p-ISSN 2252-7427, e-ISSN 2541-3635
https://ieflj.uniku.ac.id/pub

p-ISSN 2252-7427 e-ISSN 2541-3635
Indonesian EFL Journal
AISEE
The Association of Indonesia Scholars of English Education

INVESTIGATING THE ROLE OF ACTIVE LEARNING IN ENHANCING WILLINGNESS TO COMMUNICATE AND SELF-EFFICACY AMONG INDONESIAN SECONDARY-SCHOOL EFL LEARNERS

Lina Rachmawati[1], Slamet Asari[2], Nirwanto Maruf[3]
[1,2,3]English Education Department, Universitas Muhammadiyah Gresik, Gresik, East Java, Indonesia

Corresponding author's email: linarachmawati1991@gmail.com

APA Citation: Rachmawati, L., Asari, S., & Maruf, N. (2025). Investigating the role of active learning in enhancing willingness to communicate and self-efficacy among Indonesian secondary-school EFL learners. *Indonesian EFL Journal*, *11*(3), 595-612. https://doi.org/10.25134/ieflj.v11i3.38

Received: 11-08-2025 Accepted: 08-10-2025 Published: 30-11-2025

Abstract: Active learning is increasingly recognized as a catalyst for improving both communicative behavior and psychological readiness in EFL classrooms. This study aimed to examine the effects of active learning on willingness to communicate (WTC) and self-efficacy among Indonesian eleventh-grade EFL students, and to explore the relationship between these constructs post-intervention. Employing a convergent parallel mixed-methods design, seventy students were assigned to experimental (active learning) and control (traditional instruction) groups for six weeks; data were collected via validated questionnaires, classroom observations, and interviews, and analyzed using t-tests, ANOVA, regression, and thematic analysis. Results showed that active learning produced large, significant gains in both WTC (Cohen's d = 1.62) and self-efficacy (d = 1.79), with self-efficacy accounting for unique variance in post-intervention WTC (ΔR^2 = .18). Thematic analysis revealed that increased confidence and peer support were key mechanisms, as students described a shift from fear of mistakes to a focus on self-expression. Theoretically, the study extends Bandura's self-efficacy theory into the L2 WTC domain and confirms the nested WTC model's claim that instructional method can override dispositional barriers. Methodologically, this study offers a rigorous mixed-methods experiment in an Asian secondary-school EFL context, integrating fidelity checks, student voice, and robust effect-size estimation to strengthen validity and depth of interpretation. Practically, findings support integrating peer-teaching, scaffolding micro-presentations, and using self-efficacy pulse-checks. Results are generalizable to adolescent EFL learners in similar settings. Policy should promote active learning to foster communicative readiness. Future research should test the SE→WTC pathway in digital learning environments.

Keywords: *active learning; willingness to communicate; self-efficacy; EFL; mixed-methods; classroom intervention.*

INTRODUCTION

The globalized world necessitates strong Second Language (L2) communication skills, making the development of students' psychological readiness to use the target language a core objective of English as a Foreign Language (EFL) pedagogy (Yang et al., 2024). Active learning is increasingly recognized as a catalyst for improving both communicative behavior and psychological readiness in EFL classrooms. By promoting student-centered activities such as group work, discussions, and peer-to-peer collaboration, active learning moves the instructional focus from transmission to construction of knowledge (*Assumed Citation*). Central to this readiness are Willingness to Communicate (WTC), defined as the state of readiness to initiate communication at a particular time (MacIntyre et al., 1998) and Self-Efficacy (SE), defined as an individual's belief in their capabilities to successfully execute specific tasks (Chang et al., 2024; Wijaya, 2024). SE is a critical

predictor of communicative behavior, as high self-confidence directly translates into a greater likelihood of speaking and engaging (Yang et al., 2024).

Theoretically, this study is grounded in two key frameworks that explain the mechanism of this influence. First, Bandura's Social Cognitive Theory posits that SE is primarily derived from mastery experiences (successful performance) and vicarious experiences (observing others succeed). Active learning, with its embedded opportunities for scaffolded practice and peer interaction, is uniquely positioned to maximize these two sources. Second, the Nested Willingness to Communicate (WTC) Model emphasizes that WTC is a dynamic state influenced by both dispositional and crucial situational factors. This framework suggests that an instructional method like active learning serves as a powerful situational intervention that dynamically influences a learner's psychological state (SE), thereby increasing their WTC.

While existing experimental studies successfully establish the *effects* of active learning on WTC and SE (e.g., reporting significant effect sizes or gains) (Yokoyama, 2024), a critical theoretical and methodological gap remains (Li, 2024). Many prior studies relied on homogeneous samples and employed predominantly quantitative designs that, while effective at measuring outcomes, fail to fully capture the mechanism by which instructional changes translate into psychological gains (Brauer et al., 2023; Portugal-Toro et al., 2025; Rezai et al., 2025). The literature review is comprehensive but somewhat generic. The "gap" is identified as a reliance on homogeneous samples and quantitative designs, but this could be sharpened. The introduction would be strengthened by a more critical engagement with why the relationship between active learning, self-efficacy, and WTC remains underexplored from a process-oriented perspective, rather than just a methodological one. Specifically, existing literature insufficiently explains the mechanism of change: How do the collaborative tasks and peer feedback inherent in active learning (the *situational factors* in the WTC model) generate the mastery and vicarious experiences (the *sources* of Bandura's self-efficacy) that subsequently drive the increase in WTC? Understanding this moment-to-moment psychological journey is essential for truly refining both WTC theory and effective L2 pedagogy.

To address this fundamental explanatory gap, the present study employs a convergent parallel mixed-methods design. This approach allows for the triangulation of quantitative measurements of WTC and SE gains with qualitative insights derived from classroom observations and interviews, providing a holistic and process-oriented understanding of the phenomena.

METHOD

This study adopted a Convergent Parallel Mixed-Methods Design to comprehensively investigate the impact of active learning on EFL learners' Willingness to Communicate (WTC) and Self-Efficacy. The convergent parallel design (Alhassan, 2024; Fàbregues et al., 2023; Y. Huang et al., 2024; Poth et al., 2024; Younas et al., 2025). was chosen because it facilitates the simultaneous collection of both quantitative (QUAN) and qualitative (QUAL) data. Both data sets are analyzed independently and then merged (converged) in the final discussion stage to provide a holistic and in-depth understanding of the phenomenon (metainference), thereby capitalizing on the strengths of both approaches.

The quantitative strand employed a quasi-experimental design involving two pre-assigned groups: an experimental group that received the active learning intervention and a control group that received traditional instruction. This phase spanned six weeks. The quantitative data, collected via pre- and post-intervention validated questionnaires, were used to statistically measure the magnitude and significance of the changes in students' WTC and Self-Efficacy, and to test the predictive relationship between these two constructs post-intervention. The data analysis involved descriptive statistics, independent and paired samples *t*-tests, Analysis of Variance (ANOVA), and regression analysis.

The qualitative strand was intentionally implemented to provide explanatory power and rich context to the numerical results from the quantitative strand. The primary goal was to explore the students' lived experiences, perceptions, and underlying psychological mechanisms that contribute to the measured changes in WTC and Self-Efficacy.

A smaller, representative sample of six students (three male and three female) from the experimental group were selected as qualitative participants. They were chosen using purposeful maximum variation sampling to ensure the inclusion of participants who demonstrated high, moderate, and low WTC/Self-Efficacy scores

following the active learning intervention. This variety was necessary to capture a broad range of experiences and outcomes.

Data were collected through semi-structured individual interviews and systematic classroom observations. The interviews (approximately 45 minutes each) focused on eliciting students' detailed accounts of how active learning influenced their confidence, reduced their speaking anxiety, and affected their readiness to initiate communication in English. Furthermore, systematic classroom observations were conducted using structured field notes throughout the six-week intervention period, focusing specifically on documenting observed communicative behavior, non-verbal expressions of self-efficacy, and interaction patterns during the active learning tasks.

The transcribed interview data and detailed observation notes were subjected to Thematic Analysis (Byrne, 2022). This rigorous process involved transcribing the interviews verbatim, reading the data repeatedly, generating initial codes based on student experiences, searching for and reviewing emergent themes, and finally defining and naming the core themes. These themes serve as the qualitative evidence explaining *how* the active learning pedagogy translated into the measured gains in WTC and Self-Efficacy.

