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Project-Based Learning with digital tools to improve speaking skills among learners of English as a foreign language

Aprendizaje Basado en Proyectos con herramientas digitales para mejorar las habilidades de expresión oral en estudiantes de Inglés como lengua extranjera

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***Abstract*:** Developing English speaking skills requires strategies that promote practice and communicative interaction. This study aimed to analyze the impact of Project-Based Learning supported by digital tools on the development of speaking skills among learners of English as a foreign language. A quantitative, applied, and evaluative approach was adopted, using a one-group pre-experimental design with pretest and posttest assessments. The sample analyzed comprised 20 B1-level students at NOVA English Academy. The English for Change intervention consisted of six 90-minute sessions over two weeks, aimed at collaboratively developing a video campaign. Speaking skills were assessed using a six-dimensional rubric scored out of 30, while the project was evaluated separately using an instrument scored out of 10. Descriptive statistics were used to calculate frequencies, means, and differences between assessments. The results showed an increase in the mean score from 16.30 to 21.20, representing a gain of 4.90 points and a relative increase of 30.06%. Scores increased across all 20 records, and 17 (85%) moved to a higher performance category. Fluency and interaction showed the largest gains, at 0.95 points each, while coherence showed the smallest gain, at 0.55 points. The project achieved a mean score of 8.18 out of 10, with planning and collaboration emerging as strengths. Speaking scores therefore increased following the PBL intervention supported by digital tools, with the greatest gains in fluency and interaction.

Keywords: Audiovisual production, digital tools, English as a foreign language, Project-Based Learning, speaking skills.

Resumen: *La expresión oral en inglés requiere estrategias que promuevan la práctica y la interacción comunicativa. El objetivo general fue analizar el impacto del Aprendizaje Basado en Proyectos, apoyado en herramientas digitales, en el desarrollo de las habilidades de expresión oral de los estudiantes de inglés como lengua extranjera. Se empleó un enfoque cuantitativo, aplicado y evaluativo, con diseño preexperimental de un grupo y mediciones pretest y postest. La muestra analizada comprendió 20 estudiantes del nivel B1 de NOVA English Academy. La propuesta English for Change contempló seis sesiones de 90 minutos durante dos semanas, orientadas a elaborar una campaña colaborativa de videos. La expresión oral se valoró mediante una rúbrica de seis dimensiones sobre 30 puntos y el proyecto mediante un instrumento independiente sobre diez. Se aplicó estadística descriptiva para calcular frecuencias, medias y diferencias entre mediciones. Los resultados mostraron un aumento de la media de 16,30 a 21,20 puntos, equivalente a 4,90 puntos y un incremento relativo del 30,06 %. Los 20 registros aumentaron sus puntuaciones y 17 (85 %) avanzaron de categoría. Fluidez e interacción registraron los mayores incrementos, con 0,95 puntos cada una, mientras que coherencia presentó el menor, con 0,55 puntos. El proyecto alcanzó una media de 8,18/10, destacándose planificación y colaboración. Se concluye que las puntuaciones de expresión oral aumentaron tras la propuesta de ABP con herramientas digitales, con mayores avances en fluidez e interacción.*

Palabras clave*: Aprendizaje Basado en Proyectos, expresión oral, herramientas digitales, Inglés como lengua extranjera, producción audiovisual.*

1. Introduction

Project-Based Learning (PBL) is an active, constructivist approach in which students collaborate to solve real-world problems and develop a final product. It integrates different fields of knowledge, with the teacher acting as a facilitator (Flórez, 2024). Its application promotes student learning, autonomy, and motivation, while fostering cognitive, social, linguistic, and digital competencies, such as critical thinking, creativity, and communication skills (Ramírez et al., 2025). It has also shown benefits across curricular areas and among students with learning difficulties (Ruiz & Ortega-Sánchez, 2022).

Digital tools are technological resources that support and enrich teaching and learning by facilitating access to information and promoting communication, and interaction (Reyna, 2023). Tools used in education include learning management systems, communication applications, and content creation resources, which can support collaboration, independent learning, and feedback (Romo-Padilla et al., 2023).

