather than treating reflection as a final evaluation of a completed project, the course embedded weekly reflective journals across the TPjBL cycle and examined those reflections alongside observation notes, focus group discussions, project artifacts, and descriptive pre- and post-rubric trends. This design makes it possible to identify not only whether students appeared more reflective at the end of the course, but how the focus and depth of their reflection changed as they moved from problem identification to methodological alignment, preliminary analysis, discussion writing, peer feedback, and revision. The study thus connects project-based learning, transformative learning, and research-methodology pedagogy at the level of learning process rather than project output alone.

Accordingly, this study aimed to investigate how the implementation of TPjBL shaped students' reflective competence in a Research Methodology course in English Language Teacher Education. It addressed the question: How does students' reflective competence develop across the stages of a TPjBL-based research project? By answering this question, the study seeks to contribute a process-based account of reflective development in research learning and to provide pedagogical guidance for lecturers who want reflection to function as an integral part of inquiry, methodological decision-making, interpretation, feedback, and revision rather than as an isolated end-of-course activity.

METHOD

This study employed a qualitative case study to examine how TPjBL supported students' reflective competence in a specific classroom context. To begin with, a qualitative case study is well suited to this kind of investigation because it makes it possible to explore educational processes, classroom practices, and participant experiences in depth within a bounded setting (Hamilton & Corbett-Whittier, 2013; Merriam & Tisdell, 2016; Yin, 2018). More specifically, this approach is especially useful for examining implementation, since it allows researchers to describe how a pedagogical model is enacted, interpreted, and experienced in a real classroom environment (Harrison et al., 2017; Yin, 2018; Hamilton & Corbett-Whittier, 2013). At the same time, it is also appropriate for investigating students' reflective competence, because reflection develops through experience, meaning-making, and interaction with a particular learning context (Coulson & Harvey, 2017; Ryan, 2017; Bassot, 2020). Finally, by focusing on one specific classroom, the study can produce a rich and detailed understanding of how TPjBL functioned in practice rather than offering only a broad or abstract account (Merriam & Tisdell, 2016; Harrison et al., 2017; Yin, 2018). Seen in this way, the qualitative case study design provides an appropriate methodological pathway for examining both the implementation of TPjBL and its role in supporting reflective competence in a particular educational setting.

The study was carried out in a Research Methodology class within an English Language Education program during the fifth semester of the 2025–2026 academic year. This class was selected as the site of the study because it provided a relevant context for examining how Transformative Project-Based Learning was implemented in a research-oriented course and how such implementation related to the development of students' reflective competence. A total of 34 students were officially enrolled in the course; however, the analysis concentrated on data from 32 students whose records were sufficiently complete and consistent to support meaningful interpretation across the different sources of evidence used in the study. The instructional implementation was conducted over the period from September 2025 to January 2026, during which the learning activities, project development, and reflective tasks were integrated into the course. After the main instructional phase had been completed, evaluative activities were carried out in January 2026 to review the overall implementation and to generate additional insights into students' learning experiences and reflective development.

The course was organized through the integration of ADDIE and the five phases of Transformative Project-Based Learning, namely project launch, inquiry, development, reflection, and presentation. This structure served as the pedagogical context in which students engaged in a sustained research project and in repeated reflective activities across the semester. In this study, the intervention was treated not as the main object of analysis in itself, but as the learning context through which students' reflective competence was examined. The primary data source consisted of weekly reflective journals, which documented students' thoughts, challenges, judgments, and learning experiences throughout the TPjBL process. To strengthen the interpretation of reflective development, the journals were triangulated with participant observation notes, focus group discussions, and students' project artifacts. Pre- and post-rubric scores were also used as supporting descriptive data to illustrate tendencies of change in students' reflective performance, although these scores were not treated as causal evidence. The data were analyzed thematically to identify recurring patterns in students' reflective development across the course. The weekly journals served as the main corpus of analysis, while observation notes, focus group discussions, and project artifacts were used to support and refine the interpretation of emerging themes. The analysis proceeded through repeated reading, open coding, category building, and theme development, with attention to shifts in the focus and depth of students' reflections over time. Cross-source comparison, audit trail procedures, and bias-mitigation strategies were used to strengthen analytical rigor.