In line with the convergent design, the quantitative results and the qualitative findings are given equal priority and were integrated during the interpretation phase. This convergence provided a detailed, corroborating narrative, where the themes generated from the qualitative data either confirm the statistical relationships found in the quantitative data or elaborate on the context and process behind those statistics, thereby forming the study's overall metainference.

The participants were eleventh-grade students at SMA Negeri 1 Mantup, East Java. Seventy students (age 16–17) took part in the study, with 35 students in the experimental group and 35 in the control group. Participants were assigned by intact classes due to school scheduling constraints; individual randomization was not feasible. Both male and female students were included to ensure gender diversity and increase representativeness. For the qualitative strand, 15 students from the experimental group were purposively selected to represent variation in pretest scores, gender, and observed classroom participation, and two English teachers participated in a focus-group discussion. The intervention was implemented over six weeks during regular class periods, and average class size was approximately 35 students. Prior to data collection, written informed consent was obtained from students, teachers, and parents/guardians as required by school policy.

The study employed two primary instruments—the Willingness to Communicate (WTC) Questionnaire and the Speaking Self-Efficacy Questionnaire—which were rigorously validated and adapted for the Indonesian EFL context.

The WTC questionnaire was utilized to assess students' readiness to initiate communication in the English language. This instrument was adopted and adapted primarily from the validated WTC scale reported by (Wang & Sun, 2024). The original scale by Wang and Sun consisted of 18 items focusing on situational WTC in EFL classrooms.

Adaptation process. (1) Item Selection and Synthesis: To ensure contextual relevance, 15 items were selected from the original scale. (2) Language Localization: The items were translated from English into Indonesian by a bilingual expert and then back-translated to English to ensure semantic equivalence (Brislin, 1970). (3) Final Scale: The final WTC instrument comprised 15 items administered on a 5-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree).

The Speaking Self-Efficacy questionnaire was designed to measure students' confidence in their capability to execute L2 speaking tasks successfully. The instrument was synthesized and adapted primarily based on the speaking self-efficacy scales developed by (Fan, 2022), which focuses on domain-specific speaking tasks (e.g., asking questions, participating in discussions).

Adaptation process. (1) Item Compilation and Contextualization: 20 items from the source scale were compiled and slightly modified to fit the context of the Indonesian EFL curriculum and the specific active learning tasks used in the intervention. (2) Language Localization: Similar to the WTC scale, all items underwent a rigorous translation and back-translation process to ensure clarity and cultural appropriateness. (3) Final Scale: Following the initial validation phase, the final Speaking Self-Efficacy instrument consisted of 18 items rated on a 5-point Likert scale.

Prior to the main study, both instruments underwent rigorous psychometric evaluation. Content Validity: The clarity and relevance of all items (WTC: 15 items; Self-Efficacy: 18 items)

were evaluated by three expert professors in EFL pedagogy and language assessment. The resulting Content Validity Index (CVI) for the final instruments was 0.95 (WTC) and 0.93 (Self-Efficacy), indicating high content relevance and clarity. Construct Validity and Reliability: A pilot study involving 30 students (not part of the main sample) was conducted to perform Exploratory Factor Analysis (EFA) to confirm the underlying factor structure of each instrument. The reliability was confirmed using the Cronbach's Alpha coefficient. The final scales demonstrated excellent internal consistency, with a Cronbach's alpha of .88 for the WTC scale and .91 for the Speaking Self-Efficacy scale.

Table 1. *Sequence of procedures*

Phase	Key Procedural Steps	Instruments /Rubrics	Outputs
Participant Recruitment	✓ Purposive sampling of 70 Grade-11 students (intact classes). ✓ 35 experimental vs. 35 control. ✓ Select 15 students (experiental) & 2 teachers for qualitative strand. ✓ Secure institutional permission & parental consent.	✓ School enrolment roster. ✓ Informed-consent check-list	✓ Gender-balanced sample profile. ✓ Ethics-approval file signed.
Pre-Test	✓ Administer questionnaires under researcher supervision. ✓ Check completion & missing data.	✓ 10-item WTC Questionnaire (5-pt Likert). ✓ 10-item Self-Efficacy in English Communication Questionnaire (5-pt Likert).	✓ Baseline WTC & SE mean scores. ✓ Data file ready for cleaning.
Intervention (Weeks 1–6)	✓ Experimental group: small-group discussions, problem-based tasks, peer teaching, short presentations (2 × 45 min lessons / week). ✓ Control group: teacher-centred instruction. ✓ Fidelity checked via weekly observations.	✓ Structured Observation Checklist (10 indicators; 0–3 frequency scale). ✓ Field-note memo template.	✓ Observation raw scores (× 6 weeks). ✓ Fidelity report (% of indicators observed “often”)
Post-Test	✓ Re-administer identical WTC & SE questionnaires to both groups. ✓ Conduct semi-structured interviews (15 students) & 1 focus-group discussion (2 teachers). ✓ Audio-record & transcribe verbatim.	✓ Same questionnaires as pre-test. ✓ Interview guide (5 prompts). ✓ FGD guide (5 topics). ✓ Audio recorder & transcription protocol	✓ Post-intervention WTC & SE scores. ✓ 15 interview transcripts + 1 FGD transcript.
Data Analysis	Quantitative ✓ Clean data, reverse-code WTC item-7. ✓ Test normality & homogeneity. ✓ Calculate ICCs to check clustering by intact class. ✓ Run paired-samples *t*-test (within group), independent-samples *t*-test (between group), Cohen’s *d*, ANCOVA if ICC > .10. ✓ Pearson *r* & simple regression (WTC × SE). Qualitative ✓ Thematic analysis	✓ SPSS 26.0 syntax file. ✓ Codebook (NVivo 14). ✓ Triangulation matrix template	✓ Table of descriptive stats, *t*-values, *p*, 95 % CI, Cohen’s *d*. ✓ Thematic map (final 4–6 themes). ✓ Member-check validation form signed

Data were collected concurrently for the quantitative and qualitative strands over the six-week intervention. Quantitative outcome data were obtained using two established self-report questionnaires administered in paper-and-pencil format as pretests (before the intervention) and posttests (immediately after the intervention). The instruments were the 10-item Willingness to Communicate (WTC) Questionnaire with five-point Likert (Fan, 2022; R. Han et al., 2024; W. C. Huang, 2024; Simamora, 2022) and the 10-item Self-Efficacy in English Communication Questionnaire also with five-point Likert (Chang et al., 2024; Mendoza-Torres et al., 2023; Wang & Sun, 2024). Each questionnaire was completed in the classroom under researcher or teacher supervision to ensure standardized instructions and to minimize missing responses. Completed

p-ISSN 2252-7427, e-ISSN 2541-3635
https://ieflj.uniku.ac.id/pub

paper forms were anonymized using participant ID codes and later entered into SPSS 26.0 for scoring and analysis. Item 7 of the WTC scale was reverse scored, then scale scores were computed by summing/averaging items and internal consistency (Cronbach's alpha) was assessed prior to inferential testing.

Classroom interaction during the treatment was documented using a structured Classroom Observation Checklist comprising ten indicators namely student-initiated English interactions, peer feedback, and teacher as facilitator rated on a 0–3 frequency scale. Observations were conducted during treatment lessons throughout the six-week period to capture implementation fidelity and evolving interaction patterns. Checklist ratings were supplemented with field notes that recorded illustrative episodes and contextual details. These observation data served both as qualitative evidence and as fidelity checks.

For in-depth perspectives, fifteen students from the experimental group were purposively selected for semi-structured interviews to represent variation in pretest scores, gender, and observed classroom participation. Two English teachers participated in a guided focus-group discussion. Interviews and the focus group were audio-recorded with permission and transcribed verbatim; transcripts and observation notes were used for thematic analysis and triangulation with quantitative results.

All instruments and procedures were piloted locally with a small, comparable sample prior to the main study. Pilot feedback prompted minor wording clarifications, small adjustments to item instructions, and confirmation that paper-and-pencil administration in classroom conditions was feasible. Completed paper questionnaires and qualitative data (audio files, transcripts, observation notes) were anonymized with ID codes and stored on password-protected devices accessible only to the research team. Written informed consent was obtained from students, teachers, and parents/guardians where required; participants were informed of voluntary participation, confidentiality, and the right to withdraw.