Their implementation presents challenges related to infrastructure, connectivity, unequal access, resistance to change, and insufficient training. Therefore, effective implementation requires educational planning and investment in technology (Puyol-Cortez, 2023).

Digital tools can therefore strengthen the implementation of PBL at different educational levels. Platforms such as Google Classroom, Trello, and Microsoft Teams support the planning, coordination, and collaborative management of activities (Hurtado et al., 2025).

Al-Abdullatif and Gameil (2021) found the acceptance and appropriate use of these technologies, together with student engagement, contribute to academic performance in PBL settings. Digital tools should therefore be integrated with pedagogical guidance that promotes active participation and project development (Solís-Franco et al., 2025).

More specifically, digital tools contribute to the development of speaking skills by promoting active and meaningful student participation (Añapa et al., 2025). Their integration creates learning environments in which students can communicate their ideas and emotions with greater confidence, spontaneity, and creativity (Cifuentes et al., 2025). “Implementing PBL through playful and collaborative activities supported by technology also strengthens listening and speaking skills, demonstrating the pedagogical relevance of these strategies to the development of communication skills (Ordoñez et al., 2025).

Nevertheless, developing speaking skills remains a challenge in teaching English as a foreign language because of limited opportunities for interaction, a lack of confidence in communicating, low participation, and the prevalence of activities with little connection to real communicative situations (Ortiz, 2024).

Although PBL supported by digital tools can create authentic settings for research, collaboration, content production, and the presentation of findings in English, its integration is not always guided by pedagogical planning specifically directed toward strengthening speaking skills. In some cases, technology is used only to access or transmit information, without taking advantage of its potential to promote interaction, feedback, and oral production (Solórzano et al., 2024).

For these reasons, examining changes in the speaking skills of learners of English as a foreign language is important following a PBL intervention supported by digital tools. The B1 group at NOVA English Academy, an institution dedicated to teaching English as a foreign language, was selected because this level represents an appropriate stage for strengthening oral communication. Students

possess the linguistic resources necessary to communicate in everyday situations but still require further development of their fluency, accuracy, and ability to sustain interactions and express well-organized ideas.

The intervention provided opportunities to use English for communicative purposes through the planning, development, and presentation of collaborative digital products. Comparing the initial and final assessments allowed changes in fluency, pronunciation, vocabulary, grammatical accuracy, coherence, and interaction to be identified. The findings may inform teaching practices in the setting studied and contribute to the design of learning experiences suited to the needs of B1-level students.

The following research question is posed: To what extent does PBL using digital tools contribute to improving speaking skills among learners of English as a foreign language?

The general objective of this study was therefore to analyze the impact of PBL supported by digital tools on the development of speaking skills among learners of English as a foreign language. Specifically, the study sought to identify students' initial speaking proficiency, design project-based activities using digital tools to encourage oral production, and evaluate the impact of the strategy on the development of students' speaking skills.

2. Methodology

Research Approach

The study adopted a quantitative approach because numerical data on students' speaking proficiency were collected and analyzed. This approach enabled the measurement of participants' performance before and after the intervention, the comparison of their scores, and the identification of changes in speaking performance.

Speaking was assessed using indicators related to fluency, pronunciation, vocabulary, grammatical accuracy, coherence, and interaction. Each dimension was rated using an analytic rubric, allowing observed performance to be converted into quantifiable, comparable scores.

Type of Research

The research was an applied study, as it addressed a specific educational need related to students' difficulties in communicating orally in English. Based on the initial assessment, a PBL strategy supported by digital tools was designed and implemented.

The applied nature of the study was reflected in the use of pedagogical and technological knowledge to improve an identified situation in teaching and learning. Accordingly, the research went beyond describing speaking proficiency and incorporated an intervention aimed at strengthening this skill.

Research Scope

The study had a descriptive and evaluative scope, as it examined changes in speaking performance by comparing scores obtained before and after the pedagogical intervention using descriptive statistics. Given the pre-experimental design involving a single group without random assignment or a control group, the findings were interpreted within the educational context studied. Furthermore, the absence of a control group limited the extent to which the observed changes could be attributed to the strategy implemented.

