



PROJECT-BASED LEARNING IN SECONDARY LANGUAGE CLASSROOMS: IMPROVING STUDENTS' SPEAKING SKILLS THROUGH COLLABORATIVE ORAL PROJECTS

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Abstract

Speaking remains one of the most challenging skills for secondary school students learning English as a foreign language because it requires fluency, accuracy, pronunciation, vocabulary control, confidence, and interactional competence. Conventional speaking instruction often relies on dialogue memorization, teacher-led questioning, and short oral drills, which provide limited opportunities for authentic communication. This study aims to examine the effectiveness of project-based learning in improving students' speaking skills in secondary language classrooms and to explore students' learning experiences during project implementation. The study employed a mixed-method design using a quasi-experimental pretest-posttest control group design supported by classroom observations, interviews, and reflective journals. The participants were 70 Grade IX students divided into an experimental group and a control group. The experimental group learned speaking through project-based activities involving topic selection, group investigation, script development, rehearsal, oral presentation, peer feedback, and reflection. The control group received conventional speaking instruction. Quantitative data were collected through speaking performance tests and analyzed using descriptive statistics, paired-sample t-tests, independent-sample t-

tests, and effect size analysis. Qualitative data were analyzed thematically. The findings showed that the experimental group achieved significantly higher speaking improvement than the control group. Students' fluency, vocabulary use, interaction, and confidence improved through repeated practice, collaborative preparation, authentic project tasks, and peer-supported feedback. The study concludes that project-based learning can improve secondary students' speaking skills when projects are structured, language-focused, collaborative, and supported by clear assessment criteria.

Keywords: project-based learning; speaking skills; secondary students; EFL; oral communication

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A. Introduction

Speaking is central in language education because it enables students to express ideas, negotiate meaning, and use language for real communication. It is often seen as a visible indicator of communicative competence, yet remains one of the most difficult skills for secondary students since it requires processing ideas and language forms simultaneously under real-time pressure.

Several factors contribute to this difficulty: limited exposure to English outside class, limited vocabulary and grammatical control, and anxiety, fear of mistakes, and low confidence. MacIntyre, Dörnyei, Clément, and Noels (1998) emphasized that willingness to communicate is shaped by confidence, affiliation, and situational factors, meaning instruction must address both linguistic and affective dimensions.

In many classrooms, speaking activities remain dominated by controlled drills, memorized dialogues, and teacher-led question-answer sessions, which do not always provide authentic communication opportunities. Speaking instruction should let students plan ideas, interact with peers, rehearse, receive feedback,

and reflect. Goh (2017) argues speaking performance improves when learning is scaffolded through planning, monitoring, and feedback.

Project-based learning is a student-centered model where learners investigate topics, solve problems, create products, present outcomes, and reflect. Blumenfeld, Soloway, Marx, Krajcik, Guzdial, and Palincsar (1991) described it as sustaining learning through meaningful problems, artifacts, collaboration, and scaffolding; Kokotsaki, Menzies, and Wiggins (2016) note it is characterized by autonomy, investigation, collaboration, and reflection.

In language education, it can integrate language, content, and meaningful communication. Beckett and Slater (2005) proposed a project framework showing how language, content, and skills develop simultaneously; Stoller (2006) positioned it as powerful in L2 contexts for encouraging meaningful use, autonomy, and collaboration—providing repeated oral production opportunities through planning, discussion, rehearsal, presentation, and reflection.

Project-based speaking instruction aligns with communicative language teaching by placing language use in purposeful contexts: students speak to complete a project or present findings rather than answer isolated questions, supporting fluency, interaction, and confidence. Pica (2005) and Tavakoli and Foster (2011) show task design and negotiation of meaning shape oral performance, indicating speaking tasks need to be meaningful and interactionally rich.

Prior studies report positive effects: Beckett (2002) found project work supports language socialization; Fragoulis (2009) described its practical contribution to EFL instruction; Vaca Torres and Gómez Rodríguez (2017) found it increased EFL learners' oral production; Sirisrimangkorn (2021) found presentation-based projects improved speaking; and Benlaghrissi and Ouahidi (2024) found mobile-assisted project-based learning supported speaking development.

