Article

Transforming Language Learning: Project-Based Learning through Video conferencing as Tools to Enhance Willingness to Communicate

*Hanna Maria Panggabean, Muhamad Safi'i, Mutia Elviani, Ronika Apriyanti Manik, Ghustiva Liani[abcde] [ID]

12345Politeknik Negeri Medan, Indonesia
Corresponding Author: hannamaria@polmed.ac.id

A B S T R A C T

This study examined the effectiveness of project-based learning (PBL) that was integrated with video conferencing such as OmeTV to assess its impact on willingness to communicate (WTC) in English. Fifty students from vocational college were selected as an experimental group who received PBL approach, and another fifty students participated as a control group, who only attended video conferencing. The study employed mixed methods, incorporating both quantitative and qualitative data, to investigate students' improvement on WTC before and after the implementation of PBL activities. A questionnaire was developed by adopting WTC model from MacIntyre (1998) to assess the effectiveness of PBL on the students' WTC; meanwhile, in-depth interviews took place to explore the experiences and perspectives of how a supportive English environment can influence their WTC, challenge them to use English more actively and interactively, and overcome the difficulty of misunderstanding across cultures. The findings revealed a significant improvement in WTC for the experimental group, indicated by a t-value of 16.780 (p < 0.001) and an R^2 increase from 45.3% to 85.4%. Conversely, the control group showed moderate improvement (t-value of 12.333, p < 0.001) and an R^2 increase from 12.8% to 76%. This implied that video conferencing alone had a positive effect on the students' WTC, but it was less impactful compared to the experimental groups who received PBL approach. Meanwhile, the interview results highlighted three key themes, namely, 1) motivation and confidence in using English for communication, 2) practical language use and real-world communication in PBL activities, and 3) overcoming challenges in PBL activities. Video conferencing, such as OmeTV, enhance students' communication skills and build their confidence. Overall, the study contributes to the development of pedagogical approaches, as PBL offered student-centered learning to enhance their communicative competence in the context of vocational college students.

Keywords: *Willingness To Communicate (WTC), Project-Based Learning (PBL), Technology-Assisted Language Learning, L2 Confidence, Vocational College Students*

Check for updates
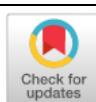
INTRODUCTION

Lately, English language skills for effective communication have become an increasingly important requirement for employment. These goals should be a core target for vocational colleges in Indonesia to ensure their students can compete in the global economy sector. However, most students are not ready to communicate effectively in English because the environment does not support opportunities for them to practice with their colleagues. Most of the students were focusing on learning grammar and techniques to pass the English test; therefore, their Willingness to Communicate (WTC), a factor that triggered the L2 learners to communicate actively in English, was low. It is supported by Weda et al. (2021), who highlighted that low levels of WTC remained among students because the teacher rarely provided classroom learning activities and daily interactions to communicate in English, which undermined their confidence and linguistic abilities.

Since the demand for English proficiency in commerce, hospitality, tourism, and other business sectors is higher, the urgency to equip vocational college students to enhance their

English proficiency should be evaluated sooner or later. As Xu (2018) stated, educational programs in China have been increasingly adjusted to meet specific professional needs; therefore, possessing adequate English skills was crucial for preparing students to achieve a high level of proficiency in the workforce. However, the students' WTC could only be increased if there was an adequate learning environment to provide practice, feedback, and meaningful conversations so that they could develop motivation to prioritize communication for their future English learning orientation (Edwards & Roger, 2015).

The theory is grounded in combining three main approaches, which include WTC, PBL, and ELF, to fulfill the research gap. The connections and dynamics of global communication in English as a Lingua Franca (ELF), facilitated by project-based learning (PBL) activities conducted through video conferencing, encouraged an increase in willingness to communicate (WTC) among vocational college students. The implementation of the WTC model instrument explored affective factors such as self-confidence, motivation, and social context as the main factors influencing WTC when speaking a second language. However, MacIntyre et al. (1998) emphasized that WTC could not be improved solely by relying on the development of linguistic abilities, but it must be supported with psychological factors and a supportive learning environment. Therefore, PBL existed to meet vocational college students' need for an authentic and realistic learning environment.

Thomas (2000) and Bakar et al. (2019) explained that the concept of implementing PBL involves students as active participants in project implementation due to the authentic interaction, collaborative processes between members, and problem-based learning when facing challenges. When executing real-life projects, the students not only developed language skills but also built self-confidence and intrinsic motivation to communicate. However, vocational college students could not rely solely on PBL activities in the classroom. Without real interaction with non-native speakers, cross-cultural communication conflict could occur, as well as a lack of familiarity with diverse accents that could lead to decreased motivation and self-confidence. Therefore, a learning environment with an ELF perspective is necessary.

From an ELF perspective, communication among native and non-native speakers mainly put forward understanding, so the goal was not to imitate native speakers but rather to attain intelligibility, appropriateness, and effectiveness. This allowed students to enhance their creativity in negotiating meaning and expanding cross-cultural understanding (Jenkins, 2007). Likewise, Ke and Cahyani (2014) conducted a study involving Taiwanese and Indonesian students in an online exchange project in ELF. They found that the experience with ELF communication led to significant changes even though the students' beliefs were initially aligned with the traditional native-speaker (NS)-based approach to language teaching. As a result, the students became less focused on grammar and more engaged with the practical use of English for communication.