Research Design

A one-group pre-experimental design with pretest and posttest assessments was used. In the first stage, a speaking performance assessment was administered to identify students' initial proficiency. The PBL strategy supported by digital tools was then implemented. Once the intervention had been completed, a second speaking performance assessment was administered.

The design was represented as follows:

$$\boldsymbol{G: O_1 \rightarrow X \rightarrow O_2}$$

Here, G represented the participating group; O_1, the pretest; X, the intervention based on projects and digital tools; and O_2, the posttest. Comparison of the two assessments enabled changes in speaking skills to be identified.

Research Methods

The research combined documentary review and fieldwork. The literature review provided the theoretical basis for PBL, the pedagogical use of digital tools, and the development of speaking skills in English as a foreign language.

Fieldwork enabled information to be collected directly from students in their educational context. The pretest, pedagogical intervention, observation of activities, and posttest took place in the setting where teaching and learning normally occurred.

Population and Sample

The population comprised twenty students enrolled at B1 level at NOVA English Academy, an institution dedicated to teaching English as a foreign language. The entire population was included through a census; no sample selection was therefore performed. All twenty students participated in the pretest, the PBL intervention, and the posttest.

The inclusion criteria were enrollment at B1 level, voluntary participation, provision of the required consent, completion of the pretest and posttest, attendance at a minimum of 80% of sessions, and participation in developing the communicative projects.

Students were excluded from the analysis if they failed to complete either assessment, withdrew voluntarily, attended fewer than the required proportion of sessions, or did not participate in the main intervention activities.

Study Variables

The independent variable was PBL supported by digital tools. This was understood as an active strategy through which students worked collaboratively to respond to a communicative situation, develop a digital product, and present it orally in English.

The dependent variable was the development of speaking skills. This was defined as the student's ability to communicate ideas orally in a comprehensible, fluent, organized, and appropriate manner. Fluency, pronunciation, vocabulary, grammatical accuracy, coherence, and interaction were assessed.

Assessment Method and Instruments

To assess speaking skills in English before and after the educational intervention, individual pretest and posttest assessments were administered, each with an intended duration of 6–8 minutes. Both instruments comprised three activities: a personal interview, a description of a situation, and a response to a communicative situation.

The pretest included questions about personal interests, daily activities, and technology use; a description of students working collaboratively on a school project; and a proposal for a digital campaign to promote healthy habits.

The posttest addressed experiences of collaboration, technological tools for learning, and the usefulness of English; a description of a digital project presentation; and the development of a proposal for environmental protection.

Questions and scenarios differed between the two assessments, while the overall structure, instructions, and assessment criteria remained the same. Participants were required to respond orally in English using complete sentences, without dictionaries, translators, notes, or prepared answers, although they could ask for questions to be repeated.

Pretest and Posttest Assessment Rubric

The same rubric was used in both assessments. Each dimension received a score from one to five, for a maximum total of 30 points (see Tables 1 and 2).

Table 1

Pretest and Posttest Rubric

Dimension	5: Very high	4: High	3: Medium	2: Low	1: Very low
Fluency	Spoke continuously and naturally, with few pauses	Sustained speech with some pauses that did not affect understanding	Paused frequently but managed to complete ideas	Pauses and hesitation made the message difficult to develop	Was unable to sustain continuous speech
Pronunciation	Pronounced words clearly and used appropriate intonation	Made few errors, and the message was comprehensible	Made frequent errors, although the overall meaning was understood	Errors considerably hindered understanding	Pronunciation prevented most of the message from being understood
Vocabulary	Used varied, precise, and appropriate vocabulary	Used sufficient vocabulary, with little repetition	Used basic vocabulary to express the main ideas	Used limited vocabulary with frequent repetition	Lacked the vocabulary needed to communicate ideas
Grammatical accuracy	Used different grammatical structures correctly	Made minor errors that did not affect meaning	Made frequent errors, but the overall message was comprehensible	Errors partly affected understanding	Errors prevented most of the message from being understood
Coherence	Organized and connected ideas clearly and logically	Presented a comprehensible sequence with minor difficulties	Expressed related ideas, although with limited organization	Ideas were disorganized or loosely connected	Was unable to organize a comprehensible message