RESULT AND DISCUSSION

Result



Figure 1. Thematic Analysis Process from Weekly Student Reflections to Core Themes

The findings show that the implementation of Transformative Project-Based Learning shaped students' reflective competence through a gradual process of development rather than through a sudden change. Across the weekly reflections, students moved from initial uncertainty and surface engagement toward more deliberate academic judgment, deeper interpretation, and stronger self-monitoring. This pattern was visible not only in the journals, but also in the broader evaluation design of the study, which triangulated journal data with focus group discussions, observation notes, and project artifacts. In that sense, the development of reflective competence was not merely rhetorical or confined to what students wrote in isolation, but was linked to the way they increasingly approached research decisions more consciously throughout the project cycle.

From Initial Uncertainty to Reflective Awareness

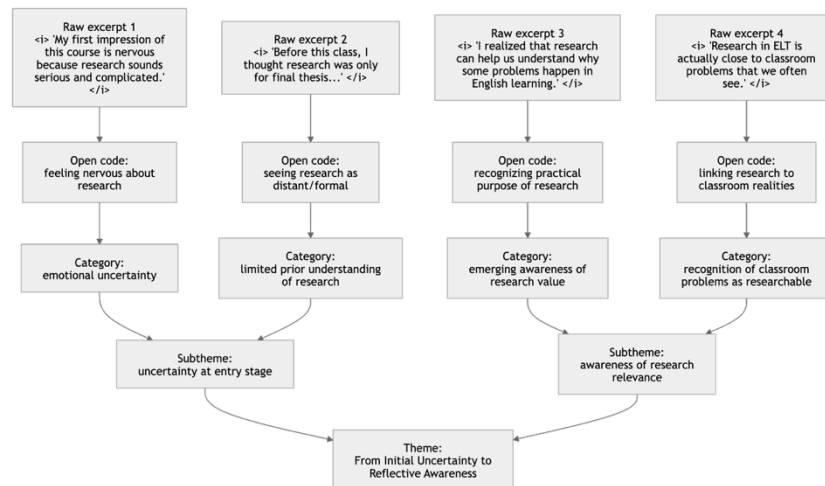


Figure 2. Data Coding Structure for Theme: From Initial Uncertainty to Reflective Awareness

The first way TPjBL shaped students' reflective competence was by turning initial uncertainty into reflective awareness. In the early weeks, many students still saw research as distant, difficult, and highly formal. Their reflections show that research was initially imagined as something connected mainly to thesis writing, complicated procedures, or abstract theory. Yet, even at this early stage, the project launch began to challenge those assumptions. Students started to reinterpret research in ELT as something connected to real classroom problems, practical learning issues, and their own academic experience. This suggests that reflective competence began not with confidence, but with disorientation and rethinking.

This early reflective movement is visible in several Week 1 entries. One student wrote, "*My first impression of this course is nervous because research sounds serious and complicated. But after the explanation, I think research in ELT is actually close to classroom problems that we often see.*" Another reflected, "*Before this class, I thought research was only for final thesis, so I did not think much about it. After today's session, I realized that research can help us understand why some problems happen in English learning.*" A third student expressed a similar shift by writing, "*The class made me understand that research in ELT is not something separate from teaching. It is actually connected to classroom realities and student learning.*" These reflections are still simple, of course, but they already show the first move away from passive assumptions toward reflective awareness of the purpose and relevance of research.

