From Projects to Practice: Integrating PjBL and CTL to Elevate Vocational EFL Students' Engagement

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Abstract
This study examines the effectiveness of integrating Project-Based Learning (PjBL) and Contextual Teaching and Learning (CTL) in enhancing students' engagement in English learning at a vocational high school. A mixed-methods design was employed, involving questionnaires, classroom observations, and interviews with 33 students majoring in chemical analysis. Quantitative data were analyzed using descriptive statistics, while qualitative responses were thematically coded. The findings indicate that the integration of PjBL and CTL increased students' engagement, confidence, and ability to apply English in real-world vocational tasks, such as laboratory procedures and technical reporting. Mean scores showed generally positive perceptions, while low standard deviations reflected consistent responses across participants. Qualitative evidence highlighted improvements in communication, collaboration, and critical thinking, with students reporting stronger motivation and preparedness for professional English use. This study contributes to vocational English pedagogy by providing empirical evidence of the complementary strengths of PjBL and CTL in bridging academic learning with workplace relevance. The proposed instructional framework offers practical guidance for educators in technical-vocational institutions, ensuring better alignment between language instruction and the demands of globalized industries.

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Abstrak
Penelitian ini bertujuan untuk mengkaji efektivitas integrasi *Project-Based Learning* (PjBL) dan *Contextual Teaching and Learning* (CTL) dalam meningkatkan keterlibatan siswa dalam pembelajaran bahasa Inggris di sekolah menengah kejuruan. Metode penelitian menggunakan desain campuran dengan pengumpulan data melalui angket, observasi kelas, dan wawancara terhadap 33 siswa jurusan analisis kimia. Data kuantitatif dianalisis menggunakan statistik deskriptif, sementara data kualitatif dianalisis melalui pengkodean tematik. Hasil penelitian menunjukkan bahwa penerapan PjBL dan CTL mampu meningkatkan keterlibatan, kepercayaan diri, serta keterampilan siswa dalam mengaplikasikan bahasa Inggris pada tugas vokasional, seperti prosedur laboratorium dan pelaporan teknis. Nilai rata-rata angket menunjukkan persepsi yang positif, sedangkan standar deviasi rendah mengindikasikan konsistensi tanggapan antar responden. Temuan kualitatif lebih lanjut menegaskan peningkatan keterampilan komunikasi, kolaborasi, dan berpikir kritis. Siswa juga melaporkan motivasi lebih tinggi serta kesiapan yang lebih baik dalam penggunaan bahasa Inggris di dunia kerja. Penelitian ini memberikan kontribusi pada pengembangan pedagogi bahasa Inggris vokasi dengan bukti empiris mengenai keunggulan PjBL dan CTL. Kerangka pembelajaran yang ditawarkan dapat menjadi panduan praktis bagi pendidik di sekolah vokasi untuk menyelaraskan pengajaran bahasa Inggris dengan kebutuhan industri global.

I. INTRODUCTION

English as a foreign language (EFL) in Indonesia is taught within a complex sociolinguistic and educational context where learners often have limited exposure to English beyond the classroom. Although English is a compulsory subject in schools, the majority of students rarely encounter authentic communication opportunities outside formal learning environments, resulting in restricted development of communicative competence (Renandya, 2018). The emphasis on examinations and rote memorization further limits meaningful engagement and real-world application of language skills. The country's linguistic diversity adds another layer of complexity. With over 700 local languages spoken across the archipelago, many students

acquire Bahasa Indonesia as a second language and English as a third (Simons & Fennig, 2018). This multilingual context requires pedagogical approaches that accommodate diverse linguistic repertoires and connect English learning to learners' lived experiences and vocational aspirations. Resource disparities between schools and unequal access to teacher professional development exacerbate these challenges (Lengkanawati, 2017). In many vocational high schools, English instruction remains teacher-centered, relying heavily on textbooks and translation, which limits opportunities for authentic interaction, collaboration, and higher-order thinking (Lie, 2017). These conditions highlight the need for innovative, student-centered approaches.