Interaction	Initiated, responded to, and sustained conversation naturally	Participated actively and responded appropriately	Answered questions but needed occasional support	Gave brief answers and needed constant support	Was unable to respond or sustain interaction

Table 2

Scores by Speaking Proficiency Level

Total score	Speaking proficiency level
26-30	Very high
21-25	High
16-20	Medium
11-15	Low
6-10	Very low

Equivalence of the Assessments

The pretest and posttest assessed the same skills and maintained an equivalent structure. The only difference concerned the topics addressed (see Table 3).

Table 3

Pretest and Posttest Components

Component	Pretest	Posttest
Interview	Daily life and technology use	Collaborative work, technology, and projects
Description	Students preparing a project	Students presenting a project
Communicative situation	Campaign on healthy habits	Project on environmental protection
Duration	6–8 minutes	6–8 minutes
Dimensions	Six	Six
Maximum score	30 points	30 points
Rubric	Five-level analytic rubric	Same rubric

Validation

The assessments and rubric were reviewed by three experts in English language teaching, educational assessment, and research methodology. The experts evaluated the clarity, relevance, coherence, and sufficiency of each activity and indicator. Their feedback informed adjustments to the instructions and descriptors before final administration.

Procedure

In the first stage, institutional authorization and the required consent were obtained. The pretest was then administered, and students' oral productions were scored using the analytic rubric. The results established their initial speaking proficiency.

In the second stage, the English for Change PBL intervention was designed to strengthen the English speaking skills of twenty B1-level students through a video campaign addressing a social issue. The problem, audience, central message, responsibilities, and schedule of six 90-minute sessions over two weeks were defined. The final product comprised twenty interconnected vertical videos, each led by

one student, incorporating vocabulary, grammatical structures, and language support appropriate to B1 level.

In the third stage, the project was implemented through research, the development of a vocabulary bank, scriptwriting, storyboard design, rehearsals, and video recording and editing. Throughout the process, self-assessment, peer assessment, and teacher feedback addressed fluency, pronunciation, vocabulary, grammatical accuracy, coherence, and interaction.

The intervention concluded with the presentation of the campaign, responses to spontaneous questions, and an individual reflection in English. Dissemination of the products was planned through authorized publication or a simulation in a private setting.

The PBL activity was assessed using a specific analytic rubric comprising five criteria: planning and collaboration; fluency, pronunciation, and interaction; vocabulary, grammar, and coherence; content and social impact; and video quality and reflection. Each criterion was rated at four performance levels: excellent (2 points), good (1.5 points), developing (1 point), and beginning (0.5 points), for a maximum total score of 10 points.

The language criteria were adapted to the participants' B1 level. This assessment evaluated the work process, digital product, and oral presentation, and its score was kept separate from the pretest and posttest scores.

In the fourth stage, the posttest was administered under conditions equivalent to those of the pretest. Responses were scored using the same rubric and by the same assessors. The initial and final scores were then compared.

Statistical Analysis

The statistical analysis used descriptive statistics. Absolute frequencies and percentages were calculated to present the distribution of the twenty participants across pretest and posttest performance levels and PBL project rubric categories. Percentages were obtained by dividing the frequency in each category by the total number of participants and multiplying the result by 100.

Arithmetic means were calculated for total and dimension scores, together with percentages relative to each instrument's maximum score. The pretest and posttest were compared using absolute score differences and relative increases, calculated as [(posttest − pretest) / pretest] × 100. The results were organized into individual and group tables, keeping the PBL project assessment separate from the speaking assessments. The analysis was limited to describing observed changes, without statistical significance testing.