Moreover, a study about international students in Taiwan who communicate in ELF with their peers and local people indicated that an authentic environment could develop the students' confidence. This situation occurred because the environment and the interlocutor were tolerant toward some mistakes in English communication, and native speaker norms were less emphasized (Panggabean et al., 2023). A continuing study by Panggabean and Samosir (2025) supported the notion that offering an ELF environment for the students who may not have exposure to native speakers would facilitate their communication in professional settings, which was essential for achieving future career success. Likewise, the findings of Kalocsai (2011) and Kaur (2011) also highlighted that an ELF environment could strengthen confidence and engagement even when the students used imperfect English.

To understand the importance of ELF environment, PBL was designed to interact with native speakers through video conferencing. As stated by Haris et al. (2025), he conducted a qualitative study using in-depth semi-structured interviews with a single participant. In their study, the student practiced English communication through OmeTV for one month to allow them to learn English with real-life context. As a result, it was found that their English-speaking ability had increased, as well as their self-confidence and intrinsic motivation after exposure to foreign speakers. Additionally, they were also able to overcome speaking anxiety

and misunderstandings by applying pragmatic communication strategies spontaneously. Consequently, the design of PBL with video conferencing could be an effective pedagogical approach to improving students' WTC.

Furthermore, the research gap is underlined in this study. Prior studies have investigated the relationship between WTC and psychological factors (MacIntyre et al., 1998; Weda et al., 2021), as well as the effectiveness of PBL in improving classroom communication skills (Farouck, 2016; Wulansari et al., 2022; Zhang & Lin, 2024). However, there were limited studies that integrated PBL with video conferencing. Previously, OmeTV was used to test improvements in speaking performance and communicative competence (Adisty & Nasihah, 2024; Haris et al., 2025), but their research focused only on evaluating linguistic performance such as fluency, pronunciation, and vocabulary usage, without examining students' WTC as an affective and cognitive factor. In this study, their learning design still used OmeTV as a tool to practice speaking English spontaneously without applying PBL, which made it beneficial for students to practice planning, reflecting, and actively collaborating. Furthermore, the research methods were conducted with quantitative and qualitative methods, respectively, and limited to examining the development of student motivation and emotions. It is different from the current study, which uses mixed methods to probe more profound explanations.

Based on the previous discussion, the research problem was identified as whether the PBL approach can enhance students' willingness to communicate (WTC) and how its greater effectiveness may influence their behavior to improve WTC. Therefore, the research addressed the following questions: 1. Is there any significant impact on the students' WTC before and after the implementation of PBL via video conferencing? 2. What are the students' perceptions toward the effectiveness of PBL via video conferencing on their English WTC? Overall, this innovation is expected to contribute to empirical research by transforming the PBL teaching approach into an English language learning model incorporating video conferencing tools.

Literature Review

The Approach of Willingness to Communicate in L2 Learning

Previous studies have introduced WTC as a speaker's willingness to initiate communication and the potential to engage actively in a conversation, particularly in a second language (MacIntyre et al., 1998). Furthermore, he found that psychological and situational factors could influence students' WTC in L2, such as student motivation, social ties, and the L2 community, which have a significant impact on defining WTC. However, several challenges could affect students' WTC because there was anxiety, fear of negative feedback, personal traits, and lack of motivation, which hindered students' engagement and reduced their motivation. This finding is consistent with Eka and Anam (2022) who found that self-confidence, communication competence, learning anxiety, motivation, personality, teachers' role, classroom atmosphere, interlocutors, topics, and types of assignments were factors influencing students' WTC in Surabaya. The issue was addressed by allowing students to employ various strategies, such as utilizing technology in language learning and participating in conversation clubs, to enhance their English performance. Furthermore, the students were also expected to demonstrate their enthusiasm for speaking and improve their communication skills as much as possible. By doing so, these various factors were evaluated to increase students' willingness to communicate in English effectively.

Moreover, L2 confidence had an important role in increased WTC, as it was defined as a belief on their competence in using English effectively and reducing their fear of making mistakes in communication. This was undergone in MacIntyre et al.'s (1998) WTC model which evaluated perceived competence and communication anxiety as the key predictors of WTC. In the same vein, Panggabean et al. (2023) found that the students with L2 confidence showed higher WTC at the same time in ELF context. Their study pointed out that the communication with foreigners which normalized various accents and communication styles, accommodated the students' engagement and reduced their fear of making errors. Thus, it indicated that psychological preparation is as important as linguistic accuracy in promoting WTC.

The Integration of PBL and Video Conferencing to Improve WTC

PBL is a teaching strategy that offered the task to fulfill English learners' needs. It is also a constructive approach to stimulate the learners' engagement when they are required to complete the projects. In this approach, the learners would develop the ability to explore, collaborate, and apply theory and knowledge in real-world situations (Pamuji et al., 2025; Thomas, 2000). Thomas (2000) hence explained that implementing PBL in English classes was highly effective because it encouraged students to practice critical thinking, promoted engagement in completing assignments, and fostered effective collaboration. It served as an important tool not only for building purposeful communication but also for collaboratively constructing knowledge, engaging in authentic conversations, and presenting their work to a real audience. This addressed with vocational college education's needs, which requires English language preparation for international work communication but lacks opportunities for exposure to diverse English communication in local contexts.

Furthermore, careful design needs to be a concern for teachers as learning designers to ensure technology can accommodate meaningful communication, critical reflection, and assignment completion. Furthermore, Chapelle (2019) noted that digital technology can bridge opportunities for learners to engage in purposeful interactions with native and non-native speakers, regardless of geographical boundaries. In contrast, Losi and Nasution (2022) highlighted the importance of task-based and communicative activities in an intensive English-speaking program. Their findings found out that this approach also could strengthen active interaction, fluency, and real communication, but it did not measure explicitly the influence on the increased WTC which could give a long-term impact on their communication competence. Furthermore, this study was limited to applying communicative tasks in classroom-based settings. Therefore, it is necessary to integrate PBL and interactive video conferencing to explain a comprehensive understanding in ELF environment because they face the challenges of unpredictable English communicate thus leading to enhance students' WTC, especially when the project involves intercultural communication with non-native speakers (Cheng et al., 2023; Farouck, 2016).