That awareness became sharper in Weeks 2 and 3, when students had to identify research problems and narrow their topics. At this point, the reflections no longer focused only on emotional reactions, but increasingly showed awareness of academic demands. Students began to recognize that a research problem could not be chosen merely because it was interesting, familiar, or easy to write about. Instead, it had to be meaningful, specific, and researchable. One student wrote, "*I realized that many issues in ELT look simple at first, but when I tried to make them into a research problem, I got confused. I still need practice to separate a general issue from a specific problem.*" Another student noted, "*This week helped me understand that a research problem needs boundaries. Before, I only had a general interest, but now I am starting to see the importance of focus.*" Such entries show that TPjBL created conditions in which uncertainty became productive. Students were not simply confused; they were beginning to reflect on why their first ideas were insufficient and what made a problem academically workable.

This theme is further strengthened by the analytical notes embedded in the Week 1 data, where the reflections were already clustered into patterns such as initial uncertainty, growing awareness of the value of

research in ELT, early curiosity toward project-based research, and beginning recognition of classroom problems as research topics. Those early groupings suggest that the project launch did not merely introduce a course requirement. It initiated a reflective reorientation toward research itself.

TPjBL Fostered More Deliberate Academic and Methodological Decision-Making

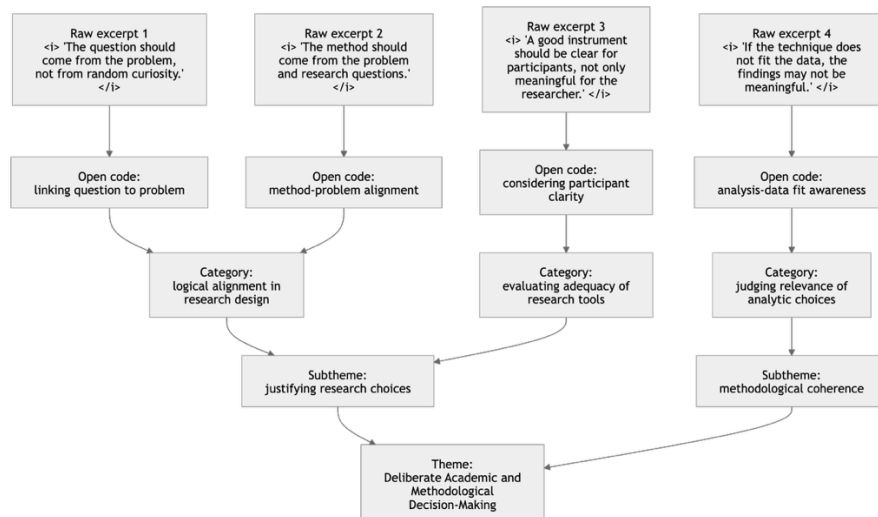


Figure 3. Data Coding Structure for Theme: Deliberate Academic and Methodological Decision-Making

The second way TPjBL shaped reflective competence was by fostering more deliberate academic and methodological decision-making. As students moved through the stages of formulating research questions, writing the background, reviewing literature, selecting methodology, designing instruments, planning data collection, and choosing analysis techniques, their reflections increasingly showed concern for alignment, coherence, and justification. In other words, they were no longer merely filling in research sections. They were beginning to evaluate the logic that connected those sections. This is one of the clearest indicators that their reflection was moving from surface description toward process reflection.

In Week 4, for example, students reflected that research questions had to be focused, answerable, and closely tied to the problem. One student wrote, *"This week helped me understand that research questions guide the whole study. If the question is weak or unclear, the research process can become confusing."* Another stated, *"I learned that the question should come from the problem, not from random curiosity."* These responses show a shift from seeing the research question as a formal requirement toward seeing it as an organizing center of the study.