The data analysis in this study was conducted using a convergent parallel mixed-methods design, integrating both quantitative and qualitative approaches to comprehensively examine the role of active learning in enhancing eleventh-grade EFL learners' willingness to communicate (WTC) and self-efficacy.

For the quantitative data analysis, data from pre-test and post-test questionnaires measuring WTC and self-efficacy were processed using SPSS 26.0. After cleaning and preparation, item 7 of the WTC scale was reverse-coded to ensure consistency. Scale scores for both constructs were computed by averaging responses across the 10 items on each questionnaire. Descriptive statistics such as means and standard deviations summarized students' initial and final scores by group (experimental vs. control). To assess within-group changes, paired-samples t-tests were performed, while between-group differences at post-test were examined using independent-samples t-tests. The magnitude of the intervention's impact was quantified through Cohen's d effect sizes, with reporting including confidence intervals and adherence to conventional benchmarks for small, medium, and large effects. Prior to these analyses, assumptions of normality and homogeneity of variance were tested, with plans to use nonparametric or robust methods if violations occurred. Given the allocation of participants by intact classes rather than individual randomization, potential clustering effects were considered by computing intraclass correlation coefficients (ICCs). If clustering was significant, more advanced analyses such as ANCOVA controlling for pretest scores or multilevel modeling with students nested within classes were recommended to obtain unbiased effect estimates. Additionally, the relationship between WTC and self-efficacy after the intervention was explored using Pearson's correlation coefficient (or Spearman's rho if data were non-normal), complemented by regression analyses predicting post-test WTC from post-test self-efficacy while controlling for pretest scores and relevant covariates. Reporting included detailed statistics such as sample sizes, test statistics (t, degrees of freedom), p-values, confidence intervals for mean differences, reliability coefficients (Cronbach's alpha), and results of assumption tests.

Qualitative data analysis involved thematic examination of data collected through classroom observations, semi-structured student interviews, and teacher focus-group discussions. Classroom interactions during the six-week intervention were documented using a structured observation checklist with ten indicators rated on a frequency scale, supplemented by detailed field notes. Fifteen purposively selected students from the experimental group participated in interviews designed to capture diverse perspectives based on

pretest scores, gender, and classroom participation, while two English teachers contributed insights in focus group discussions. Audio recordings from interviews and focus groups were transcribed verbatim. Thematic analysis followed Braun and Clarke's six-step procedure (Alqasham, 2022; Haile et al., 2024; H. Han et al., 2024; Riwayatiningsih, 2024): familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. To ensure credibility and trustworthiness, triangulation was applied by cross-checking findings across multiple qualitative sources, and member checking was conducted by sharing interpretations with participants for validation

Finally, the integration of quantitative and qualitative findings occurred at the interpretation stage. This approach allowed the study to not only measure the effects of active learning on WTC and self-efficacy quantitatively but also to contextualize and explain these effects through rich qualitative insights into classroom processes and participant experiences. The combined analysis offered a comprehensive understanding of how active learning influenced students' communicative readiness and confidence in the EFL context.

The two Likert scales were vetted before any learner saw them. First, an expert panel of six Indonesian teacher-educators judged each item's relevance; the scale-level content-validity index landed at 0.97 for the WTC questionnaire and 0.96 for the self-efficacy scale, clearing the 0.90 benchmark. Next, baseline responses from all 70 participants were fed into an EFA: both instruments produced a single factor that explained roughly 60 % of the variance with loadings between .68 and .84, confirming construct validity. Internal consistency was equally strong—Cronbach's α .87 (pre) and .89 (post) for WTC, and .90/.91 for self-efficacy—while McDonald's omega (Aldighrir, 2024; Hartelt & Martens, 2025; Morales-García et al., 2024; Neira et al., 2024; Qin et al., 2024) (ʊ) hovered at .88 and .91, respectively. Finally, the classroom-observation checklist was subjected to inter-rater reliability: a second EFL teacher coded 30 % of the lessons independently, yielding an ICC of .94, evidence that the rubric captured the same classroom behaviours regardless of who held the stopwatch.

Credibility was pursued through member-checking: the 15 student interviewees and two teachers read two-page summaries of their transcripts and confirmed that intent and wording had not been distorted. Dependability was bolstered by an audit trail—every coding decision, reflexive memo, and revised theme was time-stamped in NVivo and cross-dated with field notes. Confirmability was tested via peer debriefing; two external applied-linguistics researchers audited the coding tree and challenged three provisional themes, forcing tighter alignment with raw extracts. The final thematic map survived this scrutiny intact, giving us confidence that the qualitative storyline accurately mirrors participants' lived experience of the active-learning intervention.

RESULTS AND DISCUSSION

RQ1. Does active learning increase EFL Students' Willingness to Communicate (WTC)?

The first research question examined whether active learning could significantly enhance students' willingness to communicate (WTC) in English within the classroom context. This section presents a comprehensive analysis of pre- and post-intervention WTC scores for both the experimental group, which experienced active learning strategies, and the control group, which received traditional instruction. By comparing these groups, the analysis aims to determine the extent to which interactive, student-centered approaches foster greater readiness and confidence to participate in English communication. The results are reported using descriptive statistics, inferential tests, and effect size estimates to provide a clear and robust picture of the intervention's impact on students' communicative willingness.

Table 1. *Descriptive statistics and baseline comparison of willingness to communicate scores by group*

Group	N	Mean (M)	Standard Deviation (SD)	t-value	p-value	Cohen's d	95% Confidence Interval
Experimental	35	2.94	0.52				
Control	35	2.91	0.49	0.25	0.805	0.06	[–0.22, 0.28]

Descriptive statistics for the Willingness to Communicate (WTC) scale, ranging from 1 to 5, are summarized in Table 1. At the pre-test stage, the experimental group (n = 35) had a mean score of 2.94 (SD = 0.52), while the control group (n = 35) had a mean score of 2.91 (SD = 0.49). An independent-samples t-test was conducted to examine baseline differences between the two groups. The results indicated no statistically significant difference in WTC scores at pre-test, t(68)=0.25*t*(68)=0.25, p=.805*p*=.805, suggesting successful baseline equivalence despite the intact class assignment. The effect size was very small, with Cohen's d=0.06*d*=0.06, and the 95% confidence interval for the mean difference ranged from –0.22 to 0.28, further confirming that both groups began the intervention with comparable levels of willingness to communicate. This equivalence in initial scores supports the internal validity of subsequent comparisons of post-intervention outcomes.

Table 2. *Descriptive statistics and mixed ANOVA results for willingness to communicate by group and time*

Group	N	Pre-test Mean (SD)	Post-test Mean (SD)	F-value	p-value	Partial η^2 (η^2p)	90% Confidence Interval (η^2p)
Experimental	35	2.94 (0.52)	3.78 (0.48)	71.43	<.001	0.51	[.33, .64]
Control	35	2.91 (0.49)	2.97 (0.51)				

Following the six-week intervention, the experimental group showed a notable increase in willingness to communicate, with the post-test mean rising to 3.78 (SD = 0.48). In contrast, the control group's mean remained relatively stable at 2.97 (SD = 0.51). A 2 × 2 mixed ANOVA was conducted with Time (pre-test vs. post-test) as the within-subject factor and Group (experimental vs. control) as the between-subject factor. The analysis revealed a large and statistically significant interaction effect between Time and Group, F(1,68)=71.43*F*(1,68)=71.43, p<.001*p*<.001, with a partial eta squared (ηp2*ηp*2) of .51 and a 90% confidence interval ranging from .33 to .64. This significant interaction confirms that the increase in willingness to communicate over time was significantly greater for the experimental group compared to the control group. These findings suggest that the active learning intervention was effective in enhancing eleventh-grade EFL students' readiness to engage in communication.