However, effectiveness depends on design and implementation; projects focused only on producing a poster or

video without language scaffolding may not improve speaking. Project-based speaking instruction needs explicit language goals, vocabulary support, models, rehearsal, peer interaction, and analytic assessment. This study examines its role in improving secondary students' speaking, asking: (1) is there a significant difference in improvement between project-based and conventional instruction; (2) which speaking aspects improve; (3) how do students experience it; and (4) what challenges emerge?

B. Method

This study used a mixed-method design: a quasi-experimental pretest-posttest control group design to measure speaking improvement, and classroom observations, interviews, reflective journals, and document analysis to explore experiences and challenges, connecting statistical evidence with classroom interpretation (Johnson & Onwuegbuzie, 2004; Fetters, Curry, & Creswell, 2013).

Participants were 70 Grade IX students in two intact classes—an experimental group (n=35) and control group (n=35)—with comparable proficiency based on prior scores. One teacher taught both groups for consistency.

The experimental group received project-based speaking instruction for eight meetings under the theme "My Community, My Voice," involving topic selection, group planning, information gathering, script development, rehearsal, presentation, peer questioning, and reflection, with teacher support on vocabulary, expressions, pronunciation, and structure. The control group received conventional textbook-based dialogue practice, drills, and memorized role-play.

The main instrument was a speaking performance pretest/posttest using an analytic rubric covering fluency, pronunciation, grammatical accuracy, vocabulary use, and interactional competence (1-5 scale each, max 25). Inter-rater reliability was 0.86.

Qualitative data came from observations across all eight meetings, interviews with 12 students of varying performance levels,

reflective journals, and learning documents (project plans, scripts, slides, feedback sheets, teacher notes).

Quantitative data were analyzed using descriptive statistics, paired- and independent-sample t-tests, normalized gain, and Cohen's d. Qualitative data were analyzed thematically (Braun & Clarke, 2006; Nowell, Norris, White, & Moules, 2017).

Data triangulation compared observations, interviews, journals, and documents. Ethical procedures included school permission, explaining the research purpose, anonymizing identities, and ensuring participation did not affect grades.

C. Finding and Discussion

1. Finding

Findings are presented in four parts: speaking performance before/after intervention, improvement across components, students' experiences, and implementation challenges.

Students' Speaking Performance before and after Project-Based Learning

Pretest results showed similar initial ability (experimental $M = 12.31$, $SD = 2.46$ vs. control $M = 12.14$, $SD = 2.39$), with no significant difference, $t(68) = 0.29$, $p = .772$.

After eight meetings, the posttest showed a clear difference: experimental ($M = 19.74$, $SD = 2.71$) outperformed control ($M = 15.68$, $SD = 2.83$), $t(68) = 6.12$, $p < .001$, indicating project-based learning produced significantly higher speaking performance.

Table 1. Speaking Performance Scores of Experimental and Control Groups

Group	Test	N	Mean	SD	Interpretation
Experimental	Pretest	35	12.31	2.46	Low to moderate
Experimental	Posttest	35	19.74	2.71	High
Control	Pretest	35	12.14	2.39	Low to moderate
Control	Posttest	35	15.68	2.83	Moderate

Source: Processed from speaking performance test data.

Gain Scores and Statistical Comparison

The experimental group improved significantly from pretest to posttest, $t(34) = 13.42$, $p < .001$, versus a smaller improvement in the control group, $t(34) = 7.18$, $p < .001$. Mean gain was 7.43 (experimental) versus 3.54 (control); normalized gain was 0.59 (moderate-to-high) versus 0.27 (low-to-moderate); and the posttest effect size was Cohen's $d = 1.46$, a large effect.