A similar pattern appeared in Week 5 and Week 6. Students no longer described the background section as a mere introduction, but as the place where they had to justify the problem and build the logic of the study. One student wrote, *"Before this week, I thought the background was just an opening section. Now I understand that it helps show the logic of the research."* Another reflected, *"This week I learned that a good background should not only inform, but also convince readers that the study deserves attention."* In the literature review stage, students increasingly recognized that reviewing literature meant more than collecting definitions. As one student stated, *"Before this week, I thought literature review was mostly about finding definitions. Now I realize it is also about seeing what has and has not been studied."* Another wrote, *"I understand better now that a literature review should build an argument. It is not only a list of studies."* These reflections suggest that students were learning to judge the academic function of research components, not simply produce them.

This reflective development became even more visible in Weeks 7 to 10, where students had to justify methodology, instruments, data collection, and analysis. One student wrote, “*This week I learned that choosing a method is not about picking the easiest one. It should match the research question and the kind of data I need.*” Another noted, “*I learned that the method should come from the problem and research questions. If they do not match, the research may not be strong.*” At the instrument design stage, students began to think not only about technical construction, but also about validity, clarity, and participant understanding. One student reflected, “*I learned that a good instrument should be clear for participants, not only meaningful for the researcher.*” At the analysis stage, a student wrote, “*I realized that choosing data analysis is more important than I thought. If the technique does not fit the data, the findings may not be meaningful.*” These entries show a clear movement toward more deliberate and reasoned choices.

This interpretation is reinforced by the cross-source analytical notes developed during thematic analysis. One recurring pattern was the movement from simply following a proposal format toward thinking more explicitly as a researcher. A student reflection, translated from Indonesian, stated, “I used to simply follow the proposal structure. Now I can explain why I chose interviews and the consequences of that choice.” This statement captures the shift from procedural completion toward reflective reasoning about methodological choice and consequence.

Reflective Competence Deepened Through Interpretation and Meaning-Making

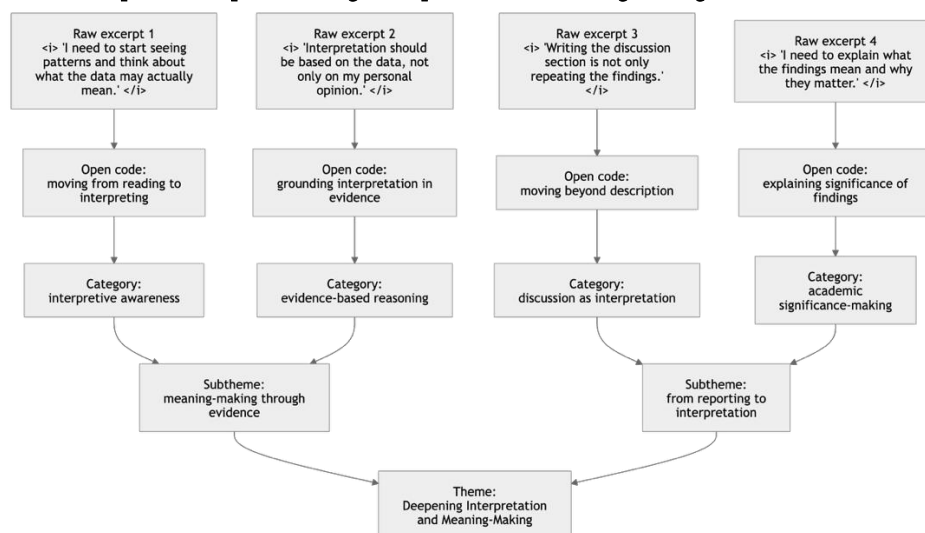


Figure 4. Data Coding Structure for Theme: Deepening Interpretation and Meaning-Making

The third way TPjBL shaped reflective competence was by deepening students' ability to interpret findings and construct meaning from data. This became particularly visible in Weeks 11 and 12, when students moved into preliminary analysis and discussion writing. Earlier in the semester, many reflections were still concerned with choosing, narrowing, aligning, or justifying. By this stage, however, students were being pushed to face a more difficult task: deciding what the data meant and how far interpretation could be responsibly made. This is where reflective competence became more analytical and, in several cases, more critical.

