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Research Article

Impact of Performance-Based Learning on English Language Communication and Teamwork Skills among Secondary School Students in Kerala

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ABSTRACT

This study examines whether performance-based learning enhances English Language Communication Skills and Teamwork Skills among secondary-school students in Kerala compared with conventional instruction. A quasi-experimental pre-test–post-test non-equivalent groups design was implemented in a secondary school in Thiruvananthapuram, using two investigator-developed instruments—the English Language Communication Skills Test and the Teamwork Skills Test—to generate classroom-embedded evidence from authentic tasks and calibrated rubrics. Group comparisons employed analysis of covariance, with all analyses conducted in EDUSTAT as the statistical environment. Results indicate a clear advantage for performance-based learning on both outcomes. The findings support the integration of authentic performance tasks, explicit analytic criteria, and structured collaboration routines into regular instruction to strengthen communicative competence and teamwork.

Keywords: *performance-based learning, English language communication, teamwork skills*

Introduction

India's National Education Policy (NEP) 2020 places communication and collaboration among core student competencies and recommends learner-centred, experiential pedagogies that foreground authentic performance (Government of India, 2020). Within this policy frame, performance-based learning—students demonstrating what they know through tasks judged against explicit criteria—offers a coherent route to strengthen English language communication and teamwork in secondary classrooms. Research on systems of assessment for "deeper learning" argues that integrating performance tasks and rubrics within instruction yields more valid evidence of complex competencies than stand-alone tests and also improves day-to-day teaching through shared criteria and moderated scoring (Conley & Darling-Hammond, 2013). Internationally, collaborative problem solving has been formalised as a measurable outcome in large-scale assessments, underscoring its relevance as an educational target (OECD, 2017).

Empirical syntheses on project- and task-based approaches report gains in 21st-century skills, particularly communication and collaboration, and second-language research indicates that meaning-focused, outcome-oriented tasks can enhance oral proficiency when supported by interactional demands and clear performance expectations (Condliffe et al., 2017; Ellis, 2009). However, evidence from Indian secondary settings—and Kerala in particular—remains comparatively limited, especially where communication and teamwork are assessed with investigator-developed, contextually aligned tools rather than adopted instruments. Addressing this gap, the present quasi-experimental study compares performance-based learning with conventional instruction for their effects on English Language Communication Skills and Teamwork Skills among secondary students, using ANCOVA to estimate adjusted post-test group differences.

Background of the Study

English communication and teamwork stand among the core competencies emphasised in India's National Education Policy (NEP) 2020, which advocates experiential, competency-based, and performance-oriented pedagogy across school levels (Government of India, 2020). In secondary schooling, where English functions

as a medium for higher studies and employability, classrooms that require students to demonstrate learning through authentic tasks—presentations, dialogues, problem-solving, and collaborative products—offer more direct evidence of communicative competence than recall-based testing (Conley & Darling-Hammond, 2013). International assessment agendas likewise foreground collaboration as a measurable outcome, signalling its legitimacy as a curricular target rather than a by-product of group work (OECD, 2017). Within Kerala's learner-centred traditions, a systematic integration of performance-based tasks can therefore align instructional processes with these policy priorities while generating observable behaviours amenable to rigorous scoring.

Empirical syntheses on project- and task-based approaches report gains in 21st-century skills, especially communication and collaboration (Condliffe et al., 2017). In second-language settings, task-based language teaching links meaning-focused interaction to improved oral proficiency when tasks impose clear outcomes and interactional demands (Ellis, 2009). Parallel evidence from cooperative learning research shows that structured positive interdependence and individual accountability improve team processes and products, including communication quality and conflict management (Johnson & Johnson, 2009). Despite this base, classroom-level evidence from Indian secondary contexts remains comparatively sparse, particularly studies that deploy investigator-developed, context-aligned tools to capture both English communication and teamwork with defensible scoring. The present study addresses this gap by implementing a performance-based learning intervention and evaluating its effects with purpose-built assessments and appropriate analysis.

Research Questions

1. Is Performance-Based Learning more effective than conventional instruction in improving English Language Communication Skills among secondary-school students in Kerala?
2. Is Performance-Based Learning more effective than conventional instruction in improving Teamwork Skills among secondary-school students in Kerala?

Objectives

1. To evaluate the effectiveness of Performance-Based Learning, relative to conventional instruction, in improving English Language Communication Skills among secondary-school students in Kerala.
2. To evaluate the effectiveness of Performance-Based Learning, relative to conventional instruction, in improving Teamwork Skills among secondary-school students in Kerala.