In the context of vocational education, the implementation of PBL has been shown to improve students' English communication skills, self-confidence, and motivation to learn. For example, an interdisciplinary project involving 47 Information Science students in Thailand, which involved students making presentations using various digital media, demonstrated a significant impact on the development of all four language skills: listening, reading, speaking, and writing (Ponpoon, 2011). Consistent with Megayanti et al. (2020), who conducted a systematic literature review, they emphasized that the PBL model in vocational education could support the development of 21st-century skills (critical thinking, collaboration, creativity, and communication), despite challenges in classroom management and inadequate digital facilities.

Furthermore, Zhang and Lin (2024), who focused on examining the effectiveness of PBL implementation in Chinese vocational education through a literature review, confirmed that PBL could help students develop critical thinking, English speaking, and communication skills and enable them to work practically with people from different countries and cultural backgrounds. This study emphasized the importance of the PBL learning model because it integrated real-world interactions, authentic learning, cross-cultural collaboration, and regular feedback, which were significant for increasingly globalized professional work.

In the same vein, Wulansari et al. (2022) found that the implementation of PBL in vocational education in Indonesia could improve students' 4C skills, including critical thinking, creativity, collaboration, and communication, but it also helped them develop soft skills which were important for the vocational workforce, such as negotiation, leadership, interpersonal communication, and public speaking. It is supported by Bakar et al. (2019) who applied PBL in a vocational college in Malaysia to examine its impact on oral communicative competence in the context of English language learning. The results showed that the experimental group was more engaged and motivated to actively speak up in completing meaningful project assignments and had reduced speaking anxiety. Furthermore, Viswambaran and Shafeek (2019) also confirmed the effectiveness of PBL in improving

students' engagement and adopted deeper learning approaches to reach a better academic performance through group-based problem-solving activities, presenting and defending project results, and self-assessment among vocational college students.

In summary, PBL is one of the better teaching approaches to help improve English communication skills and increase confidence in the workplace. PBL can provide meaningful and authentic project activities in PBL, so that vocational college students can practice practical communication, critical thinking, creativity, and cross-cultural collaboration skills, which can help them overcome the limits of cross-cultural exposure and increase their WTC simultaneously.

METHOD

This study describes the methodology used to assess the effectiveness of PBL integration through video conferencing. This study was evaluated using a mixed-methods explanatory sequential design approach. Creswell and Plano (as cited in Cohen, 2008) stated that a mixed-method was started by collecting quantitative data first, then qualitative data was used to explain and strengthen the statistical findings. T-test and r² results for WTC improvement were analyzed first, followed by interviews to explain the reasons for changes in affective factors such as motivation and self-confidence, and situated antecedent factors such as experiences during PBL activities and OmeTV sessions that influenced WTC improvement.

This design aligns with Creswell and Plano (as cited in Cohen, 2008), who stated that explanatory sequential mixed methods were appropriate for English education research when researchers wanted to explain quantitative results through further qualitative data. Furthermore, the integration of quantitative and qualitative data was discussed to compare with previous studies.

Respondents

This study used 100 vocational students as a sample to complete a questionnaire. Participants were selected based on convenience sampling of vocational students taking Business English for Communication courses because it was easier to access them to conduct PBL. The technique was commonly used in English language education research because the population was primarily tied to classroom teaching and learning schedules (Etikan et al., 2016). In WTC and PBL research, convenience sampling was often used because classes were administratively established and cannot be manipulated randomly (Cao, 2011; Zarrinabadi, 2014).

The data was collected by distributing questionnaire as a useful evaluation tool. The arranged items were adapted from MacIntyre et al. (1998), who introduced the WTC model. Subsequently, five participants were selected based on maximum variation sampling. It was used because these participants had the most significant changes in WTC scores so that it could represent the changes in motivation, self-confidence, and real-time communication experiences (Patton, 2002). In an explanatory sequential mixed methods design, the number of qualitative participants did not have to be proportional to the quantitative sample. As Creswell (2014) stated, he emphasized that for mixed methods, interviews with 4-12 participants were sufficient to explore the topic in depth. The purpose of qualitative data was to explain quantitative findings, not generalize the population.

Before the study was conducted, all participants received an informed consent form explaining the purpose of the study, data confidentiality, and the participant's right to withdraw at any time without academic consequences. All data collected was kept confidential and used solely for scientific purposes (Race & Vidal, 2019).

Instruments

Transforming Language Learning: Project-Based Learning through Video conferencing as Tools to Enhance Willingness to Communicate
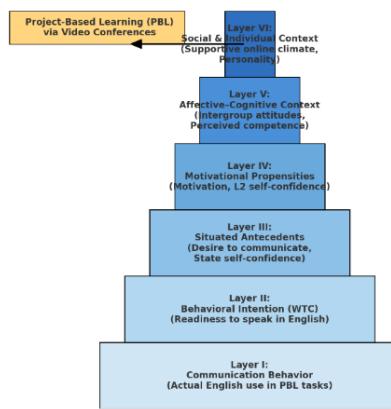

Figure 1. Research framework for the effectiveness of PBL on improving WTC, adopted from McIntyre's (1998) WTC Model

The questionnaire with a 4-point Likert scale and interview questions was designed by adopting WTC model from MacIntyre et al. (1998) to view the progress of their WTC. A 4-point Likert scale was arranged for 20 questions in total with the options of 1 (strongly disagree) to 4 (strongly agree). The neutral option was removed to encourage assertiveness in attitude, opinion, and perspective Croasmun (2011). Then, the questions included 10 items from WTC and PBL, respectively. The WTC model introduced six main layers, with the outermost layer influenced by social and individual context, affective-cognitive context, and motivational propensity. For the inner layers, WTC was affected by antecedent factors, behavioral intentions, and communication behavior.