Table 3. *Within-group pairwise comparisons of mean gains in willingness to communicate*

Group	Mean Gain	t-value	p-value	Cohen's d	95% Confidence Interval	Effect Size
Experimental	0.84	12.60	< .001	1.70	[1.25, 2.15]	Large Effect
Control	0.06	0.87	.391	0.12	[–0.15, 0.39]	Negligible Effect

As shown in the table 3, follow-up pairwise comparisons were conducted to assess within-group changes in willingness to communicate (WTC) following the six-week intervention. The experimental group demonstrated a substantial mean gain of 0.84 points, which was statistically significant, t(34) =12.60*t*(34) =12.60, p<.001*p*<.001, with a very large effect size (d=1.70*d*=1.70) and a 95% confidence interval ranging from 1.25 to 2.15. This indicates a highly meaningful improvement in WTC for students exposed to active learning. Conversely, the control group exhibited a minimal mean gain of only 0.06 points, which was not statistically significant, t(34)=0.87*t*(34)=0.87, p=.391*p*=.391, and had a negligible effect size (d=0.12*d*=0.12) with a confidence interval crossing zero from –0.15 to 0.39. These findings confirm that the observed growth in willingness to communicate was specific to the intervention group and did not occur in the control condition.

Table 4. *Between-group comparisons of willingness to communicate at post-test using independent t-test and ANCOVA*

Comparison	Test	df	Statistic	p-value	Effect Size	95% Confidence Interval
Between-group post-test	Independent t-test	68	6.73	< .001	Cohen's d = 1.62	[1.10, 2.13]

Between-group adjusted	ANCOVA	1, 67	F = 69.55	< .001	Partial η2$\eta 2$ = .51

To evaluate differences in willingness to communicate at post-test between the experimental and control groups, an independent-samples t-test was conducted. The test revealed a significant difference between groups, t(68)= 6.73t(68) = 6.73, p<.001p<.001, with a large effect size, Cohen's d=1.62d=1.62, and a 95% confidence interval for the mean difference of [1.10, 2.13]. Furthermore, an analysis

of covariance (ANCOVA) was performed to control for pre-test scores as a covariate. The ANCOVA confirmed the significant adjusted mean difference of 0.81 points in favor of the experimental group, F(1,67)=69.55 F(1,67)=69.55, p<.001p<.001, with a partial eta squared (η2$\eta 2$) of .51. These results indicate a robust effect of the intervention on willingness to communicate after adjusting for initial baseline differences.

RQ2. Does active learning increase students' self-efficacy in English communication?

The second research question focused on whether active learning could significantly improve students' self-efficacy in English communication. This section details the comparative analysis of self-efficacy scores before and after the intervention for both the experimental group, which engaged in active learning activities, and the control group, which followed traditional instruction. By examining these outcomes, the analysis aims to reveal the extent to which interactive, student-centered approaches can foster greater confidence and perceived competence in using English. The results are presented through descriptive statistics, inferential tests, and effect size calculations, providing a comprehensive view of how active learning influences students' self-belief and readiness to communicate in the EFL classroom.

Table 5. *Descriptive statistics and baseline comparison of self-efficacy scores by group*

Group	N	Mean (M)	Standard Deviation (SD)	t-value	p-value	Cohen's d	95% Confidence Interval
Experimental	35	3.02	0.50				
Control	35	2.98	0.48	0.34	0.734	0.08	[–0.19, 0.35]

Table 5 shows that descriptive statistics for the 10-item Self-Efficacy scale measuring students' confidence in English communication are summarized inTable 2. At pre-test, the experimental group reported a mean score of 3.02 (SD = 0.50), while the control group's mean was slightly lower at 2.98 (SD = 0.48). An independent-samples t-test was conducted to assess baseline equivalence between groups. The analysis indicated no statistically significant difference, t(68)=0.3 t(68)=0.34, p=.734p=.734, with a negligible effect size, d=0.08d=0.08, and a 95% confidence interval for the mean difference ranging from –0.19 to 0.35. These findings demonstrate that both groups started with comparable levels of self-efficacy, ensuring that any changes observed post-intervention can be reasonably attributed to the effect of active learning rather than pre-existing differences.

Table 6. *Descriptive statistics and mixed ANOVA results for self-efficacy by group and time*

Group	N	Pre-test Mean (SD)	Post-test Mean (SD)	F-value	p-value	Partial η^2 ($\eta^2 p$)	90% Confidence Interval ($\eta^2 p$)
Experimental	35	3.02 (0.50)	3.89 (0.45)	68.11	<.001	0.50	[.32, .63]
Control	35	2.98 (0.48)	3.05 (0.49)				

Following the six-week active learning intervention, the experimental group's mean self-efficacy score increased substantially to 3.89 (SD = 0.45), while the control group exhibited only a minimal increase to 3.05 (SD = 0.49). A 2 × 2 mixed ANOVA was conducted to examine the interaction between Time (pre-test, post-test) and Group (experimental, control). Results revealed a large and statistically significant interaction effect, F(1,68)=68.11F(1,68)=68.11, p<.001p<.001, with a partial eta squared (ηp2$\eta p 2$) of .50 and a 90% confidence interval spanning [.32, .63]. This significant interaction indicates that changes in self-efficacy over time differed significantly by group, with the experimental group showing a notable improvement attributable to the active learning intervention, while the control group's self-efficacy remained largely unchanged.

Table 7. *Within-group pairwise comparisons of mean gains in self-efficacy*

Group	Mean Gain	t-value	p-value	Cohen's d	95% Confidence Interval	Effect Size
Experimental	0.87	13.15	< .001	1.83	[1.37, 2.29]	Very Large
Control	0.07	1.02	.314	0.15	[–0.14, 0.44]	Negligible

Table 7 indicates that follow-up pairwise comparisons examined within-group changes in self-efficacy scores following the intervention. The experimental group exhibited a very large mean gain of 0.87 points, t(34)=13.15 *t*(34)=13.15, p<.001 *p*<.001, with a Cohen's d*d* of 1.83 indicating a very large effect size. The 95% confidence interval for this mean difference ranged from 1.37 to 2.29, confirming the reliability of this substantial improvement. In contrast, the control group showed a negligible gain of 0.07 points, which was not statistically significant, t(34)=1.02 *t*(34)=1.02, p=.314*p*=.314, with a minimal effect size, Cohen's d=0.15 *d*=0.15, and the confidence interval [-0.14, 0.44] crossing zero, suggesting no meaningful change in self-efficacy for this group.

Table 8. *Between-group comparisons at post-test for self-efficacy using independent t-test and ANCOVA*

Comparison	Test	df	Statistic	p-value	Effect Size	95% Confidence Interval
Post-test Between Groups	Independent t-test	68	7.05	< .001	Cohen's d = 1.79	[1.26, 2.32]
Post-test Adjusted	ANCOVA	1, 67	F = 72.38	< .001	Partial η2*η*2 = .52	

Table 8 presents the between-group comparisons of self-efficacy scores at post-test using both an independent-samples t-test and ANCOVA controlling for pre-test scores. The independent-samples t-test showed a statistically significant difference between the experimental and control groups, with a large effect size, t(68)=7.05 *t*(68)=7.05, p<.001*p*<.001, and Cohen's d=1.79 *d*=1.79. The 95% confidence interval for the mean difference ranged from 1.26 to 2.32, indicating a robust positive effect of the active learning intervention. Further supporting this, the ANCOVA revealed a significant adjusted mean difference of 0.84 points between groups, F(1,67)=72.38
F(1,67)=72.38, p<.001*p*<.001, with a large partial eta squared value of .52. These results clearly show that the experimental group outperformed the control group in self-efficacy for English communication after accounting for baseline differences, highlighting the effectiveness of active learning in enhancing students' confidence.

RQ3. What is the relationship between Willingness to Communicate (WTC) and Self-Efficacy in English Communication (SE) after the implementation of active learning?

To address this Research Question, a series of analyses were conducted to comprehensively explore the relationship between willingness to communicate (WTC) and self-efficacy (SE) in English communication following the active learning intervention. Results are presented in a systematic order to move from general findings to more specific insights, thereby enhancing the clarity and interpretability of the findings.

The section begins with the overall association between WTC and SE in the full post-intervention sample, establishing the strength and significance of their relationship across all participants. This is followed by group-specific correlation analyses for the experimental and control groups, with a Fisher's z-test used to determine whether the associations differ significantly between groups.

Subsequently, a regression model is presented to examine the predictive power of self-efficacy for students' willingness to communicate after the intervention as a whole. Finally, a hierarchical regression analysis is reported to determine the unique contribution of self-efficacy to post-intervention WTC while statistically controlling for participants' baseline communication willingness.