Two pedagogical frameworks, PjBL and CTL, are increasingly recognized as effective methods for addressing these issues. PjBL engages students in extended tasks culminating in tangible products, fostering autonomy, creativity, and integration of multiple skills (Beckett & Slater, 2020). CTL situates learning in real-life contexts, making content more relevant and meaningful. In EFL settings, PjBL has been found to enhance oral fluency, accuracy, and learner motivation by requiring sustained use of language to create authentic outputs for real audiences. The collaborative and inquiry-based nature of PjBL supports both linguistic and soft skills development, making it highly compatible with vocational education goals (Bakar, et al., 2019). CTL, on the other hand, focuses on connecting classroom instruction to practical experiences and students' future professional roles. This approach encourages learners to see the utility of English beyond examinations, thereby increasing engagement, retention, and transferability of skills. In Indonesian contexts, CTL has been linked to improved participation and self-efficacy (Sugiyanto, et al., 2020).

The vocational education sector in Indonesia demands graduates who are not only technically competent but also proficient in English for documentation, reporting, and international communication (Direktorat Pembinaan SMK, 2017). Integrating PjBL and CTL can bridge the gap between academic English learning and workplace language needs by embedding English tasks in authentic vocational scenarios. Research on Vocational English suggests that when language tasks are aligned with domain-specific content, such as chemical analysis, engineering, or hospitality, students demonstrate higher motivation and better mastery of technical vocabulary (Widodo, 2016; Kusni, et al., 2020). These findings underscore the potential of combining PjBL's product orientation with CTL's relevance-driven framework.

Although studies have documented the benefits of PjBL and CTL (Beckett & Slater, 2020) separately, fewer have explored their combined impact on vocational high school EFL learners in Indonesia. This represents a significant gap, especially in understanding how these methods influence student engagement, behavioral, cognitive, and affective, in technical learning environments. Student engagement is a multidimensional construct involving active participation, strategic learning behaviors, emotional investment, and a sense of relevance. In vocational EFL contexts, engagement also reflects the ability to transfer language skills to professional tasks, a goal that PjBL and CTL are both well-positioned to support.

From a methodological standpoint, mixed-methods research offers a robust approach to capturing both the measurable outcomes of these interventions and the nuanced learner perceptions that explain them (Creswell & Clark, 2018). This study employs surveys, interviews, and classroom observations to triangulate findings. For PjBL, the study examines six dimensions: real-world application, professional confidence, communication, collaboration, critical thinking, and classroom engagement. These align with the principles of authenticity, inquiry, and public product that define high-quality project-based instruction (Larmer, et al., 2015). For CTL, the study focuses on engagement during lessons, real-world application, preparedness for career use of English, ability to explain technical concepts, vocabulary and grammar retention, and communication confidence in vocational contexts. These aspects directly reflect CTL's emphasis on meaningful learning and transfer.

In the case of a vocational high school specializing in chemical analysis, English is not an abstract academic subject but a practical skill for writing lab reports, understanding safety protocols, and presenting findings. Embedding these tasks in PjBL and CTL frameworks can create a more immersive, relevant, and effective learning environment (Widodo, 2016). Therefore, this study aims to contribute to both theory and practice by exploring how PjBL and CTL can be integrated to enhance EFL engagement in Indonesian vocational education.

The findings are expected to inform curriculum design, teacher training, and policy development for more contextually responsive and skill-oriented English instruction.

II. METHOD

This study employed a mixed-methods approach using a convergent parallel design to comprehensively examine the effectiveness of PjBL and CTL in enhancing student engagement in English at SMK-SMAK Bogor, a vocational high school specializing in chemical analysis. The combination of quantitative and qualitative methods enabled the integration of measurable evidence with in-depth insights into students' learning experiences. Quantitative data were obtained through structured questionnaires, while qualitative data were collected via classroom observations and semi-structured interviews, allowing for a holistic understanding of the instructional impact.

The research was conducted with a purposive sample of 33 tenth-grade students from a total population of 330, ensuring representation of learners at a formative stage where both technical and language skills are developed. Prior to the main study, a pilot test involving six students was carried out to refine the research instruments. Data collection followed a sequential procedure: questionnaires were distributed first, followed by classroom observations to document real-time teaching and learning interactions, and concluded with in-depth interviews with six students to explore perspectives that could contextualize and validate the quantitative findings.

Three instruments were utilized: (1) Likert-scale questionnaires adapted from validated PjBL and CTL studies, each demonstrating high reliability (0.83–0.87) and validity (0.85–0.90); (2) structured classroom observation protocols focusing on verbal and non-verbal engagement indicators; and (3) semi-structured interview guides probing real-world application, collaboration, communication skills, critical thinking, and confidence in English use. This triangulation of instruments strengthened the credibility and depth of the findings.