Procedures

Fifty participants were selected as an experimental group, consisting of students taking English courses, to apply the PBL approach, while the other fifty participants were involved as a control group without the PBL approach. Quantitative data collection was conducted by administering pre-tests and post-tests. After the pre-test, PBL approach was applied to prepare and strengthen their vocabulary, pronunciation, and expressions in everyday English conversations as part of the planning stage. Conversations with both native and non-native speakers were then conducted via video conference during the implementation stage. After that, the post-test was taken to evaluate the progress of their WTC.

During the PBL learning process, each student was observed and monitored to assess active engagement and the diversity of their backgrounds, considering their English level. They were then selected to be key informants in the evaluation of their reflections and learning experiences through one to two hours of in-depth interviews. This interview process demonstrated the effectiveness of PBL in the use of video conferencing on the significant development of students' WTC.

Data analysis

To evaluate the effectiveness of PBL in relation to WTC, this research employed Pearson correlation and regression analysis. Moreover, a paired sample t-test was used to analyze the development of WTC during the pre-test and post-test. As Sugiyono (2013) stated, these statistical procedures were useful to see the significant changes before and after the PBL intervention and assess the increased engagement in PBL and improved WTC during the conversation with foreigners.

Furthermore, this study used instrument testing standards from Sugiyono (2013) to examine the WTC instruments' validity and reliability. Item validity was evaluated using item-total correlation, which used to connect each item with the total score to ascertain if the item measures the same construct. Sugiyono (2013) emphasized that an instrument was valid if it showed a strong connection and could measure what it was supposed to measure.

Meanwhile, instrument reliability was calculated using Cronbach's Alpha, which Sugiyono (2013) recommended for measuring the internal consistency of question items in social research instruments. According to Sugiyono, a Cronbach's Alpha value of ≥ 0.70 indicated that the instrument was reliable and trustworthy. Therefore, although the technical

calculations were not detailed, the reliability standards in this study adhered to Sugiyono's (2013) criteria, thus ensuring consistent and reliable WTC measurement.

Meanwhile, interview results were evaluated using theme analysis, as it is useful for coding patterns of factors that may influence improved WTC. Braun and Clarke (2006) stated that theme analysis could help identify the most emergent themes to understand participants' experiences and perspectives when engaging in a PBL approach.

Meanwhile, the interview results were evaluated by using theme analysis, as it was useful to code the patterns of possible factors influencing improved WTC. Braun and Clarke (2006) suggested that thematic analysis could help identify the most emerging theme to understand the participants' experiences and perspectives when involved in the PBL approach.

FINDINGS AND DISCUSSION

Previous research has shown increased WTC in English communication, influenced by linguistic, affective, social, and contextual factors. The WTC model consistently emphasizes that meaningful communication, self-confidence, and intrinsic motivation underline increased student active participation in class. However, these activities are still limited to simulated classroom interactions and do not fully provide authentic cross-cultural experiences (Jenkins, 2007; MacIntyre et al., 1998).

The current research expands on previous findings by designing a PBL that prepares students with structured learning and then incorporates an ELF environment through video conferencing as a more interactive and communication-oriented approach. PBL holds a strategic pedagogical position to develop authentic and reflective cross-cultural communication, a concept that has not been widely discussed in previous research.

Quantitative Results

This research aimed to investigate the significant difference in the improvement of the students' WTC before and after implementing PBL via video conferencing in the English classrooms. Additionally, the interview results were analyzed to gain insight into the students' perspectives on the effectiveness of PBL approach in enhancing WTC' experience. Table 1 shows a comparison of validity and reliability scores to evaluate the improved WTC in both groups. Then, table 2 provides further details on the comparison between the paired-sample t-test and r-squared for both groups, serving as evidence for the extent of PBL effectiveness.

Table 1. The validity and reliability score of experimental and control group

Items	Experimental Group				Control Group			
	Validity		Reliability		Validity		Reliability	
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test
Layer I: Communication Behavior (Actual Use of English)								
WTC 1	0.431	0.722	0.831	0.892	0.820	0.861	0.906	0.918
WTC 2	0.655	0.169			0.663	0.593		
Layer II: Behavioral Intention (Willingness to Communicate)								
WTC 3	0.568	0.797			0.749	0.845		
WTC 4	0.450	0.790			0.482	0.810		
Layer III: Situated Antecedents (Immediate Factors)								
a. Desire to Communicate with Specific Person								
WTC 5	0.710	0.836			0.806	0.781		
WTC 6	0.671	0.686			0.772	0.689		
b. State Communicative Self-Confidence								
WTC 7	0.482	0.195			0.488	0.510		
WTC 8	0.226	0.196			0.806	-0.103		
Layer IV: Motivational Propensities (Stable Motivational Factors)								
WTC 9	0.688	0.747			0.778	0.499		
WTC 10	0.648	0.878			0.743	0.951		
Layer V: Affective–Cognitive Context								
a. Intergroup Attitudes								
PBL 1	0.789	0.786	0.838	0.896	0.751	0.911	0.850	0.923
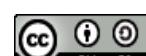
PBL 2	0.683	0.852	0.668	0.918
b. Social Situation / Communicative Competence				
PBL 3	0.731	0.696	0.806	0.776
PBL 4	0.565	0.670	0.794	0.838
Layer VI: Social & Individual Context				
PBL 5	0.731	0.917	0.747	0.892
PBL 6	0.852	0.803	0.859	0.912
PBL 7	0.734	0.759	0.775	0.864
PBL 8	0.721	0.888	0.477	0.742
General Feedback and Experience				
PBL 9	0.642	0.810	0.584	0.809
PBL 10	0.424	0.814	0.626	0.775