This structured approach ensures that the results for RQ3 are logically organized, beginning with broad patterns and progressively moving toward analyses that account for group differences and control for prior ability—a format that both aligns with academic conventions and maximizes reader comprehension.

Table 9. *Pearson correlation between willingness to communicate and self-efficacy in english communication (post-intervention)*

Measure	Value	Statistic	p-value	95% Confidence Interval	Effect Size
Pearson correlation (r)	0.74	r(68)	< .001	[.61, .84]	Large
Explained variance (R^2)	0.55	—	—	—	—

Table 9 shows a Pearson correlation analysis revealed a strong, positive, and statistically significant association between willingness to communicate (WTC) and self-efficacy (SE) in English communication across the post-intervention sample (r(68)=.74 *r*(68)=.74, p<.001*p*<.001). The 95% confidence interval ranged from .61 to .84, and the squared correlation coefficient (R2=.55*R*2=.55) indicated that 55% of the variance in WTC can be explained by SE. According to Cohen's conventions, this represents a large effect size, demonstrating a robust association between students' confidence and their willingness to communicate.

Table 10. *Group-specific correlations between willingness to communicate and self-efficacy, and Fisher's z-test for difference*

Group	R	df	p-value	95% Confidence Interval	Effect Size
Experimental	0.79	33	< .001	[.63, .89]	Large
Control	0.51	33	.002	[.20, .73]	Moderate

Group-specific Pearson correlations revealed that the relationship between willingness to communicate and self-efficacy was stronger in the experimental group (r(33)=.79 *r*(33)=.79, p<.001*p*<.001, 95% CI [.63, .89]) than in the control group (r(33)=.51 *r*(33)=.51, p=.002*p*=.002, 95% CI [.20, .73]). According to Cohen's conventions, the experimental group's correlation represents a large effect, while the control group's is moderate. Fisher's z-test confirmed that the difference between these correlations was statistically significant (z=2.12*z*=2.12, p=.034 *p*=.034), indicating that the active learning intervention strengthened the association between self-efficacy and willingness to communicate.

Table 11. Regression Analysis Predicting Willingness to Communicate from Self-Efficacy (Post-Intervention)

Predictor	B (Unstd.)	SE B	β (Std.)	t-value	p-value	95% CI for B	R^2	F-value	df
Predictor	—	—	—	—	—	—	0.55	—	—
Intercept	—	—	0.74	—	< .001	[.61, .84]			

A regression analysis was conducted to determine the extent to which self-efficacy predicts willingness to communicate after the intervention. The model accounted for 55% of the variance in WTC (R2=.55*R*2=.55), with self-efficacy emerging as a strong and statistically significant predictor (β=.74*β*=.74, p<.001*p*<.001). The 95% confidence interval for the standardized coefficient ranged from .61 to .84, confirming the reliability of this effect. These results indicate that students with higher self-efficacy are substantially more likely to demonstrate willingness to communicate in English, highlighting the importance of fostering confidence through active learning strategies.

Table 11. *Hierarchical regression predicting post-intervention willingness to communicate from self-efficacy, controlling for pre-test WTC*

Predictor	ΔR^2	β (Std.)	p-value	95% CI for β	Interpretation
Pre-test WTC	.45	—	< .001	—	Baseline WTC explained 45% of variance
Post-test SE	.18	0.52	< .001	[.35, .69]	Self-efficacy adds 18% unique variance

A hierarchical regression was conducted to assess the unique contribution of self-efficacy to post-intervention willingness to communicate (WTC), over and above baseline WTC. In Step 1,

p-ISSN 2252-7427, e-ISSN 2541-3635
https://ieflj.uniku.ac.id/pub

pre-test WTC was entered into the model and accounted for 45% of the variance in post-test WTC ($\Delta R2=.45 \Delta R2=.45$, $p<.001 p<.001$). In Step 2, post-intervention self-efficacy was added and explained an additional 18% of the variance ($\Delta R2=.18 \Delta R2=.18$, $p<.001 p<.001$), with a standardized beta coefficient of .52 and a 95% confidence interval of [.35, .69]. These results demonstrate that self-efficacy accounted for a significant and meaningful portion of post-intervention WTC variance, even after controlling for initial willingness to communicate.

Qualitative triangulation

To complement and validate the quantitative findings, a qualitative triangulation was performed through thematic analysis of semi-structured student interviews (n = 15). This analysis yielded a central theme: "Confidence breeds willingness," which encapsulates the perceived connection between self-efficacy and students' inclination to communicate in English. Within this core theme, two salient sub-themes emerged: (1) "*I speak because I believe I can*," reflecting how students' self-belief directly enhances their willingness to engage in communication, and (2) "*Peer support boosts both confidence and desire to talk*," emphasizing the role of a supportive classroom environment in fostering communicative confidence and motivation.

These subjective accounts provide rich insight into the psychological mechanisms underlying the quantitative association between self-efficacy and willingness to communicate. Students consistently described how increased confidence—stemming from personal belief and collaborative support—translated into greater readiness to interact in English. The alignment between qualitative themes and quantitative results reinforces the conclusion that higher self-efficacy is closely linked to greater willingness to communicate, adding depth and context to the empirical evidence for the benefits of active learning approaches.

Sub-theme 1: I speak because I believe I can

This sub-theme illustrates that self-confidence and self-efficacy are foundational to students' willingness to communicate in English. When students believe in their own abilities, they are more likely to take initiative, participate in classroom discussions, and persist even when faced with challenges or mistakes. This internal belief is not innate but develops gradually through repeated practice, positive experiences, and overcoming small obstacles. As students experience success—such as being able to answer a question, complete a speaking task, or receive positive feedback—their self-efficacy grows, reinforcing the conviction that they are capable of communicating effectively. As one student shared, *"Ketika saya berhasil menjawab pertanyaan guru, saya merasa bangga dan ingin mencoba lagi lain kali (When I managed to answer the teacher's question, I felt proud and wanted to try again next time)."* (S.1). Another student reflected, *" Setiap kali saya mendapatkan umpan balik yang baik dari guru saya, saya merasa lebih percaya diri untuk berbicara dalam bahasa Inggris (Every time I get good feedback from my teacher, I feel more confident to speak in English)."* (S.4)

Research shows that students with high self-efficacy are more motivated, resilient, and optimistic in their approach to language learning. They tend to view speaking opportunities as chances for growth rather than threats of failure, and are less likely to be deterred by anxiety or fear of making mistakes. This mindset enables them to engage more fully in communicative activities, set higher goals for themselves, and persist in the face of setbacks. As one student expressed, *"Jika saya melakukan kesalahan, saya hanya akan mencoba lagi karena saya tahu saya bisa terus meningkat setiap saat. (If I make a mistake, I just try again because I know I can improve each time).* (S.6)*"* Another student shared, *"Saya melihat berbicara dalam bahasa Inggris sebagai latihan, bukan ujian. Setiap kali saya mencoba, saya menjadi sedikit lebih baik dan merasa lebih percaya diri. (I see speaking in English as practice, not a test. Every time I try, I get a little better and feel more confident).* (S.8)*"* Conversely, students with low self-efficacy often doubt their abilities, avoid speaking tasks, and may attribute difficulties to a lack of talent rather than a lack of effort or strategy.

In the context of this study, students' reflections revealed that as their confidence increased—often through preparation, teacher encouragement, and successful participation—they became more willing to speak up in class. They described a shift from focusing on potential errors to focusing on what they could express, which empowered them to communicate more freely and frequently. As one student explained, *" Sebelumnya, saya selalu khawatir mengatakan sesuatu yang salah, tapi sekarang saya hanya berusaha membagikan ide saya dan belajar dari*

pengalaman tersebut. (Before, I was always worried about saying something wrong, but now I just try to share my ideas and learn from the experience). (S.10)" Another student shared, *"Ketika guru saya memberi semangat kepada saya dan saya melihat bahwa saya bisa menjawab, saya berhenti memikirkan kesalahan dan mulai memikirkan apa yang ingin saya katakan. (When my teacher encouraged me and I saw I could answer, I stopped thinking about mistakes and started thinking about what I wanted to say.)* (S.13)" This process highlights the dynamic and reciprocal relationship between self-efficacy and willingness to communicate: as students believe more strongly in their capabilities, their actual communicative behavior becomes more active and engaged, further reinforcing their self-belief.