Quantitative data were analyzed using descriptive statistics to identify trends in engagement and inferential statistics to explore relationships between learning methods and outcomes. Qualitative data were subjected to thematic analysis following Braun and Clarke's framework, enabling the identification of recurring patterns related to motivation, skill development, and vocational relevance (Braun & Clarke, 2006). The integration of these analyses provided a robust, multi-dimensional evaluation of PjBL and CTL's effectiveness in vocational English instruction.

III. RESULT AND DISCUSSION

This section presents and discusses the key findings from this study, drawing on quantitative and qualitative data collected through questionnaires, observations, and interviews. The analysis integrates insights from both the implementation of PjBL and CTL in English classrooms. The discussion is organized around three main focal points, each addressing one of the study's research questions. These focal points capture the core outcomes and implications of the study in relation to the teaching and learning process.

1. The Effectiveness of PjBL in Enhancing Student Engagement in Learning English

The implementation of PjBL has gained significant attention in English language education, particularly for its potential to enhance student engagement in vocational contexts. In this study, the effectiveness of PjBL was examined through both descriptive and statistical analyses of students' perceptions, providing insights into how project-based activities contribute to their learning experience. The use of mean scores and standard deviations from the questionnaire responses of 33 participants allows a systematic evaluation of central tendencies and variations in student engagement. These results form the foundation for a deeper discussion on how PjBL influences learners' motivation, confidence, and practical application of English in vocational high school settings.

Table 1. Mean & Standard Deviation on PjBL

No	Items	Mean	SD
1	I enjoy learning English more when I do project-based activities.	3,18	0,58
2	Doing projects helps me understand English better.	3,45	0,56
3	I feel more interested and active in English class when working on projects.	2,97	0,68
4	Working on projects helps me improve my English speaking and writing.	3,61	0,50
5	I feel more motivated to learn English through projects.	2,97	0,77

6	Projects help me use English in real-life situations related to my future job as a chemical analyst.	3,36	0,65
7	Working on projects with my classmates helps me improve teamwork and communication in English.	3,39	0,75
8	Project-based learning helps me think critically and solve problems using English.	3,18	0,64
9	I remember English skills better when I learn through projects.	3,00	0,87
10	Doing projects helps me feel more confident using English in professional situations, like internships or jobs.	2,88	0,78
11	Project-based learning encourages me to make decisions and solve problems using English.	2,82	0,77
12	Through project-based learning, I can research/ find deep information, analyze information, and present my ideas in English.	3,00	0,79
13	PjBL helps me adjust to difficult English situations, like understanding technical words or professional language.	3,21	0,65
14	Learning through projects helps me connect English with my vocational studies (chemical analyst) easily.	3,30	0,64
15	Project-based learning helps me understand my English progress and what I need to improve.	3,55	0,67

Note: SD = Standard Deviation

Table 1 shows that the respondents demonstrated a positive attitude toward PjBL in English language instruction, although the degree of acceptance varied across different aspects. The highest scores were recorded for the statements “Working on projects helps me improve my English speaking and writing” (Mean = 3.61, SD = 0.50) and “Project-based learning helps me understand my English progress and what I need to improve” (Mean = 3.55, SD = 0.67), indicating that PjBL is perceived as effective in enhancing language skills and fostering awareness of one’s learning progress. In contrast, the lowest scores appeared for the statements “Project-based learning encourages me to make decisions and solve problems using English” (Mean = 2.82, SD = 0.77) and “Doing projects helps me feel more confident using English in professional situations” (Mean = 2.88, SD = 0.78), suggesting the need for additional strategies to strengthen confidence and decision-making abilities in professional contexts. The relatively low standard deviations for most items reflect consistency in respondents’ perceptions, although certain areas with higher variability warrant particular attention. These findings affirm that PjBL holds considerable potential as an EFL teaching approach, yet its optimal implementation should focus on reinforcing professional skills and problem-solving abilities in English.