Table 1 reveals the effectiveness of PBL approach through the calculation of validity and reliability score. The Cronbach's alpha shows a reliable measure of PBL effectiveness in improving WTC (pre: 0.838 to post: 0.896). This implies that PBL activities become more consistent and effective in measuring the improvement in students' WTC after the intervention. Compared to the control group, the control group shows slightly higher reliability (pre: 0.850 to post: 0.923) which indicates that it is still benefited with real-world exposure from video conferencing even though they are not exposed to the PBL approach.

As presented in Table 1, the student in experimental group shows a significant increase for WTC 1 (pre: 0.431 and post: 0.722) compared to WTC 2 (pre: 0.655 and post: 0.169) indicating a decrease in their readiness to speak in English. It might be because a change in their perspective on using English in the real-world situation is forcing them to be necessary, but unfortunately, their English is not enough to cover the conversation. However, WTC 3 (situated antecedents) and WTC 4 (motivational propensities) show a positive increase in validity (pre: 0.568, 0.450 and post: 0.797, 0.790). This suggests that the students have a strong intention to communicate and are beginning to build their confidence in English. Additionally, they learn to strengthen motivation to improve their English. Meanwhile, the students in the control group present stable validity from WTC 1 to WTC 9 (around 0.820 pre-test and 0.861 post-test) but the improvement is not as significant as that of experimental group. However, WTC 4 shows a significant improvement in validity (pre: 0.482 and post: 0.810) even though without the PBL approach. This suggests that students find video conferencing interactive and comfortable, which helps activate their English communication skills, even lack of grammatical proficiency, leading to increased motivation and confidence.

Moreover, the PBL approach in experimental groups presents strong validity in PBL 1, PBL 2, and PBL 5 (pre: 0.789, 0.683, 0.731 to post: 0.786, 0.852, 0.917). It indicates that the structured learning in PBL can enable students to feel more engaged in meaningful communication with people from diverse backgrounds. Besides, PBL is also important for them to improve their motivation to use English with foreigners for cross-cultural communication. Additionally, their confidence and WTC have increased when they have exposure to foreigners. Meanwhile, control groups show moderate to strong validity in PBL 1, PBL 2, and PBL 8 (pre: 0.751, 0.668, 0.477 to post: 0.911, 0.918, 0.742) indicating improvement in WTC despite the lack of the PBL approach. This shows that interactions with foreigners had a positive impact on the students' WTC, but it is not as impactful as in the experimental group.

Cronbach's alpha in Table 1 indicates a reliable measure of PBL effectiveness in improving WTC, with PBL being consistent across both groups. Specifically, the experimental group showed scores of 0.831 in the pre-test and 0.892 in the post-test, while the control group scored 0.906 in the pre-test and 0.918 in the post-test. Meanwhile, PBL in experimental group scored 0.838 in the pre-test and 0.896 in the post test, while the control group scored 0.850 in the pre-test and 0.923 in the post test. This implies that PBL activities become more consistent and effective in measuring the improvement in students' WTC after the intervention. Compared to the control group, the control group shows slightly higher reliability, indicating that it still benefited from real-world exposure through video conferencing, even though they were not exposed to PBL approach. However, PBL approach still contributes to more consistent and reliable measures of WTC improvement and PBL effectiveness.

Overall, the results emphasize that the experimental group demonstrates higher validity in the post-test compared to control group, which is less effective in utilizing the video conferencing platform without the implementation of PBL. The PBL approach helps students enhance their WTC because it provides structured and guided lessons that enable them to interact appropriately and handle problems of misconceptions and miscommunication more accurately. Although the control group shows moderate improvement in WTC, the PBL approach is suggested to strengthen long-term improvement in WTC and their communication skills.

Table 2. T-test and R^2 value on improved WTC of experimental and control groups

Group	Implementation	T-test	R^2
Experimental	Pre-test	6.310	0.453
	Post-test	16.780	0.854
Control	Pre-test	2.653	0.128
	Post-test	12.333	0.760

In table 2, the findings from pair-sample t-test and r^2 also demonstrate strong evidence for the effectiveness of PBL approach in enhancing the students' WTC. From the paired-sample t-test, the results show that the experimental group outperforms the control groups, as indicated by the pre-test values with t = 6.310, p < 0.001 to post-test values was with t = 16.780, p < 0.001. The significant increase in t-values validates the PBL activities which give benefits to the improvement of the students' WTC, especially when integrated with authentic communication via video conferencing. However, the control group also shows an improvement in their WTC, with a pre-test value at t t= 2.653, p < 0.001 to post-test values at t = 12.333, p < 0.001. Although they also have improved, the change is less significant (p = 0.083). It implies that video conferencing has an effect, since they must activate the use of English when communicating with foreigners. However, this effect is less pronounced than in the experimental group, since they have received more preparation from the structured PBL activities.