In Week 11, students repeatedly stated that analysis was not just about looking at data again, but about seeing patterns, making sense of them, and avoiding unsupported claims. One student wrote, “*This week I learned that preliminary analysis is not only about reading the data again. I need to start seeing patterns and think about what the data may actually mean.*” Another noted, “*This week helped me see that*

interpretation should be based on the data, not only on my personal opinion.” A third reflected, “I found that interpretation needs patience. I could not just look at one piece of data and decide what it meant immediately.” These responses indicate a deeper reflective stance, because students were no longer focused only on what they had done, but on the quality and limits of how they were making sense of their findings.

This deepening continued in Week 12, when students reflected on discussion writing as a process of meaning-making rather than repetition. One student wrote, “This week I learned that writing the discussion section is not only repeating the findings. I need to explain what the findings mean and why they matter.” Another observed, “I realized that meaning-making is one of the hardest parts of research writing because I have to show understanding, not only report results.” Another student stated, “This week helped me see that discussion writing is where research becomes more than data. It becomes an academic argument.” Such reflections suggest that students were beginning to engage in a more mature form of reflexivity, one that involved interpretation, significance, and careful relation to theory and previous studies.

The cross-source analytical notes also showed that uncertainty frequently acted as a trigger for deeper reflection. Students encountered disorienting moments when research questions remained unclear, instruments appeared biased, or emerging data did not match their expectations. One reflection, translated from Indonesian, stated, “I realized that my question was biased. If I kept using it, I would only be confirming my own assumption.” This kind of reflection indicates that some students had begun to examine the assumptions underlying their research decisions rather than only the procedures they were expected to follow.

Peer Feedback, Revision, and Project Cycles Strengthened Ownership and Self-Monitoring

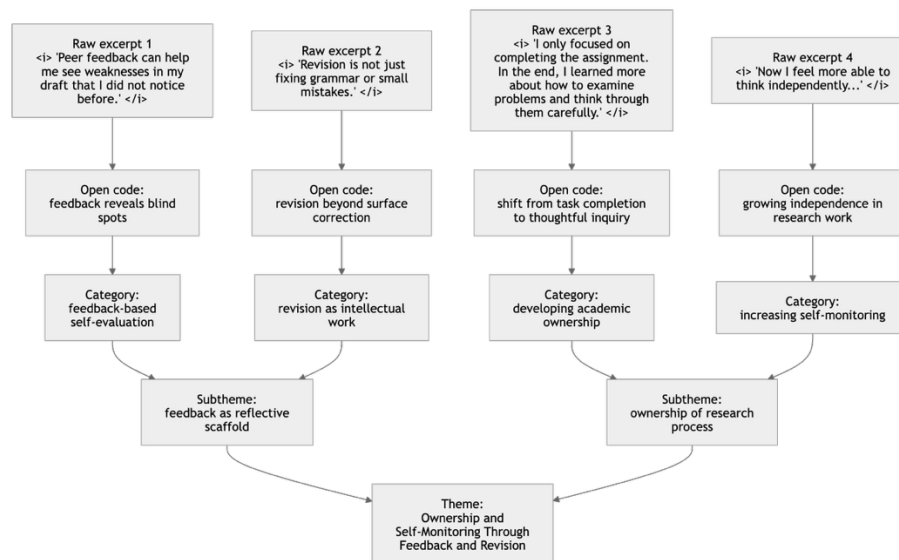


Figure 5. Data Coding Structure for Theme: Ownership and Self-Monitoring Through Feedback and Revision

The final way TPjBL shaped reflective competence was by strengthening ownership and self-monitoring through feedback, revision, and repeated project cycles. This became most visible in Weeks 13 and 14. At this stage, students were no longer merely reacting to the demands of the course. They were increasingly evaluating their own work, recognizing weaknesses, and seeing revision as part of the intellectual process of research writing. This is important, because reflective competence is not complete when students can explain choices. It deepens when they can monitor the quality of those choices and revise them in response to critique.