3. Results

Pretest Results

The initial speaking assessment showed heterogeneous performance among the 20 participants, as presented in Table 4. Scores ranged from 12 to 23 out of 30, with a mean of 16.30, equivalent to 54.33% of the maximum possible score, and a standard deviation of 2.90. Nine students (45%) were in the low category, ten (50%) in the medium category, and one (5%) in the high category. No participants were classified in either the very low or the very high performance category. This distribution showed a concentration in the low and medium categories, indicating a need to strengthen communication skills, particularly among students with lower initial scores.

Table 4

Individual Pretest Results

Student	Score /30	% of maximum	Level
E1	20	66.67	Medium
E2	14	46.67	Low
E3	23	76.67	High
E4	15	50.00	Low
E5	16	53.33	Medium
E6	19	63.33	Medium
E7	13	43.33	Low
E8	19	63.33	Medium
E9	17	56.67	Medium
E10	20	66.67	Medium
E11	14	46.67	Low
E12	18	60.00	Medium
E13	12	40.00	Low
E14	18	60.00	Medium
E15	15	50.00	Low
E16	13	43.33	Low
E17	13	43.33	Low
E18	15	50.00	Low
E19	16	53.33	Medium
E20	16	53.33	Medium
Mean	16.30	54.33	Medium

Note. Performance levels correspond to the instrument's scale: very low, 6–10; low, 11–15; medium, 16–20; high, 21–25; very high, 26–30. Percentages express the score obtained relative to the maximum possible score.

Analysis by dimension showed that grammatical accuracy had the highest initial mean, at 3.00 out of 5, followed by interaction at 2.95 out of 5. Pronunciation and coherence each scored 2.80 out of 5, while fluency scored 2.75 out of 5. Vocabulary had the lowest score, at 2.00 out of 5, equivalent to 40% of the maximum possible score. This initial profile indicated a greater need for support in vocabulary range and use, as well as continuity of speech. Although grammatical accuracy had the highest mean, its score also indicated room for improvement within the scale used (see Table 5).

Table 5

Initial Performance by Dimension

Dimension	Mean /5	% of maximum
Fluency	2.75	55.00
Pronunciation	2.80	56.00
Vocabulary	2.00	40.00
Grammatical accuracy	3.00	60.00
Coherence	2.80	56.00
Interaction	2.95	59.00

Results of PBL Implementation

The English for Change project assessment considered five criteria related to planning and collaboration, speaking performance, linguistic resources, social content, and audiovisual product quality. Each criterion was scored out of two points, for a maximum total of ten. This rubric assessed project performance as evidence complementary to the speaking assessments.

Project scores ranged from 6.00 to 9.50 out of 10, with a mean of 8.18, equivalent to 81.75% of the maximum possible score, and a standard deviation of 0.83. Sixteen participants, representing 80% of the group, scored at least eight points. E3 achieved the highest score, at 9.50 out of 10, while E2 had the lowest score, at 6.00 out of 10. The distribution showed differences in performance during project development, making it useful to examine the criteria separately to identify each participant's strengths and support needs (see table 6).

Table 6

Individual PBL Project Rubric Results

ID	C1	C2	C3	C4	C5	Total /10
E1	2.00	1.50	1.50	1.50	1.50	8.00
E2	1.00	1.50	1.50	1.00	1.00	6.00
E3	2.00	2.00	1.50	2.00	2.00	9.50
E4	2.00	1.50	1.50	1.50	2.00	8.50
E5	2.00	1.50	1.50	2.00	2.00	9.00
E6	2.00	1.50	1.00	1.00	1.50	7.00
E7	1.50	2.00	1.50	2.00	1.50	8.50
E8	2.00	1.00	2.00	2.00	1.50	8.50
E9	2.00	2.00	2.00	2.00	1.00	9.00
E10	1.50	1.50	1.50	1.50	1.50	7.50
E11	1.50	1.00	2.00	1.00	1.50	7.00
E12	1.50	1.50	2.00	2.00	1.50	8.50
E13	1.50	1.50	2.00	1.50	1.50	8.00
E14	2.00	1.50	1.50	2.00	2.00	9.00
E15	1.50	2.00	2.00	1.50	2.00	9.00
E16	1.50	2.00	2.00	1.50	1.00	8.00
E17	1.50	1.50	2.00	1.50	1.50	8.00
E18	2.00	1.00	1.50	2.00	2.00	8.50
E19	2.00	2.00	1.50	1.00	1.50	8.00
E20	1.50	1.50	1.50	2.00	1.50	8.00