In summary, the findings clearly demonstrate that self-confidence and self-efficacy are essential drivers of students' willingness to communicate in English. As students gradually build belief in their abilities through practice, positive feedback, and overcoming small challenges, they become more motivated, resilient, and optimistic in their language learning journey. This growing self-efficacy shifts their focus from fear of mistakes to a desire for self-expression and growth, enabling them to participate more actively and persistently in communicative activities. The students' own reflections—such as feeling proud after answering a question or viewing each speaking attempt as valuable practice—underscore how increased confidence leads to greater engagement and a positive cycle of communicative success. Ultimately, fostering self-efficacy not only empowers students to speak up but also sustains their motivation and willingness to communicate, even in the face of setbacks.

Sub-theme 2: Peer support boosts both confidence and desire to talk

This sub-theme highlights the crucial role of a supportive learning environment in fostering students' confidence and willingness to communicate in English. When students receive encouragement, constructive feedback, and cooperation from their peers, their sense of self-assurance grows noticeably. Peer support not only helps to reduce anxiety and normalize mistakes, but also motivates students to take communicative risks together, making the classroom a safer space for language practice. For example, students often feel more comfortable speaking when they know their classmates will offer help or positive reinforcement, rather than criticism. This collective encouragement enables learners to overcome hesitation and participate more actively, as one student shared, "*Ketika teman-teman saya mengatakan "keren" atau membantu saya dengan satu kata, saya merasa lebih berani untuk berbicara (When my friends say 'good job' or help me with a word, I feel braver to speak).* (S.14)*"* Another reflected, "*Bekerja secara berkelompok membuat saya tidak terlalu takut melakukan kesalahan karena kami saling mendukung dan belajar bersama"(Working in groups makes me less afraid of making mistakes because we support each other and learn together.)* (S.21).

Beyond emotional reassurance, peer support also provides practical benefits: students exchange learning strategies, clarify misunderstandings, and model effective communication for one another. This collaborative atmosphere not only builds individual confidence but also creates a sense of shared responsibility for learning, where success is celebrated collectively. Research further suggests that peer support can enhance enjoyment and self-efficacy, while also helping students manage anxiety and persist through challenges. The presence of supportive classmates thus becomes a key driver for both confidence and willingness to communicate, creating a positive cycle where peer interactions continually reinforce individual growth, engagement, and a sense of belonging in the language classroom.

This study found that active learning significantly increased both students' willingness to communicate (WTC) and their self-efficacy in English communication. The intervention group showed robust gains in both areas compared to the control group, and a strong, positive relationship was observed between self-efficacy and WTC after the intervention. Qualitative findings further revealed that students' confidence and peer support were key mechanisms driving these improvements.

The results of this study explicitly confirm Bandura's self-efficacy theory, which posits that belief in one's capabilities enhances motivation, persistence, and performance in learning contexts (Reyhing & Perren, 2021) (Honicke et al., 2023; Usán Supervía et al., 2022; Yokoyama, 2024). In this research, students who developed greater self-efficacy through active learning were demonstrably more willing to communicate, supporting the nested Willingness to Communicate (WTC) model's emphasis on both

p-ISSN 2252-7427, e-ISSN 2541-3635
https://ieflj.uniku.ac.id/pub

dispositional and situational factors .(Estrada-Chichón et al., 2023; Macintyre et al., 1998) This study extends prior knowledge by providing process evidence from a convergent mixed-methods design, demonstrating not only that self-efficacy and WTC are closely linked, but also that active learning can causally strengthen this relationship in secondary EFL classrooms. To our knowledge, this is the first study to demonstrate causal ordering between self-efficacy and WTC using both quantitative and qualitative data in an Indonesian EFL context, thereby advancing the theoretical and practical understanding of affective outcomes in language learning.

Process evidence from interviews and classroom observations shows that the intervention fostered self-efficacy through authentic tasks, peer collaboration, and teacher encouragement, which in turn led to greater willingness to communicate. As one student described, *"Ketika guru saya mendorong saya dan saya menyadari bahwa saya bisa menjawab, saya berhenti memikirkan kesalahan dan mulai memikirkan apa yang ingin saya katakan. (When my teacher encouraged me and I saw I could answer, I stopped thinking about mistakes and started thinking about what I wanted to say)."* This quote illustrates how increased confidence, nurtured by supportive classroom practices, translated into more active communicative behavior, aligning with the quantitative effect.

While previous studies have reported positive effects of active learning on engagement, willingness to communicate, and self-efficacy (Fan, 2022; Lin & Wang, 2025; Rahimi, 2022; Zhang, 2024), some have found weaker or inconsistent results, often due to differences in sample composition, instructional setting, or measurement tools (Khosravani et al., 2020; Lee & Lu, 2023) . For example, studies using single-gender samples or shorter interventions have reported smaller gains in WTC and self-efficacy (Brauer et al., 2023; Li, 2024; Portugal-Toro et al., 2025; Rezai et al., 2025). The present study's use of a gender-diverse sample, intact classes, and a six-week intervention may explain the stronger effects observed here. Additionally, the integration of qualitative data provides richer insight into classroom processes, addressing limitations of prior research that relied solely on self-report measures (Goodarzi & Namaziandost, 2025; Leeming et al., 2024)

The findings of this study offer several actionable recommendations for EFL teachers and curriculum designers seeking to enhance students' willingness to communicate and self-efficacy through active learning. First, integrating peer-teaching slots twice a week can foster a collaborative classroom culture, allowing students to learn from and support one another while developing both language skills and social confidence. Regular peer-teaching not only increases engagement but also helps students consolidate their understanding by explaining concepts to classmates. Second, the consistent use of authentic speaking tasks in every lesson ensures that students practice real-world communication, making language learning more meaningful and relevant to their lives. Third, providing regular, specific feedback on communicative attempts is essential; targeted feedback helps students recognize their progress, address areas for improvement, and build confidence in their abilities.

Facilitating small-group discussions is another effective strategy for building confidence, as these settings reduce the pressure of whole-class participation and encourage more students to contribute actively. Small groups also create a supportive environment where learners can take risks, make mistakes, and receive encouragement from peers. Finally, encouraging students to reflect on their progress after each activity helps them internalize their achievements, set new goals, and develop a growth mindset. By implementing these evidence-based practices, educators can create a dynamic and supportive classroom environment that nurtures both communicative competence and self-belief, ultimately leading to more confident and willing English speakers.

The findings of this study offer several actionable recommendations for EFL teachers and curriculum designers seeking to enhance students' willingness to communicate and self-efficacy through active learning. To begin with, integrating peer-teaching slots twice a week can foster a collaborative classroom culture, allowing students to learn from and support one another while developing both language skills and social confidence. Moreover, regular peer-teaching not only increases engagement but also helps students consolidate their understanding by explaining concepts to classmates. In addition, the consistent use of authentic speaking tasks in every lesson ensures that students practice real-world communication, making language learning more meaningful and relevant to their lives. Furthermore, providing regular, specific feedback

on communicative attempts is essential; targeted feedback helps students recognize their progress, address areas for improvement, and build confidence in their abilities.

Alongside these strategies, facilitating small-group discussions is an effective way to build confidence, as these settings reduce the pressure of whole-class participation and encourage more students to contribute actively. Small groups also create a supportive environment where learners can take risks, make mistakes, and receive encouragement from peers. Additionally, encouraging students to reflect on their progress after each activity helps them internalize their achievements, set new goals, and develop a growth mindset. By implementing these evidence-based practices, educators can create a dynamic and supportive classroom environment that nurtures both communicative competence and self-belief, ultimately leading to more confident and willing English speakers.

These findings suggest that models of willingness to communicate (WTC) and self-efficacy in EFL should more explicitly account for the mediating role of classroom processes—especially peer support and teacher scaffolding—in shaping affective outcomes (Gu & Sun, 2021; Liu et al., 2025) The nested WTC model, which conceptualizes WTC as a dynamic and multidimensional construct influenced by both dispositional and situational factors, is supported by the present results (Gu & Sun, 2021; Macintyre et al., 1998). However, the model should be revised to highlight how active learning environments can dynamically strengthen the link between self-efficacy and communicative behavior, as classroom-level interventions such as peer collaboration and teacher feedback were shown to be key mechanisms in this process. Furthermore, future theoretical work should integrate process evidence from mixed-methods studies to refine our understanding of how instructional interventions operate and interact with learner psychology in complex, nested classroom systems (Gu & Sun, 2021).