Furthermore, r^2 values are used to further analyze the effectiveness of PBL and assess how well the PBL approach influences the changes in WTC after the intervention The experimental group demonstrates a substantial contribution to improved WTC, increasing from 45.3% at the pre-test to 85.4% at the post-test. This implies that PBL activities are not only effective in enhancing the students' WTC for a large proportion of the students, but also has a strong explanatory power in the observed improvement. Likewise, the control group also exhibits the benefits of video conferencing, which increases from 12.8% in the pre-test to 76% in the post-test. But the effect is weaker compared to the experimental group. It confirms that WTC improvement can not rely on real-world communication alone, but rather involves PBL activities as a key factor in strengthening WTC.

Qualitative Findings

The next section examines the students' perspectives when they participate in PBL activities, addressing Research Question 2. The interview data were coded and analyzed into three themes so that the research explore how PBL approach can influence the change of the students' motivation, confidence and engagement that at the end it leads to increase their WTC, how a supportive environment through video conferencing can challenge them to use English more actively and interactively, and how they overcome the difficulty of miscommunication from different cultures and backgrounds.

Motivation and Confidence in Using English for Communication

It was explained that the students experienced changes in their motivation and confidence when the traditional classroom was altered to facilitate more interactive English communication through PBL activities. In this case, the control shifted from the teacher to the learner. This highlighted that the core of their intrinsic motivation was previously for academic achievements, but it turned into personal goals, as it is stated, *"I personally just want to pass the English class with a better score... but now I want to improve my English even more for my future"* (S1) PBL impacted the increased motivation in learning English that became a strong factor in their WTC.

Moreover, S1 showed their WTC from a pragmatic view of their future when it was said, *"I know that someday I might need it."* This perspective defined the future importance of PBL activities as a basis to achieve personal targets and lifelong dreams, not just passing a course. This intrinsic motivation served as the engine of WTC, helping to lower their anxiety and build confidence to speak. S1 was not forced to speak, but it was driven to do so. This aligns with Deci and Ryan (1985), who suggest that intrinsic motivation was a drive for students to engage in an activity for its own enjoyment and satisfaction, rather than for external rewards. As the students engaged in PBL activities, they found more value in learning English for personal growth.

Additionally, the students found the PBL activities to be more engaging, which encouraged them to actively use English in a supportive environment. One student remarked, *"At first, I felt a bit nervous and uncomfortable. This experience made me realize that cross-cultural communication requires patience, openness, and courage to speak even when our English is not perfect."* (S2). It revealed that there was a shift in motivation to continue communicating, despite their imperfect English. It was proven by how they gradually reduced anxiety and then made them feel comfortable with their English. S2 added as a reflection, *"I learned that bravery and willingness to learn are the most important things in communication. Even if our English is not perfect, what matters is our effort to express ideas clearly and simply."* The results showed that the students started to focus on making effort and clear expression as the most important aspect in communication rather than maintaining linguistic accuracy. This focus on clear expression predicted an improvement in their willingness to communicate (WTC). In the same vein, it was supported by the previous studies that video conferencing was able to connect the students with cross-cultural communication and played an authentic communication in which the students played the pragmatic strategy to negotiate meaning, thus promoting the students' confidence and motivation to speak (Cheng et al., 2023; Haris et al., 2025b; Panggabean et al., 2023).

Practical Language Use and Real-World Communication in PBL Activities

In this research, PBL activities utilized tools like video conferencing, such as OmeTV, to link the students with practical communication. S3 highlighted that a crucial learning model to support PBL activities was the topic lessons and the facilitator's role, as it was stated, *"the lessons got through the topic and how the teacher provides a fun and enjoyable environment, it will influence much more to your willingness to communicate"*(S3). This perspective changed the focus from the pedagogical framework to the lesson content of the learning experience. If the content was engaging and the teacher delivered the teaching in a supportive and friendly manner, it would impact the development of their WTC.

Furthermore, the communication task with foreigners was not seen as the final evaluation of their English performance; instead, they used this opportunity to predict their English communication skills. S2 stated that the foreigners *"are not to the end project,"* but the interaction was merely *"just to see evidence of your progress."* This evaluation presented the answer to describe how PBL positively impacted the students' WTC. It was because PBL did not pressure the student to perform perfectly with the number of evaluation rubrics, but they could express their English more freely and without worrying about getting everything right. The topic lessons were carefully designed for self-assessment and encouragement to activate the English skills.

This was in line with Farouck (2016), who emphasized the usefulness of PBL tasks that could promote active engagement, problem-solving, and authentic communication, which eventually improves WTC. Meanwhile, Cheng et al. (2023) pointed out that certain communication variables needed to be considered, including lesson content and teaching style. The lessons should be proposed in a non-threatening environment in PBL to allow the student to express ideas freely and meaningfully. Thus, it helped reduce anxiety, as well as made them feel more confident and willing to use English (Haris et al., 2025b; Hung & Huang, 2021; Weda et al., 2021).

Overcoming Challenges in PBL Activities

Lastly, PBL activities became a medium for them to overcome the most significant barrier with their English, which was the fear of making mistakes. From the students' reflection, it was shown that the project was successfully implemented to provide a supportive environment to change their behavioral activity to be more active and willing to engage, as it was said, "*So the output is being active, to speak even in the class, not only with the foreigners*" (S4). They were taking this project as a psychological safety net to explore their potential when communicating in English with foreigners, as it was said, "*I am trying to be active enough, so I use any vocabulary I have, and I try to speak clearly*" (S5).