In Week 13, many students explicitly described peer feedback as a mechanism that helped them identify problems they had previously overlooked. One student wrote, “*This week I learned that peer feedback can help me see weaknesses in my draft that I did not notice before.*” Another reflected, “*I learned that revision is not just fixing grammar or small mistakes. Sometimes I also need to improve the logic and organization of the draft.*” Another stated, “*This week made me realize that academic writing needs openness to feedback. If I only depend on my own view, I may miss many problems in the draft.*” These reflections show that students were beginning to use external feedback as a mirror for self-evaluation rather than treating it as a threat or mere correction.

This pattern is also strongly supported by the internal report under the theme “*Peer feedback mengubah standar kualitas.*” The report notes that peer comments pushed students to revise arguments and rethink the validity of their instruments. It includes a respondent statement: “*Komentar teman bikin saya lihat kelemahan definisi variabel.*” That is a sharp piece of evidence, because it shows that peer feedback did not just improve wording. It changed how students judged the adequacy of their own research design.

By Week 14, the final reflections showed a more integrated form of development. Students increasingly described themselves as more confident, more careful, more reflective, and more aware of the interconnected nature of research work. One student wrote, “*At the start, I only focused on completing the assignment. In the end, I feel that I learned more about how to examine problems and think through them carefully.*” Another reflected, “*I think this journey helped me become more reflective because I did not only do the tasks, but also thought about why I was doing them and what I needed to improve.*” Another student noted, “*In the beginning, I often waited for clear instructions. Now I feel more able to think independently, even though I still need guidance in some parts.*” These final entries suggest that students had begun to internalize self-monitoring and ownership as part of their academic practice.

This interpretation is further supported by the descriptive rubric trends. The mean reflection score increased from 2.08 to 2.93, while the proportion of entries categorized as Reflection plus Critical Reflection increased from 19% to 69%, with the strongest increase appearing in Weeks 9 to 14. These scores are treated as supporting descriptive evidence rather than causal proof. Their pattern nevertheless converges with the journal data: as students moved further into interpretation, discussion, feedback, and revision, their reflective writing showed greater depth and self-monitoring.

Taken together, the findings indicate that TPjBL shaped students’ reflective competence through four interconnected developments. First, it transformed initial uncertainty into reflective awareness by prompting students to reconsider their assumptions about research and recognize the relevance of classroom problems as researchable issues. Second, it fostered more deliberate academic and methodological decision-making by requiring students to justify the alignment of problem, research question, literature, method, instrument, data collection, and analysis. Third, it deepened reflective engagement through interpretation and meaning-making, especially when students had to explain the significance of findings and confront the limits of their own assumptions. Finally, it strengthened ownership and self-monitoring through peer feedback, revision, and the cumulative project cycle. Overall, the implementation of TPjBL did not merely involve students in research tasks. It gradually moved them from descriptive participation toward more process-based and, in some cases, premise-oriented reflection. This overall interpretation is also consistent with the triangulated evaluation reported in the broader study.

Discussion

The findings indicate that the implementation of Transformative Project-Based Learning (TPjBL) gradually shaped students’ reflective competence across the course. In the early stage, many students still viewed research as distant, difficult, and highly formal, but their reflections later showed a growing awareness

that research in ELT is closely connected to classroom realities and meaningful inquiry. This pattern suggests that reflective development began when students were required to reassess prior assumptions about research, which is consistent with Mezirow's view that transformative learning starts when learners critically examine previously taken-for-granted perspectives (Mezirow, 1991). In this study, that shift is visible in the weekly reflections and is supported by the broader triangulated design using journals, FGD, observation, artifacts, and rubric trends.