Table 2. Gain Scores and Statistical Comparison

Indicator	Experimental Group	Control Group	Statistical Result
Mean gain	7.43	3.54	Experimental group higher
Normalized gain	0.59	0.27	Moderate-to-high vs. low-to-moderate
Posttest comparison	19.74	15.68	$t(68) = 6.12$; $p < .001$
Effect size	-	-	Cohen's $d = 1.46$; large effect

Source: Processed from pretest and posttest data.

Improvement across Speaking Skill Components

Across five rubric components, the experimental group improved most in fluency and interactional competence, followed by vocabulary use, pronunciation, and grammatical accuracy. Fluency gains stemmed from repeated speaking during project preparation—discussion, rehearsal, and peer questioning—helping students speak with fewer pauses and greater confidence.

Interactional competence improved as tasks required asking questions, clarifying ideas, and presenting findings. Vocabulary improved through topic-related words and functional expressions. Pronunciation and grammar gains were smaller, indicating project-based learning provides meaningful practice but explicit language support remains necessary, though errors did not prevent communication as students grew more confident.

Table 3. Speaking Skill Component Scores in the Experimental Group

Component	Pretest Mean	Posttest Mean	Gain	Interpretation
Fluency	2.34	4.02	1.68	Strong improvement
Pronunciation	2.48	3.71	1.23	Moderate improvement
Grammatical accuracy	2.28	3.46	1.18	Moderate improvement
Vocabulary use	2.61	3.91	1.30	Strong improvement
Interactional competence	2.60	4.08	1.48	Strong improvement

Source: Processed from analytic speaking rubric data.

Students' Experiences during Project-Based Speaking Instruction

Qualitative findings showed students experienced project-based learning as more active and meaningful, with four themes: authentic speaking purpose, collaborative preparation, repeated rehearsal, and increased confidence. Students spoke to explain projects and respond to classmates rather than only answering teacher questions, making speaking feel more purposeful.

Group work created more oral practice opportunities; the teacher encouraged English use via sentence starters and presentation expressions (e.g., "Our project is about...", "We suggest that..."). Repeated rehearsal let students prepare, revise, and receive feedback from teacher and peers before final presentation.

Table 4. Qualitative Themes on Students' Project-Based Speaking Experiences

Theme	Evidence from Classroom Practice	Pedagogical Meaning
Authentic speaking purpose	Students presented local issues, community topics, and group findings	Speaking was connected to meaningful communication
Collaborative preparation	Students planned topics,	Peer support reduced

	shared vocabulary, and prepared scripts together	anxiety and improved participation
Repeated rehearsal	Students practiced several times before final presentation	Repetition improved fluency and pronunciation
Increased confidence	Students became more willing to speak after feedback and group practice	Project stages built speaking self-confidence
Reflective awareness	Students identified strengths and weaknesses after presentation	Reflection supported speaking improvement

Source: Synthesized from interviews, classroom observations, and reflective journals.

Challenges in Implementing Project-Based Speaking Activities

Despite positive results, challenges emerged: unequal participation, where confident students dominated preparation (addressed by assigning roles such as presenter and vocabulary checker); and limited English use during discussion, as students often shifted to Indonesian for complex ideas, requiring ongoing teacher scaffolding.

Time management was also a challenge, since project stages required more time than conventional instruction, requiring careful staging. Presentation anxiety persisted for some students but decreased after rehearsal and feedback, suggesting project-based learning can reduce anxiety when it includes preparation and emotional support.

Table 5. Implementation Challenges and Teacher Responses

Challenge	Classroom Evidence	Teacher Response
Unequal participation	Some students dominated project work	Assigned group roles and individual speaking responsibility
Limited English use	Students used Indonesian during planning	Provided sentence starters and speaking expressions

Time constraints	Project stages required longer preparation	Structured timeline and task checklist
Presentation anxiety	Some students hesitated during performance	Used rehearsal, peer support, and formative feedback
Assessment complexity	Speaking and project products needed evaluation	Applied analytic speaking rubric and peer feedback

Source: Synthesized from classroom observations and teacher notes.