Besides that, the student also highlighted the difficulty in understanding accents as a common barrier in real-world communication. The student said, "*Sometimes I don't understand what they said because they have an accent. Therefore, I ask them to repeat again. I say sorry what you mean?*" (S4). This excerpt stated that PBL activities allowed students to creatively and spontaneously employ pragmatic strategies by seeking clarification (Haris et al., 2025). The student viewed the difficulty not as a threat to withdraw from the conversation but as an opportunity to understand and communicate clearly, despite cultural and linguistic barriers. Additionally, the students improved both their listening comprehension skills and their understanding of cross-cultural concepts. This improvement reflected a positive shift in the students' WTC.

The findings were closely related to Farouck (2016), who stated that PBL was proven as an effective method to solve language problems and communicative anxiety. Similarly, Haris et al. (2025) also highlighted that video conferencing, such as OmeTV, has helped students engage in real-time conversations, using a positive affirmation and growth mindset to overcome nervousness, and increase confidence. They did not view the difficulties as obstacles but as an opportunity to improve. Likewise, Cheng et al. (2023) emphasized the benefit of PBL activities at university in northern Taiwan. The students were involved in giving four presentations in the semester related to business, tourism, and global issues. By applying real-world tasks, the students were challenged to use pragmatic strategies such as asking for clarification and identified more accents across cultures, thus reinforcing the improvement of the students' WTC. Compared to the current study, this study contributes to demonstrating PBL as an effective strategy for increasing the students' WTC, especially in cross-cultural communication and real-world contexts.

Integrated Discussion

Furthermore, the research results confirmed that the increase in t-test and r² values in the quantitative data indicated that PBL affected almost all layers of WTC, particularly the motivational and affective-cognitive layers. These quantitative results were supported by interviews, which indicated that students had shifted from extrinsic to intrinsic motivation, in accordance with MacIntyre's framework. MacIntyre et al. (1998) stated that self-confidence and motivation were core precursors to WTC. This argument expanded the WTC model by stating that PBL provided a safe space for students to actualize their courage to speak and self-reflect in authentic situations.

This conclusion is also in line with Jenkins (2007), who emphasized that effective cross-cultural communication in ELF did not only rely on linguistic accuracy following native norms but also prioritized the goal of shared intelligibility. In video conferencing interactions, students faced the challenge of speaking with various accents and speaking styles from both non-native and native speakers, forcing them to employ pragmatic strategies such as asking for clarification and repetition. ELF practices during PBL implementation showed that grammatical perfection was not the main priority but rather emphasized the ability to adapt to cultural diversity as a form of linguistic accommodation in ELF. The data also supports the findings of Thomas (2000), who showed that PBL made participants more confident and motivated because they were involved in meaningful and goal-oriented projects. Thus, students no longer viewed English as a mere subject but also as an adaptive international communication tool and a platform for personal and professional development. This type of activity also encouraged the improvement of their WTC.

CONCLUSION

In conclusion, this study assessed the effectiveness of integrating PBL with video conferencing through OmeTV to enhance students' WTC using mixed methods, and the findings provide strong evidence that PBL significantly improves students' willingness and confidence to communicate in English, as shown by the experimental group's higher WTC scores (t = 16.780, p < 0.001) compared to the control group, which showed only moderate improvement using video conferencing without PBL. Qualitative results further revealed that PBL helped students overcome affective barriers such as fear of making mistakes, anxiety about unfamiliar accents, and discomfort in real-life interactions by providing structured learning, collaborative tasks, and authentic communication that boosted intrinsic motivation and shifted students' learning orientation toward personal and professional growth. The study offers meaningful implications for ELT by presenting an innovative, student-centered pedagogical model that encourages active communication, negotiation of meaning, and pragmatic competence—skills essential for vocational college students who must develop confidence, adaptability, and cross-cultural communication abilities for workplace demands—while highlighting the relevance of prioritizing clarity and communicative effectiveness over grammatical perfection in 21st-century language learning. Nonetheless, the study acknowledges limitations related to generalizability due to the single-institution sample, reliance on one platform (OmeTV) with spontaneous interactions, and the short-term evaluation of WTC, suggesting future research explore more diverse participant groups, utilize multiple communication platforms, conduct longitudinal studies to examine long-term changes in WTC and pragmatic strategies, and investigate how different PBL task designs, group dynamics, or teacher facilitation styles influence WTC across cultural and educational contexts.

ACKNOWLEDGEMENT

REFERENCES

Adisty, T., & Nasihah, D. (2024, December). The Use of the Online Language Exchange Platform "OmeTV" on Indonesian EFL Students' Ability to Communicate in English. In *Proceedings of the 5th International Conference on English Language Teaching (ICON-ELT 2024)* (Vol. 893, p. 239). Springer Nature.

Bakar, N. I. A., Noordin, N., & Razali, A. B. (2019). Improving oral communicative competence in english using project-based learning activities. *English Language Teaching*, *12*(4), 73-84.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77-101.

Cao, Y. (2011). Investigating situational willingness to communicate within second language classrooms from an ecological perspective. *System*, *39*(4), 468-479.

Chapelle, C. A. (2019). Technology-mediated language learning. *The Cambridge handbook of language learning*, 575-596.

Cheng, H. F., Chen, H. I., Duo, P. C., & Wang, C. (2023). The Role of Communication Variables in L2 Communication Intention in Project-Based Learning (PBL) Instructional Contexts. *Taiwan Journal of TESOL*, *20*(1), 1-32.

Cohen, E. (2008). Book Review: Creswell, JW, & Plano Clark, VL (2006). Designing and Conducting Mixed Methods Research. Thousand Oaks, CA: Sage. *Research on Social Work Practice*, *18*(5), 527-530.

Croasmun, J. T., & Ostrom, L. (2011). Using likert-type scales in the social sciences. *Journal of adult education*, *40*(1), 19-22.