Note. C1 = planning and collaboration; C2 = fluency, pronunciation, and interaction; C3 = vocabulary, grammar, and coherence; C4 = content and social impact; C5 = video quality and reflection. Each criterion was scored out of two points.

Planning and collaboration was the highest-rated criterion, with a mean of 1.73 out of 2, equivalent to 86.25% of the maximum possible score. Ten students (50%) were rated excellent, nine (45%) good, and one (5%) developing. For vocabulary, grammar, and coherence, the mean was 1.68 out of 2: eight participants (40%) were rated excellent, eleven (55%) good, and one (5%) developing (see Table 7).

Table 7

Group Performance by PBL Project Criterion

Criterion	Mean /2	% of maximum	Excellent n (%)	Good n (%)	Developing n (%)
Planning and collaboration	1.73	86.25	10 (50.00%)	9 (45.00%)	1 (5.00%)
Fluency, pronunciation, and interaction	1.58	78.75	6 (30.00%)	11 (55.00%)	3 (15.00%)
Vocabulary, grammar, and coherence	1.68	83.75	8 (40.00%)	11 (55.00%)	1 (5.00%)
Content and social impact	1.63	81.25	9 (45.00%)	7 (35.00%)	4 (20.00%)
Video quality and reflection	1.58	78.75	6 (30.00%)	11 (55.00%)	3 (15.00%)

Note. Excellent = 2 points; good = 1.5; developing = 1; beginning = 0.5. No participant was rated at the beginning level.

Performance varied among participants in the criteria of content and social impact and video quality and reflection. In each criterion, one student was rated as developing. These ratings indicate areas requiring further support in substantiating the message, audiovisual production, and reflection on learning. The "content and social impact" criterion reflects the assessment of the message and proposed actions; it does not measure the campaign's actual effect on its audience.

Posttest Results

The final assessment yielded scores ranging from 14 to 28 out of 30, with a mean of 21.20, equivalent to 70.67% of the maximum possible score, and a standard deviation of 3.29. Ten students (50%) were in the high category, eight (40%) in the medium category, one (5%) in the very high category, and one (5%) in the low category. No participant was in the very low category. E3 achieved the highest final score, at 28 out of 30 (see Table 8).

Table 8

Individual Posttest Results

Student	Score /30	% of maximum	Level
E1	24	80.00	High
E2	20	66.67	Medium
E3	28	93.33	Very high
E4	20	66.67	Medium
E5	20	66.67	Medium
E6	25	83.33	High
E7	16	53.33	Medium
E8	23	76.67	High
E9	24	80.00	High
E10	24	80.00	High
E11	18	60.00	Medium
E12	23	76.67	High

E13	14	46.67	Low
E14	23	76.67	High
E15	21	70.00	High
E16	18	60.00	Medium
E17	19	63.33	Medium
E18	22	73.33	High
E19	22	73.33	High
E20	20	66.67	Medium
Mean	21.20	70.67	High

Among the assessed dimensions, interaction had the highest final mean score of 3.90 out of 5, followed by grammatical accuracy, with a mean score of 3.85 out of 5. Fluency scored 3.70 out of 5 and pronunciation 3.55 out of 5, while coherence scored 3.35 out of 5. Vocabulary had the lowest final mean, at 2.85 out of 5, equivalent to 57% of the maximum possible score. This profile showed stronger performance in communicative participation and the use of grammatical structures, while also indicating that expanding lexical resources and organizing speech remained areas for improvement (see Table 9).