A key implication of the findings is that TPjBL did not simply make students more active. It made them more accountable for the logic of their own research decisions. Across Weeks 4 to 10, students increasingly reflected on whether their research questions emerged from the problem, whether the background justified the study, whether the literature review showed a gap, whether the selected method fit the question, whether the instrument matched the purpose, and whether the analysis technique was appropriate for the data. This movement is pedagogically significant because reflective competence in research learning is not demonstrated by task completion alone, but by the ability to evaluate and justify the coherence of one's own design. This interpretation is aligned with Kember et al.'s (2000) framework, in which reflection and critical reflection involve examining the reasons behind one's actions rather than merely carrying them out. The descriptive rubric pattern in your study, showing a rise in mean reflective scores and a greater proportion of reflection and critical reflection in the later weeks, supports this interpretation, although it should remain supportive rather than causal evidence.

This pattern also resonates with more recent research on project-based learning in higher education. A major review by Guo et al. (2020) found that project-based learning in higher education is associated with cognitive, affective, and behavioral student outcomes, and that reflection-related data are commonly used to examine these outcomes. In the present study, however, the contribution is more specific: the value of TPjBL did not lie merely in producing a project outcome, but in structuring repeated opportunities for students to question assumptions, justify choices, and refine their research thinking. In that sense, the project functioned not simply as an assignment format, but as a pedagogical sequence that made reflective engagement necessary.

Another important point is that uncertainty, which is often treated as a weakness in research learning, appeared to function as a productive condition for reflective development. Students repeatedly reported confusion when narrowing topics, identifying the gap, selecting methods, and interpreting findings. Yet these moments of uncertainty did not merely obstruct progress. Instead, they often became the points at which students began reflecting more seriously on the adequacy of their own decisions. This fits the internal thematic finding that uncertainty acted as a trigger for critical reflection. It also aligns with recent work on reflective thinking in higher education, which suggests that reflection becomes more meaningful when learners are required to engage critically with problems, assumptions, and the consequences of their decisions rather than simply report experience (Kayapinar, 2023).

The findings further show that reflective competence became deeper in the later stages of the course, especially when students moved into preliminary analysis and discussion writing. At that point, students increasingly understood that analysis was not simply about describing data, but about identifying patterns, grounding interpretation in evidence, and explaining the significance of findings. Their reflections suggest a shift from procedural engagement to a more evaluative and interpretive stance. This is important because it shows that reflection in TPjBL was not limited to planning stages. It extended into the more difficult intellectual work of meaning-making. Recent studies on critical reflection in higher education similarly emphasize that reflective development becomes stronger when learners move from surface description to interpretation, judgment, and reconsideration of assumptions (Indrašienė et al., 2023; Kayapinar, 2023).

Peer feedback and revision also played a substantial role in strengthening ownership and self-monitoring. In Week 13, students increasingly described peer feedback as a way of recognizing weaknesses in logic, clarity, and structure that they had not previously noticed. They also came to view revision as more than

the correction of grammar or wording; revision became part of rethinking the substance of the article draft. Cross-source analytical notes similarly showed that peer comments prompted students to reconsider definitions, arguments, and instrument validity. This interpretation is consistent with recent research showing that peer feedback in academic writing can enhance self-assessment, reflective engagement, and students' awareness of how their work is read by others (Wei, 2024; Zhang, 2023).

The contribution of digital documentation should also be acknowledged. Course documentation from Moodle, Padlet, and Google Docs made students' progress, revisions, delays, and participation more visible, thereby supporting accountability and metacognitive awareness. This suggests that reflective competence in TPjBL was not shaped only through individual journaling, but also through a learning environment that made academic processes observable and revisitable over time. Such an interpretation is compatible with recent discussions of reflective practice in higher education, which emphasize that reflection is strengthened when learners can revisit evidence of their own actions and connect it to later judgment and improvement (Kolajo, 2025).