Deci, E. L., & Ryan, R. M. (1985). Conceptualizations of intrinsic motivation and self-determination. In *Intrinsic motivation and self-determination in human behavior* (pp. 11-40). Boston, MA: Springer US.

Edwards, E., & Roger, P. S. (2015). Seeking Out Challenges to Develop L2 Self-Confidence: A Language Learner's Journey to Proficiency. *Tesl-Ej*, *18*(4).

Eka, E. Y., Munir, A., & Anam, S. U. The Factors Affecting Students'level Of Willingness To Communicate (Wtc) In An English Class At A Private Junior High School In Surabaya.

Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American journal of theoretical and applied statistics*, *5*(1), 1-4.

Farouck, I. (2016). A project-based language learning model for improving the willingness to communicate of EFL students. *Systemics, cybernetics and informatics*, *14*(2), 11-18.

Haris, A., Rauf, W., & Saputra, W. A. (2025). Revolutionizing English Speaking Skills: Unleashing the Power of OmeTV Application for Student. *Jurnal Edukasi Saintifik*, *5*(1), 38-49.

Hung, S. T. A., & Huang, H. T. D. (2021). Exploring EFL Learners' Willingness to Communicate in Multimodal Videoconferences. *International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT)*, *11*(4), 79-99.

Jenkins, J. (2007). *English as a lingua franca: Attitude and identity*. Oxford University Press.

Kalocsai, K. (2011). The show of interpersonal involvement and the building of rapport in an ELF community of practice. *Latest trends in ELF research*, 113-137.

Kaur, J. (2011). Raising explicitness through self-repair in English as a lingua franca. *Journal of pragmatics*, *43*(11), 2704-2715.

Ke, I. C., & Cahyani, H. (2014). Learning to become users of English as a Lingua Franca (ELF): How ELF online communication affects Taiwanese learners' beliefs of English. *System*, *46*, 28-38.

Losi, R. V., & Nasution, M. M. (2022). Students'attitudes Toward Communicative Language Teaching (Clt) In English Speaking Intensive Program. *International Journal of English and Applied Linguistics (IJEAL)*, *2*(1), 95-102.

MacIntyre, P. D., Clément, R., Dörnyei, Z., & Noels, K. A. (1998). Conceptualizing willingness to communicate in a L2: A situational model of L2 confidence and affiliation. *The modern language journal*, *82*(4), 545-562.

Megayanti, T., Busono, T., & Maknun, J. (2020, April). Project-based learning efficacy in vocational education: Literature review. In *IOP Conference Series: Materials Science and Engineering* (Vol. 830, No. 4, p. 042075). IOP Publishing.

Pamuji, Kristanto, W., Ahmad, T., & Khotimah, N. (2025). Integrating project-based learning and video exposé to enhance English language teaching in higher education: a case study of student empowerment. *Cogent Education*, *12*(1), 2578371.

Panggabean, H. M., & Samosir, S. M. (2025). Bridging a Gap: Indonesian English Teachers' Views on ELF and Its Role in Workplace Communication. *Kajian Linguistik dan Sastra*, *4*(2), 247-266.

Panggabean, H., Ke, I. C., & Perangin-Angin, A. B. (2023). L2 Confidence Development of ELF International Students in Taiwan. *TEFLIN Journal: A Publication on the Teaching & Learning of English*, *34*(2).

Patton, M. Q. (2014). *Qualitative research & evaluation methods: Integrating theory and practice*. Sage publications.

Poonpon, K. (2011). Enhancing English skills through project-based learning. *The English Teacher*, *40*(1).

Race, R., & Vidal-Hall, C. (2019). The BERA/SAGE handbook of educational research–Volumes 1 and 2.

Copyright (c) 2025 Hanna Maria Panggabean, et al.

Transforming Language Learning: Project-Based Learning through Video conferencing as Tools to Enhance Willingness to Communicate

Sugiyono, D. (2013). Metode penelitian pendidikan pendekatan kuantitatif, kualitatif dan R&D.

Thomas, J. W. (2000). A review of research on project-based learning.

Viswambaran, V. K., & Shafeek, S. (2019, March). Project based learning (PBL) approach for improving the student engagement in vocational education: an investigation on students 'learning experiences & achievements. In *2019 Advances in Science and Engineering Technology International Conferences (ASET)* (pp. 1-8). IEEE.

Weda, S., Atmowardoyo, H., Rahman, F., Said, M. M., & Sakti, A. E. F. (2021). Factors Affecting Students' Willingness to Communicate in EFL Classroom at Higher Institution in Indonesia. *International Journal of Instruction*, *14*(2), 719-734.

Wulansari, R. E., Nabawi, R. A., Safitri, D., & Kiong, T. T. (2022). The effectiveness of project-based learning on 4Cs skills of vocational students in higher education. *Journal of Technical Education and Training*, *14*(3), 29-37.

Wulansari, R. E., Nabawi, R. A., Safitri, D., & Kiong, T. T. (2022). The effectiveness of project-based learning on 4Cs skills of vocational students in higher education. *Journal of Technical Education and Training*, *14*(3), 29-37.

Xu, X. (2018). Research on the Reform of English Project Teaching in Higher Vocational Colleges in the New Period.

Zarrinabadi, N. (2014). Communicating in a second language: Investigating the effect of teacher on learners' willingness to communicate. *System*, *42*, 288-295.

Zhang, Y., & Li, B. (2024). Assessing the Efficacy of Project-Based Learning in Higher Vocational English Courses for Developing Practical Communication Skills. *Journal of Ecohumanism*, *3*(7), 1660-1670.