The findings indicate that PjBL effectively transforms students' perceptions of English from a purely academic subject into a practical and contextually meaningful skill, particularly through engaging tasks such as podcasts, laboratory descriptions, and role-plays, which enhance motivation, engagement, and perceived career relevance. This aligns closely with Sadad et al. (2024), who found that the implementation of staged PjBL in Indonesian EFL classrooms stimulated engagement through authentic tasks, scaffolding, and peer collaboration, reinforcing students' motivation to use English beyond mere academic requirements. Furthermore, Maulina (2024) reported that PjBL significantly elevated student involvement, alongside measurable gains in speaking and writing proficiency, underscoring the real-world applicability and motivational power of PjBL. These studies collectively corroborate our results, suggesting that PjBL’s authenticity and connection to professional contexts play a pivotal role in deepening student engagement and reframing English learning as personally meaningful.

The findings from the interviews of 6 respondents provide compelling evidence that PjBL is highly effective in enhancing students’ engagement and language acquisition in vocational English education. By situating learning in real-world contexts, students recognized English as a functional and transferable skill rather than a purely academic requirement. The use of authentic projects such as podcasts, laboratory descriptions, and professional role-plays fostered a sense of relevance and immediacy, encouraging learners to view English as a tool for both personal and professional growth. This alignment between classroom practice and workplace needs resonates with the

principles of contextualized learning, reinforcing the pedagogical value of PjBL in vocational settings (Bas, 2022).

Beyond fostering relevance, PjBL also emerged as a powerful catalyst for confidence, communication, and collaboration. Students reported significant improvements in fluency, accuracy, and expressive ability, with project tasks providing structured yet flexible opportunities for authentic use of language. Importantly, the collaborative nature of PjBL not only reduced learner anxiety but also facilitated peer-to-peer learning, where students actively supported each other in refining grammar, vocabulary, and pronunciation. These dynamically positioned learners are not seen as passive recipients of knowledge but as co-constructors of meaning, thereby nurturing both linguistic competence and interpersonal skills that are essential for professional interaction in global contexts (Tamin & Mohamad, 2020).

Equally significant was the finding that PjBL nurtured higher-order thinking, particularly in problem-solving and critical reasoning. Students were frequently challenged to negotiate roles, resolve conflicts, and devise creative solutions in English, which demanded both cognitive and linguistic dexterity. These experiences fostered resilience and adaptability, qualities that extend well beyond the classroom into professional and civic life. Taken together, the six thematic dimensions-real-world application, confidence, communication, collaboration, problem-solving, and engagement-demonstrate that PjBL does not merely improve language skills in isolation but holistically prepares learners for the demands of 21st-century vocational environments.

2. The Effectiveness of CTL in Enhancing Student Engagement in Learning English

The effectiveness of CTL in enhancing student engagement in English learning lies in its ability to connect classroom instruction with real-life situations that are meaningful to learners. By grounding language activities in authentic vocational and daily contexts, CTL makes the learning process more relevant, thereby motivating students to actively participate and apply English beyond the classroom walls. This approach not only increases learners' interest but also improves retention of knowledge, since the concepts are tied to practical experiences that align with their vocational field. To further illustrate the effectiveness of CTL, the quantitative findings from the questionnaire on mean scores and standard deviations provide important evidence of how students perceived and responded to its implementation in English classes.

Table *2*. Mean & Standard Deviation on CTL

No	Item	Mean	SD
1	Learning English through real-life contexts makes the subject more relevant to me.	3,42	0,61
2	Learning English with contextual teaching methods makes the class more engaging.	3,12	0,60
3	I can use what I learn in English class in daily life.	3,36	0,55
4	Learning English in real-life situations helps me remember words and grammar better.	3,27	0,63
5	I participate more in English class when we learn through real-life activities.	3,12	0,65
6	Real-life learning helps me think critically and solve problems using English.	3,03	0,68
7	Learning English through real-life examples gives me more confidence to use English at laboratory.	2,97	0,73
8	Real-life activities help me communicate better with my classmates in English.	3,00	0,66
9	Learning English through real-life situations helps me to remember what I learn in the English class longer.	3,18	0,58
10	This way of learning prepares me better for using English in my future job as a chemical analyst.	3,48	0,51
11	Learning English through real-life tasks helps me adapt to different work situations.	3,18	0,73
12	Learning English through real-life contexts helps me explain technical concepts in English more clearly.	3,39	0,66
13	Contextual teaching helps me solve complex problems in English that are related to my vocational field as chemical analyst.	3,09	0,68
14	Contextual learning improves my ability to	3,24	0,66

	communicate professionally in English, like writing reports for laboratory work.		
15	Learning English through real-life activities helps me see my progress and what I need to improve for my future job.	3,30	0,64