Table 9

Final Performance by Dimension

Dimension	Mean /5	% of maximum
Fluency	3.70	74.00
Pronunciation	3.55	71.00
Vocabulary	2.85	57.00
Grammatical accuracy	3.85	77.00
Coherence	3.35	67.00
Interaction	3.90	78.00

Pretest–Posttest Comparison

Pretest–posttest scores increased for all 20 participants. Seventeen students (85%) moved to a higher performance category, while three (15%) increased their scores without changing categories. The group mean rose from 16.30 to 21.20 out of 30, a difference of 4.90 points and a relative increase of 30.06%. Expressed relative to the maximum test score, the mean increased from 54.33% to 70.67%, representing a difference of 16.33 percentage points. These indicators show the magnitude of change across the group and complement the individual results in Table 10.

Table 10

Individual Changes Between the Two Assessments

ID	Pretest /30	Posttest /30	Difference	Increase%	Change in level
E1	20	24	4	20.00	Medium → High
E2	14	20	6	42.86	Low → Medium
E3	23	28	5	21.74	High → Very high
E4	15	20	5	33.33	Low → Medium
E5	16	20	4	25.00	Medium → Medium

E6	19	25	6	31.58	Medium → High
E7	13	16	3	23.08	Low → Medium
E8	19	23	4	21.05	Medium → High
E9	17	24	7	41.18	Medium → High
E10	20	24	4	20.00	Medium → High
E11	14	18	4	28.57	Low → Medium
E12	18	23	5	27.78	Medium → High
E13	12	14	2	16.67	Low → Low
E14	18	23	5	27.78	Medium → High
E15	15	21	6	40.00	Low → High
E16	13	18	5	38.46	Low → Medium
E17	13	19	6	46.15	Low → Medium
E18	15	22	7	46.67	Low → High
E19	16	22	6	37.50	Medium → High
E20	16	20	4	25.00	Medium → Medium
Mean	16.30	21.20	4.90	30.06	Medium → High

Note. Relative increase = [(posttest − pretest) / pretest] × 100. The percentage reported for the mean represents the change in the group mean.

The largest gains across dimensions were observed in fluency and interaction, each increasing by 0.95 points. Vocabulary and grammatical accuracy increased by 0.85 points, while pronunciation showed a difference of 0.75 points. Coherence had the smallest gain, at 0.55 points, rising from 2.80 to 3.35 out of 5 (see Table 11).

Table 11

Comparison of Means by Dimension

Dimension	Pretest /5	Posttest /5	Difference
Fluency	2.75	3.70	0.95
Pronunciation	2.80	3.55	0.75
Vocabulary	2.00	2.85	0.85
Grammatical accuracy	3.00	3.85	0.85
Coherence	2.80	3.35	0.55
Interaction	2.95	3.90	0.95

4. Discussion

The pretest–posttest comparison showed an increase in speaking scores across the 20 B1-level records. The mean rose from 16.30 to 21.20 out of 30, a difference of 4.90 points and a relative increase of 30.06%. All 20 participants increased their scores, although only 17 (85%) moved to a higher performance category. This pattern can be discussed within the pedagogical framework of Flórez (2024) as well as Ruiz and Ortega-Sánchez (2022), who emphasize active participation and the application of knowledge in PBL. The comparison describes a favorable trend but does not allow it to be attributed exclusively to the strategy.

The pretest showed that vocabulary was the group's main area of need, with a mean of 2.00 out of 5, followed by fluency at 2.75 out of 5. In addition, 45% of participants were in the low category and 50% in the medium category, meaning that initial performance was concentrated in categories requiring support. This initial profile highlights the relationship between the intervention design and

the oral communication difficulties discussed by Ortiz (2024). The vocabulary bank, language support, and rehearsals can therefore be regarded as relevant components for addressing specific needs, rather than assuming that all dimensions required the same type of intervention.

Fluency and interaction showed the largest gains, at 0.95 points each. Fluency rose from 2.75 to 3.70 out of 5, while interaction increased from 2.95 to 3.90 out of 5 and achieved the highest final mean. Pedagogically, these components relate to the sustained practice, peer exchanges, and responses to spontaneous questions included in English for Change. Cifuentes et al. (2025) provide a reference point for the use of podcasts and mini vlogs to develop oral production. The similarity lies in the use of audiovisual resources for communicative purposes; it does not establish equivalence between the study designs or the magnitude of their results.