Taken together, these findings indicate that TPjBL shaped students' reflective competence through four interconnected developments: moving from initial uncertainty to reflective awareness, engaging in more deliberate academic and methodological decision-making, deepening interpretation and meaning-making, and strengthening ownership through feedback, revision, and self-monitoring. For research methodology teaching in English Language Teacher Education, the central implication is that reflection should be structurally embedded in inquiry tasks, methodological justification, analysis, peer response, documentation, and revision across the project cycle. The contribution of the design lies not simply in increasing student activity, but in repeatedly requiring students to examine the quality, coherence, and consequences of their own research decisions.

Implications Research

The findings have both pedagogical and conceptual implications for research methodology teaching. Pedagogically, reflective competence appears to develop more productively when reflection is distributed across the research process rather than assigned only at the end of a project. Reflection prompts can therefore be aligned with the intellectual demand of each stage: identifying assumptions when defining a problem, justifying coherence when selecting methods and instruments, examining evidence and alternative interpretations during analysis, and using peer feedback to reconsider the quality of a draft. This staged design positions journals, feedback, and revision as learning mechanisms rather than supplementary activities. Conceptually, the four developmental patterns identified in this study suggest that reflective competence in research learning is cumulative: awareness of research purpose can develop into methodological justification, then into evidence-based interpretation, and finally into self-monitoring and ownership. For English Language Teacher Education, embedding these processes may help students experience research as disciplined inquiry and professional judgment rather than as a sequence of technical requirements.

Limitations Research

Several limitations should frame the interpretation of these findings. First, the study was conducted as a bounded qualitative case study in one Research Methodology class, and the analysis focused on 32 students with sufficiently complete records; the findings are therefore context specific and are not intended for statistical generalization. Second, weekly journals constituted the primary corpus and remain self-reported accounts that may be influenced by students' awareness of course expectations. Triangulation with observations, focus group discussions, project artifacts, and rubric trends strengthens credibility but does not remove this limitation. Third, the pre- and post-rubric scores were used only as descriptive supporting evidence, and the design did not include a comparison group or inferential testing; causal claims about TPjBL should therefore be avoided.

Finally, the study covered one semester and did not examine whether the observed reflective patterns were sustained in later thesis work, teaching practice, or other research contexts.

Future Research

Future studies should test the transferability and durability of these findings across institutions, cohorts, and research-methodology contexts. Multi-site studies could examine whether the four developmental patterns recur under different instructional conditions, while comparative designs could distinguish the contribution of transformative-reflective elements from project-based learning more generally. Longitudinal research is also needed to determine whether students carry reflective decision-making into thesis writing, classroom inquiry, or teaching practicum. Mixed-method designs that combine qualitative reflection data with validated measures of reflective thinking may provide stronger evidence of developmental change. Further research could also isolate particular mechanisms within TPjBL, such as disorienting uncertainty, structured journaling, peer feedback, digital documentation, or iterative revision, to clarify which components most strongly support movement from procedural participation toward critical and self-regulated research practice.

CONCLUSION

This study concludes that Transformative Project-Based Learning supported a gradual development of students' reflective competence in a Research Methodology course, visible in four interconnected shifts: from initial uncertainty to reflective awareness, from procedural completion to more deliberate academic and methodological decision-making, from reporting findings to evidence-based interpretation and meaning-making, and from dependence on external direction to stronger ownership and self-monitoring through feedback and revision. The findings imply that research methodology teaching in English Language Teacher Education can benefit from embedding reflection systematically across inquiry, methodological justification, analysis, documentation, peer response, and revision rather than treating reflection as an isolated final activity. At the same time, the findings should be interpreted within the limits of a single-class qualitative case study based primarily on students' reflective journals, supported by triangulated qualitative sources and descriptive rubric trends without a comparison group or causal test. Future research should therefore examine TPjBL across multiple contexts, use comparative and mixed-method designs, and follow students beyond one semester to determine whether reflective competence is sustained and transferred to later research and professional practice.

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