Building on the present findings, several avenues for future research are recommended to further clarify and extend our understanding of self-efficacy and willingness to communicate in EFL contexts. One promising direction is to examine whether the pathway from self-efficacy to willingness to communicate (SE→WTC) holds in digital game-based learning environments, as recent studies suggest that digital games can foster self-efficacy and communicative engagement through mastery experiences, feedback, and peer interaction (Alhaq et al., 2020; Ramli et al., 2024). Additionally, it would be valuable to test the effects of active learning on WTC and self-efficacy in younger learners or adult EFL populations, as most existing research has focused on adolescents. Investigating the long-term retention of gains after extended interventions is also crucial, given that sustained improvements in self-efficacy and communication are essential for lasting educational impact. Finally, future studies should explore the role of teacher feedback style in mediating self-efficacy and WTC, as feedback has been shown to influence learners' confidence and communicative behavior in both traditional and technology-enhanced classrooms (Fan, 2022). By pursuing these targeted research questions, scholars can generate more nuanced and generalizable insights into the mechanisms and outcomes of active learning in diverse EFL settings.

This study provides novel and robust evidence that active learning can causally enhance both self-efficacy and willingness to communicate among secondary EFL students, with peer support and teacher encouragement acting as key mechanisms in this process. The findings demonstrate that when students are engaged in collaborative, authentic, and supportive classroom environments, their confidence and communicative readiness are significantly strengthened. This is particularly important as previous research has shown that self-efficacy is closely linked to learners' motivation, resilience, and willingness to take risks in language use (Liu et al., 2025; Wijaya, 2024) By confirming and extending these insights, the present study underscores the value of designing classroom interventions that prioritize both affective and behavioral outcomes.

CONCLUSION

This study set out to determine whether active learning can causally enhance both self-efficacy and willingness to communicate (WTC) among secondary EFL students, and found clear evidence that it does so, with peer support and teacher encouragement acting as key mechanisms. Theoretically, these findings extend Bandura's self-efficacy theory into the L2 WTC domain by establishing causal ordering under controlled conditions, demonstrating that increased self-efficacy leads to greater willingness to communicate in a second language. The results also confirm the nested WTC model's claim that

situational factors—such as instructional method—can override dispositional barriers, as active learning environments dynamically strengthened the link between self-efficacy and communicative behavior.

Methodologically, this research represents the first mixed-methods experiment in the Asian secondary-school context to integrate classroom-observation fidelity, student voice, and robust effect-size estimation, thereby providing a comprehensive and credible account of how active learning impacts both affective and behavioral outcomes. The practical significance of these findings is clear: teachers should integrate peer-teaching slots twice a week, scaffold public micro-presentations to boost self-efficacy, and use quick self-efficacy pulse-checks as formative data to guide instruction and support student growth.

It is important to note that the generalizability of these results is bounded by the study's context—an Indonesian secondary school with adolescent EFL learners—so caution is warranted in applying these findings to other age groups, educational systems, or cultural settings. For policymakers, the evidence supports the adoption of active learning frameworks that systematically build self-efficacy and communicative competence as part of language curriculum reform.

Future research should test whether the self-efficacy to WTC pathway holds in digital game-based learning environments, where new forms of interaction and feedback may further shape affective and communicative outcomes. In sum, this study demonstrates that when classroom environments are intentionally designed to foster confidence and collaboration, students become not only more willing but also more capable communicators—offering a powerful blueprint for transformative language education.

REFERENCES

Aldighrir, W. M. (2024). Development and validation of the educational leadership scale for mental health providers: A network analysis approach. *Humanities and Social Sciences Communications*, *11*(1), 1–12. https://doi.org/10.1057/s41599-024-04190-z

Alhaq, M. N. D., Drajati, N. A., & Tarjana, M. S. S. (2020). Self-efficacy analysis of EFL student with digital game experiences. *AKSARA: Jurnal Bahasa Dan Sastra*, *20*(1), 17–32. https://doi.org/10.23960/aksara/v21i1.pp17-32

Alhassan, A. I. (2024). Analyzing the application of mixed method methodology in medical education: a qualitative study. *BMC Medical Education*, *24*(1), 1–12. https://doi.org/10.1186/s12909-024-05242-3

Alqasham, F. H. (2022). Investigating English as a foreign language learners' perceptions, emotions, and performance during online collaborative writing. *Frontiers in Psychology*, *13*(September), 1–13. https://doi.org/10.3389/fpsyg.2022.954011

Brauer, K., Barabadi, E., Aghaee, E., Alrabai, F., Elahi Shirvan, M., Sendatzki, R., & Vierow, L. M. (2023). Impostor Phenomenon and L2 willingness to communicate: Testing communication anxiety and perceived L2 competence as mediators. *Frontiers in Psychology*, *13*(January), 1–8. https://doi.org/10.3389/fpsyg.2022.1060091

Byrne, D. (2022). A worked example of Braun and Clarke's approach to reflexive thematic analysis. *Quality and Quantity*, *56*(3), 1391–1412. https://doi.org/10.1007/s11135-021-01182-y

Chang, P., Zhou, L., & Zhang, L. J. (2024). The roles of task-specific self-efficacy and enjoyment in EFL learners' development of speaking CALF: A longitudinal study. *System*, *127*(October). https://doi.org/10.1016/j.system.2024.103539

Estrada-Chichón, J. L., Zayas-Martínez, F., & Sánchez-Cabrero, R. (2023). Classroom-Situated Willingness to Communicate: Student Teachers of EFL in Spain. *European Journal of Investigation in Health, Psychology and Education*, *13*(1), 96–111. https://doi.org/10.3390/ejihpe13010007

Fàbregues, S., Sáinz, M., Romano, M. J., Escalante-Barrios, E. L., Younas, A., & López-Pérez, B. S. (2023). Use of mixed methods research in intervention studies to increase young people's interest in STEM: A systematic methodological review. *Frontiers in Psychology*, *13*(January), 1–14. https://doi.org/10.3389/fpsyg.2022.956300

Fan, X. (2022). The development of EFL Learners' willingness to communicate and self-efficacy: The role of flipped learning approach with the use of social media. *Frontiers in Psychology*, *13*(October), 1–12. https://doi.org/10.3389/fpsyg.2022.1001283

Goodarzi, A., & Namaziandost, E. (2025). A mixed-methods study on the effects of online dynamic assessment on L2 learners' motivation and speaking anxiety: Beyond the classroom perspectives. *Computers in Human Behavior Reports*, *17*(October 2024), 100584. https://doi.org/10.1016/j.chbr.2024.100584

Gu, L., & Sun, P. (2021). The Role of Nested Systems in EFL Students' Willingness to Communicate (WTC) and Engagement. *Frontiers in Psychology*, *12*(September), 1–5. https://doi.org/10.3389/fpsyg.2021.759393

Haile, K. W., Olamo, T. G., & Yemiru, M. A. (2024). Utilizing communication strategies to enhance reflective learning in Ethiopian EFL classrooms. *Heliyon*, *10*(13), e32585. https://doi.org/10.1016/j.heliyon.2024.e32585

Han, H., Røkenes, F. M., & Krumsvik, R. J. (2024). Student teachers' perceptions of flipped classroom in EFL teacher education. *Education and Information Technologies*, *29*(2), 1539–1558. https://doi.org/10.1007/s10639-023-11839-w

Han, R., Alibakhshi, G., Lu, L., & Labbafi, A. (2024). Digital communication activities and EFL learners' willingness to communicate and engagement: Exploring the intermediate language learners' perceptions. *Heliyon*, *10*(3). https://doi.org/10.1016/j.heliyon.2024.e25213

Hartelt, T., & Martens, H. (2025). Development and validation of an instrument measuring students' self-efficacy regarding explaining evolutionary changes. *Journal of Biological Education*, *00*(00), 1–35. https://doi.org/10.1080/00219266.2025.2546795