Vocabulary and grammatical accuracy each increased by 0.85 points: vocabulary rose from 2.00 to 2.85 out of 5, and grammatical accuracy from 3.00 to 3.85 out of 5. However, vocabulary retained the lowest final mean, showing that a score increase does not mean that an initial need has been resolved. Romo-Padilla et al. (2023) and Reyna (2023) provide background on the potential of digital tools in learning. In the intervention, searching for information, selecting expressions, and developing scripts linked these resources to specific language tasks. The final profile suggests maintaining vocabulary work and encouraging its use in less rehearsed situations.

Pronunciation increased from 2.80 to 3.55 out of 5, a difference of 0.75 points, while coherence rose from 2.80 to 3.35 out of 5 and showed the smallest gain, at 0.55 points. Overall improvement was therefore accompanied by gains of different magnitudes and should not be interpreted as uniform development of speaking skills. Although scriptwriting and message revision formed part of the intervention, discourse organization remained an area for improvement. In instructional planning, These findings support the incorporation of more targeted activities focused on sequencing ideas, using linking expressions, and developing coherent messages, without assuming that video production alone addresses every skill.

The project assessment yielded a mean of 8.18 out of 10, equivalent to 81.75% of the maximum possible score before rounding, and 16 participants (80%) scored at least eight points. Planning and collaboration was the highest-rated criterion, with a mean of 1.73 out of 2; ten students (50%) were rated excellent, nine (45%) good, and one (5%) developing. Hurtado et al. (2025) along with Al-Abdullatif and Gameil (2021) provide reference points for examining work organization and technology integration in PBL. Ramírez et al. (2025) and Ordoñez et al. (2025) also help contextualize its participatory dimension, although their settings are not directly equivalent to learning English speaking skills.

Individual differences help distinguish the project assessment from the speaking assessments. E3 scored 9.50 out of 10 on the project and 28 out of 30 on the posttest, while E4 scored 8.50 out of 10 on the project and finished with 20 out of 30 in speaking, within the medium category. E2 scored 6.00 out of 10 on the project and increased from 14 to 20 points between assessments, equivalent to 42.86%. These examples show that a score for a collaborative product and a change in speaking performance represent different aspects. The former incorporates planning, content, and audiovisual quality; it should therefore neither be interpreted as an equivalent measure nor added to speaking scores.

The integration of technology and pedagogical guidance is central to interpreting the intervention. Solís-Franco et al. (2025) and Añapa et al. (2025) provide background for discussing the integration of digital resources and communicative activities. English for Change includes research, scriptwriting, rehearsals, and presentations, incorporating technology into a sequence of activities with linguistic objectives.

5. Conclusions

The initial assessment yielded a mean of 16.30 out of 30, with 95% of participants concentrated in the low and medium categories. Vocabulary had the lowest mean, at 2.00 out of 5, followed by fluency at 2.75 out of 5. These findings helped identify the areas requiring greater attention and informed instructional planning aimed at expanding lexical resources and strengthening continuity in oral production.

The English for Change intervention integrated PBL with digital tools through research, scriptwriting, rehearsals, and audiovisual production, involving five teams of four students. The project assessment yielded a mean score of 8.18 out of 10. Planning and collaboration emerged as the strongest criterion, with a mean score of 1.73 out of 2, while 50% of participants achieved an excellent rating in this dimension. This assessment complemented the speaking tests by incorporating the work process and the characteristics of the audiovisual product.

The final comparison showed a mean of 21.20 out of 30, a gain of 4.90 points and a relative increase of 30.06%. All 20 participants showed improvements in their scores, while 17 students (85%) advanced to a higher performance category. The largest gains were in fluency and interaction (0.95 points each), while coherence showed the smallest increase (0.55 points).

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Transparency

Conflicto de interés

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