Note: SD = Standard Deviation

The results of the questionnaire on the implementation of CTL indicate that students generally responded positively to the integration of real-life contexts into English learning, with mean scores ranging from 2.97 to 3.48. The highest mean value (M = 3.48, SD = 0.51) was found in the statement that CTL prepares students better for their future careers as chemical analysts, highlighting the strong vocational relevance of the approach. Similarly, items related to relevance (M = 3.42, SD = 0.61) and clarity in explaining technical concepts (M = 3.39, SD = 0.66) also scored above average, suggesting that CTL supports learners in connecting language use with professional tasks. Meanwhile, lower means were observed in aspects related to confidence in using English in laboratory settings (M = 2.97, SD = 0.73) and peer communication (M = 3.00, SD = 0.66), indicating that while CTL enhances the contextual understanding of English, its influence on interpersonal and confidence-building aspects may require further pedagogical reinforcement.

In terms of variation, the standard deviation values, which mostly fall between 0.55 and 0.73, demonstrate a moderate level of consistency among students' responses. The lowest deviation (SD = 0.51) reflects a strong agreement that CTL contributes directly to preparing learners for future work situations, while higher deviations, such as in confidence-related items (SD = 0.73), suggest more diverse perceptions within the classroom. Taken together, these findings conclude that CTL is effective in making English learning more relevant, memorable, and professionally meaningful for vocational students, yet its implementation may benefit from additional support in fostering confidence and collaboration. This aligns with previous studies emphasizing that CTL enhances contextual application of language but should be complemented with strategies that promote interpersonal engagement and self-assurance (e.g., Sumardi & Muamaroh, 2020; Sari & Atmojo, 2023).

Referring to qualitative data through interviews, the CTL approach clearly enhances student engagement in English classes by grounding lessons in learners' real-world and vocational contexts. Participants reported that when content reflected their everyday experiences, for instance, through classroom scenarios connected to daily life or lab-based tasks, the material became more meaningful and memorable, leading to increased attention and motivation. This shift from rote learning to active involvement fosters a deeper sense of purpose and encourages students to invest in the language. These findings align with recent studies that underscore how contextual relevance significantly boosts student engagement in vocational learning environments (Putra & Suherdi, 2020; Sari & Atmojo, 2023).

Beyond fostering engagement, CTL plays a pivotal role in preparing students for professional use of English within their careers. Respondents emphasized how CTL enhanced their ability to describe technical processes, generate lab reports, and engage in professional dialogue, skills integral to vocational performance. By embedding technical terminology and workplace communication tasks in lessons, CTL ensures that linguistic development is directly relevant to students' future roles. This approach not only deepens learning but also cultivates vocational confidence and job readiness.

Moreover, CTL supports long-term retention of vocabulary and grammatical structures by allowing learners to encounter language in meaningful and applied contexts. Many students noted that when they engaged with English through practical tasks, such as lab-based writing or real-life simulations, they remembered and used language more effectively than through textbook learning. This experiential reinforcement also bolstered their confidence in vocational communication tasks, from reporting to discussing technical content. Together, these outcomes highlight CTL's capacity to nurture both linguistic competence and self-efficacy, equipping students with durable skills for global workplace demands.

3. Key Factors Supporting the Success of PjBL and CTL in Vocational Schools and Recommendations for Optimization

The successful implementation of PjBL and CTL in vocational English classrooms depends on several interrelated factors that shape both engagement and learning outcomes. These approaches are most effective when aligned with the specific needs of vocational students, who require English not only as an academic subject but also as a tool for professional communication and workplace competence. The three key factors highlighted here, relevance to real-life and career contexts, active learning methods, and student-centered approaches, are emphasized because they directly respond to the core challenges vocational students face, such as limited opportunities for authentic practice, lack of teaching method variety, and the need for confidence in professional communication. By addressing these dimensions, educators can maximize the potential of PjBL and CTL in preparing vocational learners for real-world challenges while ensuring that the learning process remains meaningful, practical, and empowering.