2. Discussion

Project-based learning significantly improved speaking skills, with the experimental group outperforming control on posttest and gain scores, supporting the argument that speaking develops through meaningful, repeated, socially supported language use—consistent with PBL literature on active learning, motivation, and collaboration (Blumenfeld et al., 1991; Barron, Schwartz, Vye, Moore, Petrosino, Zech, & Bransford, 1998; Hmelo-Silver, 2004; Kokotsaki et al., 2016).

Fluency improved most, explained by repeated oral practice across project stages—discussion, rehearsal, feedback, and presentation—which reduced hesitation and improved continuity, aligning with Segalowitz and Freed (2004) on fluency development and Skehan's (2009) view of performance as fluency-complexity-accuracy-lexis interaction.

Interactional competence also improved strongly, since projects required questioning, responding, and negotiating roles—expanding interaction beyond typical teacher-student exchanges, consistent with task-based perspectives on negotiation of meaning (Pica, 2005; Robinson, 2001; Tavakoli & Foster, 2011).

Vocabulary use improved as project tasks required topic-specific words and functional expressions related to community issues, description, and suggestion, supporting Beckett and Slater's (2005) view that project frameworks integrate language, content, and skills visibly.

Pronunciation and grammatical accuracy improved less than fluency and interaction, indicating projects promote communication but still need explicit pronunciation practice, corrective feedback, and revision, consistent with Goh's (2017) scaffolding argument.

Qualitative findings explain the improvement: authentic purpose increased motivation, and group preparation—sharing vocabulary, practicing together, encouraging one another—reduced anxiety and increased confidence, consistent with the willingness-to-communicate model (MacIntyre et al., 1998).

This aligns with broader PBL literature: Thomas (2000) positioned project-based learning around centrality, driving questions, investigation, autonomy, and realism; Bell (2010) emphasized its relevance for 21st-century skills. Here, students selected topics, investigated issues, collaborated, and reflected, creating a richer speaking environment than conventional instruction.

Nevertheless, project-based learning requires careful management: unequal participation calls for assigned roles and individual speaking responsibility; limited English use calls for language scaffolds such as sentence starters and model expressions; and time management is crucial to keep stages focused.

Assessment matters too—analytic rubrics helped evaluate fluency, pronunciation, grammar, vocabulary, and interaction; without clear criteria, assessment may over-focus on the product rather than speaking performance. Peer feedback and reflective journals complement performance assessment by building students' awareness of their own strengths and weaknesses.

For teachers, manageable projects include community issue presentations, campaign videos, tourism promotion, storytelling, interview reports, and podcast episodes, provided each includes clear speaking objectives and assessment criteria. The study confirms project-based learning improves speaking when structured around sustained oral communication, collaboration, feedback, and reflection—not simply by assigning projects.

D. Conclusion

This study examined the effectiveness of project-based learning in improving speaking skills among secondary school students. Students taught through project-based learning improved from a pretest mean of 12.31 to a posttest mean of 19.74, versus 12.14 to 15.68 for the control group, with a significant difference, $t(68) = 6.12$, $p < .001$, and a large effect size, Cohen's $d = 1.46$. Improvement occurred across all five components, with the strongest gains in fluency and interaction. Qualitative findings showed the improvement came from authentic speaking purposes, collaborative preparation, repeated rehearsal, peer support, teacher feedback, and reflective awareness, though implementation faced challenges of unequal participation, limited English use, time constraints, and presentation anxiety. Project-based learning is effective for improving speaking skills when tasks are language-focused, structured, collaborative, and supported by clear assessment. Future studies should examine longer implementation periods, different project types, and digital project-based learning.

Declaration of AI-Assisted Technologies

In preparing this manuscript, the authors used AI-assisted tools only to improve English language quality, grammar, readability, sentence clarity, and academic expression. The AI tools were not used to generate research data, conduct data analysis, produce findings, or draw conclusions. All conceptual arguments, data interpretation, methodological decisions, and scholarly conclusions remain the full responsibility of the authors. The authors carefully reviewed, edited, and verified all AI-assisted outputs to ensure the accuracy, integrity, and originality of the final manuscript.

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