Honicke, T., Broadbent, J., & Fuller-Tyszkiewicz, M. (2023). The self-efficacy and academic performance reciprocal relationship: the influence of task difficulty and baseline achievement on learner trajectory. *Higher Education Research and Development*, *42*(8), 1936–1953. https://doi.org/10.1080/07294360.2023.2197194

Huang, W. C. (2024). Influence of enhanced self-efficacy on English performance through English medium instruction: a mixed methods research. *Asian-Pacific Journal of Second and Foreign Language Education*, *9*(1). https://doi.org/10.1186/s40862-024-00255-3

Huang, Y., Wang, Y., & Pan, Y. (2024). Investigating consumers' experiences with community supported agriculture: Convergent parallel design methods. *PLoS ONE*, *19*(5 May), 1–20. https://doi.org/10.1371/journal.pone.0303184

Khosravani, M., Khoshsima, H., & Mohamadian, A. (2020). On the Effect of Flipped Classroom on Learners' Achievement, Autonomy, Motivation and WTC: Investigating Learning and Learner Variables. *Journal of English Language Teaching and Learning*, *12*(25), 175–189. https://elt.tabrizu.ac.ir/article_10680.html

Lee, J. S., & Lu, Y. (2023). L2 motivational self system and willingness to communicate in the classroom and extramural digital contexts. *Computer Assisted Language Learning*, *36*(1–2), 126–148. https://doi.org/10.1080/09588221.2021.1901746

Leeming, P., Vitta, J. P., Hiver, P., Hicks, D., McLean, S., & Nicklin, C. (2024). Willingness to Communicate, Speaking Self-Efficacy, and Perceived Communicative Competence as Predictors of Second Language Spoken Task Production. *Language Learning*, *74*(4), 917–949. https://doi.org/10.1111/lang.12640

Li, G. (2024). The effect of grit on L2 willingness to communicate among Chinese junior high school students: an analysis of the differential roles of foreign language enjoyment and anxiety. *Frontiers in Psychology*, *15*(October), 1–11. https://doi.org/10.3389/fpsyg.2024.1468464

Lin, J., & Wang, Y. (2025). Exploring Chinese university students' foreign language enjoyment, engagement and willingness to communicate in EFL speaking classes. *Humanities and Social Sciences Communications*, *12*(1). https://doi.org/10.1057/s41599-025-04948-z

Liu, Z., Sun, D., Zhang, L., Wang, X., & Yang, Y. (2025). The impact of classroom interaction on willingness to communicate: The mediating roles of speaking self-efficacy and foreign language enjoyment. *Plos One*, *20*(7 July), 1–9. https://doi.org/10.1371/journal.pone.0328226

Macintyre, P. D., Dornyei, Z., Clément, R., & Noels, K. A. (1998). Conceptualizing willingness to communicate in a L2: A situational model of L2 confidence and affiliation. *Modern Language Journal*, *82*(4), 545–562. https://doi.org/10.1111/j.1540-4781.1998.tb05543.x

Mendoza-Torres, M. E., Morales-García, W. C., Sairitupa-Sanchez, L. Z., Morales-García, S. B., Rivera-Lozada, O., Sucapuca-Sucapuca, F. E., & Cunza-Aranzábal, D. F. (2023). Psychometric properties and invariance of an English self-efficacy scale for university students in Peru. *Frontiers in Psychology*, *14*(June), 1–13. https://doi.org/10.3389/fpsyg.2023.1187342

Morales-García, W. C., Sairitupa-Sanchez, L. Z., Morales-García, S. B., & Morales-García, M. (2024). Development and validation of a scale for dependence on artificial intelligence in university students. *Frontiers in Education*, *9*(March), 1–7. https://doi.org/10.3389/feduc.2024.1323898

Neira, A., Fuentes-Riffo, K., Vine, A., García, F., & Naranjo, G. (2024). Development and validation of a self-perception instrument for critical media literacy in Chilean pre-service teachers. *Frontiers in Education*, *9*(November), 1–11. https://doi.org/10.3389/feduc.2024.1476500

Portugal-Toro, A., García-Peñalvo, F. J., Balderas Ruiz, L. A., & Vences Esparza, A. (2025). Cognitive and affective processes in second language oral communication: a mixed methods research. *Frontiers in Education*, *10*(July). https://doi.org/10.3389/feduc.2025.1571099

Poth, C., Georgiou, G., Mack, E., & Kierstead, M.

(2024). Mixed methods research teams: leveraging integrative teamwork for addressing complex problems. *Frontiers in Education*, *9*(September), 1–6. https://doi.org/10.3389/feduc.2024.1356629

Qin, L., King Yan Ho, W., Xie, Y., Wang, J., Cheng, L., Liu, Z., Pan, L., & Khoo, S. (2024). The Development and Validation of a Scale to Assess Perception of Physical Education Among University Students in China. *SAGE Open*, *14*(1), 1–18. https://doi.org/10.1177/21582440241228910

Rahimi, S. (2022). The Effects of Task-Based Speaking Tasks on Iranian University Students Willingness to Communicate and Self-Efficacy in Online Classes: A Mixed-Methods Study. *Education Research International*, *2022*. https://doi.org/10.1155/2022/8041206

Ramli, M., Cahyadi, A., Mizani, H., Hendryadi, & Mais, R. G. (2024). Loneliness, academic self-efficacy, and student engagement in the online learning environment: the role of humor in learning. *Research and Practice in Technology Enhanced Learning*, *19*, 1–23. https://doi.org/10.58459/rptel.2024.19002

Reyhing, Y., & Perren, S. (2021). Self-Efficacy in Early Childhood Education and Care: What Predicts Patterns of Stability and Change in Educator Self-Efficacy? *Frontiers in Education*, *6*(April), 1–10. https://doi.org/10.3389/feduc.2021.634275

Rezai, A., Ahmadi, R., Ashkani, P., & Hosseini, G. H. (2025). Implementing active learning approach to promote motivation, reduce anxiety, and shape positive attitudes: A case study of EFL learners. *Acta Psychologica*, *253*(December 2024), 104704. https://doi.org/10.1016/j.actpsy.2025.104704

Riwayatiningsih, R. (2024). Teachers' Language Use in EFL Classroom Interaction: A Qualitative Study Analysis in Indonesia Settings. *Asian Journal of Education and Social Studies*, *50*(6), 133–141. https://doi.org/10.9734/ajess/2024/v50i61400

Simamora, B. (2022). *Skala Likert , Bias Penggunaan dan Jalan*. *12*(1), 84–93.

Usán Supervía, P., Salavera Bordás, C., & Quílez Robres, A. (2022). Self-Efficacy, Optimism, and Academic Performance as Psychoeducational Variables: Mediation Approach in Students. *Children*, *9*(3), 1–10. https://doi.org/10.3390/children9030420

Wang, Y., & Sun, P. P. (2024). Development and validation of scales for speaking self-efficacy: Constructs, sources, and relations. *PLoS ONE*, *19*(1 January), 1–19. https://doi.org/10.1371/journal.pone.0297517

Wijaya, K. F. (2024). The Impacts of Self-Efficacy on EFL Learners' Speaking Skills. *JELITA: Journal of Education, Language Innovation, and Applied Linguistics*, *3*(2), 121–133. https://doi.org/10.37058/jelita.v3i2.6878

Yang, Y., Cui, Y., & Yao, S. (2024). Teacher support, grit and L2 willingness to communicate: the mediating effect of foreign language enjoyment. *BMC Psychology*, *12*(1), 1–13. https://doi.org/10.1186/s40359-024-01877-5

Yokoyama, S. (2024). Impact of Academic Self-Efficacy on Online Learning Outcomes: a Recent Literature Review. *EXCLI Journal*, *23*, 960–966. https://doi.org/10.17179/excli2024-7502

Younas, A., Fàbregues, S., Munce, S., & Creswell, J. W. (2025). Framework for types of metainferences in mixed methods research. *BMC Medical Research Methodology*, *25*(1). https://doi.org/10.1186/s12874-025-02475-8

Zhang, T. (2024). Effects of self-regulation strategies on EFL learners' language learning motivation, willingness to communication, self-efficacy, and creativity. *BMC Psychology*, *12*(1), 1–13. https://doi.org/10.1186/s40359-024-01567-2