Here are the key factors contribute to the successful implementation of PjBL and CTL in vocational English learning.

a) Relevance to real-life and career-related contexts plays a central role because students are more motivated when they understand how English is connected to their future aspirations, such as working in laboratories, international communication, or accessing scientific information.
b) Active learning methods include collaboration, problem-solving, and creative expression, enhancing students' critical thinking and communication skills. These methods are particularly important in vocational contexts because they mirror the teamwork and problem-solving situations students will encounter in their future workplaces. By engaging in authentic tasks, students learn to apply English not just as a language skill but as a tool to negotiate meaning, share ideas, and co-construct solutions with peers. Moreover, active learning fosters deeper cognitive engagement compared to passive learning, making students more likely to retain vocabulary and grammar in meaningful ways. It also helps bridge the gap between classroom learning and professional practice, as students practice soft skills, such as adaptability, creativity, and collaboration, that are highly valued in modern industries.
c) Student-centered approaches that provide autonomy and encourage responsibility promote deeper learning and confidence. To optimize both approaches, it is essential for teachers to design projects and contextual tasks that are clearly linked to students' vocational competencies, provide continuous feedback, and create a supportive environment where learners feel safe to take risks and express themselves. Integrating real-life tools, industry-specific vocabulary, and digital media can further enhance the authenticity and effectiveness of these learning models in vocational settings.

Quantitative analysis of the questionnaire data indicated generally positive perceptions of both PjBL and CTL in enhancing English engagement among vocational students. For PjBL, the mean scores for most items ranged between 3.00 and 3.61 on a 4-point scale, with the highest ratings linked to improvements in English speaking and writing skills (M = 3.61, SD = 0.50) and self-awareness of learning progress (M = 3.55, SD = 0.67). Similarly, CTL responses reflected strong agreement with its vocational relevance, particularly in preparing students for future work as chemical analysts (M = 3.48, SD = 0.51) and helping explain technical concepts in English (M = 3.39, SD = 0.66). Standard deviation values across both methods were generally low to moderate, indicating a fair level of consistency in student experiences. At the same time, the qualitative findings provided richer detail to these statistical trends. Interview data revealed that PjBL promoted active participation, collaborative learning, and practical application of English, particularly when students worked on authentic laboratory-related projects. Respondents described improved confidence in professional English contexts, such as internships, and reported better retention of vocabulary and grammar when linked to hands-on projects. Similarly, CTL was valued for making English lessons more meaningful by integrating them into real-life vocational scenarios, which enhanced comprehension of

technical language and fostered long-term memory retention.

Observational data further supported these claims. In PjBL settings, students demonstrated higher engagement levels during project phases that required problem-solving and presentation skills, often using English spontaneously in group discussions. In CTL lessons, engagement was highest when activities mirrored workplace tasks, such as drafting laboratory reports in English or conducting safety briefings, reinforcing the relevance of classroom learning to professional practice. Across both approaches, evidence suggested complementary strengths: PjBL was particularly effective in fostering collaborative problem-solving and creative output, whereas CTL excelled in bridging classroom instruction with real-world vocational demands. Together, these methods addressed multiple dimensions of engagement, cognitive, behavioral, and affective, positioning them as mutually reinforcing.

IV. CONCLUSION AND SUGGESTION

A. Conclusion

This study demonstrated that both PjBL and CTL significantly contributed to enhancing students' engagement in English learning within a vocational high school context. Quantitative results indicated consistently positive perceptions across multiple engagement indicators, while qualitative findings revealed concrete improvements in confidence, communication skills, and vocationally relevant language use. These outcomes suggest that integrating PjBL and CTL provides a dual advantage: fostering creativity and problem-solving while ensuring direct applicability to students' future professional environments. The findings align with prior research emphasizing the role of authentic, student-centered instruction in vocational education but extend the literature by evidencing their combined impact in a specialized field such as chemical analysis. The relatively low variation in responses underscores the consistency of these benefits across the participant group, suggesting that such pedagogical models can be effectively implemented in similar vocational settings.

Pedagogically, the study underscores the importance of designing English instruction that goes beyond generic language acquisition, embedding learning within tasks and contexts that mirror the workplace. This approach not only strengthens linguistic competence but also nurtures transferable skills such as teamwork, critical thinking, and professional communication, key attributes in technical industries. Future research could build upon these findings by employing longitudinal designs to track skill retention over time, exploring hybrid models that integrate digital tools with PjBL and CTL, and expanding participant samples to include multiple vocational disciplines. Such directions would further validate the scalability and sustainability of these methods in diverse vocational education environments.

B. Suggestion

The discussion related to this research is still very limited and requires a lot of input, suggestions for future authors are to study this more deeply and comprehensively about From Projects to Practice: Integrating PjBL and CTL to Elevate Vocational EFL Students' Engagement.

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