Hypotheses

1. There is significant difference between the experimental and control groups in their post-test scores of English Language Communication Skills after adjustment for pre-test scores.
2. There is significant difference between the experimental and control groups in their post-test scores of Teamwork Skills after adjustment for pre-test scores.

Methodology

A quasi-experimental pre-test–post-test non-equivalent groups design was adopted. Two intact secondary-school classes from a government-aided school in Thiruvananthapuram district, Kerala, constituted the experimental group (n = 40) and the control group (n = 40). Multi-stage cluster sampling was used, involving selection of the district, selection of an accessible school, and selection of two intact classes within the school. Group membership remained as constituted by the school; both groups followed the same syllabus units with comparable time-on-task and assessment schedules. The experimental class received instruction through Performance-Based Learning, while the control class received conventional instruction. Pre-tests were administered to both groups on two outcomes—English Language Communication Skills and Teamwork Skills—followed by the intervention period and post-tests on parallel forms.

Two investigator-developed instruments were employed. The English Language Communication Skills Test (ELCST) comprised a Speaking–Interaction task rated analytically on six criteria (Fluency, Pronunciation/Intelligibility, Lexical Range/Precision, Grammatical Control, Organization/Coherence, Interactive Communication) and a Listening Mini-Test with 12 multiple-choice items based on three short audio texts (announcement, dialogue, short talk). For the speaking rubric, levels 1–4 were mapped to 25/50/75/100 and combined using preset criterion weights; for listening, percentage scores were computed as 20 + (correct/12)×80, ensuring a non-zero floor for any bona fide attempt. The total ELCST score was calculated as 0.70×Speaking + 0.30×Listening, yielding a range of 23.5–100 for attempts; non-attempts or absences were coded as AB rather than zero. The Teamwork Skills Test (TWST) comprised a Teacher Observation Rubric and a Peer Contribution Rating. The observation rubric included six criteria (Contribution/Productivity, Collaboration/Support, Communication/Listening, Planning/Goal-setting, Responsibility/Initiative, Conflict Management/Respect) observed at midpoint and end of the unit and averaged; rubric levels 1–4 were mapped to 25/50/75/100. The peer rating included six statements on a 1–5 scale for each member (self-ratings excluded) and was transformed to a percentage by multiplying the mean by 20, again preserving a non-zero floor. The total TWST score was computed as 0.70×Teacher Observation + 0.30×Peer Rating, with a range of 23.5–100 for attempts. Where fewer than two peer ratings were available

for a student, the teacher observation was reported with full weight and flagged as "peer data insufficient." Across both tools, non-attempts were recorded as AB to avoid artificial zeros in the dataset.
The procedure began with baseline administration of ELCST and TWST to both groups. The intervention then proceeded over the scheduled unit: the experimental class engaged in authentic performance tasks (presentations, structured dialogues, collaborative products with explicit rubrics and interim feedback), while the control class followed teacher-led exposition and routine practice aligned to the same content. Teamwork processes were observed at midpoint and end in both groups using the TWST rubric on comparable classroom activities. Post-tests on parallel forms of ELCST and TWST were administered at the close of the unit. Rater calibration used anchor performances at each level; a subsample of performances and observations (approximately one-fifth) was double-rated to monitor scoring consistency, and internal consistency was examined for the peer form. Data analysis was carried out using EDUSTAT. Descriptive statistics (N, Mean, Median, Mode, Standard Deviation, Skewness, Kurtosis) were computed for pre- and post-test scores of both outcomes. For inferential comparison, a one-way Analysis of Covariance (ANCOVA) was used for each dependent variable, to compare adjusted post-test means of the experimental and control groups. Decisions on statistical significance were taken at conventional levels (0.05 and 0.01).

Data Analysis and Interpretation

Descriptive Analysis of data

This section presents descriptive statistics for each variable by group and test phase (pre-test, post-test). Reported indices include N, Mean, Median, Mode, Standard Deviation, Skewness, and Kurtosis, summarising central tendency, dispersion, and distributional form. These summaries establish baseline comparability and document post-intervention shifts, providing context for the subsequent inferential analysis.

Table 1 *Descriptive Statistics of English Language Communication Skills*

Measure	N	Mean	Median	Mode	SD	Skewness	Kurtosis
Pre Test Scores of English Language Communication Skills (Experimental Group)	40	39.03	39.00	31	6.14	-0.05	-1.28
Pre Test Scores of English Language Communication Skills (Control Group)	40	37.95	37.00	33	5.53	0.29	-1.12
Post Test Scores of English Language Communication Skills (Experimental Group)	40	65.88	64.00	54	11.58	0.26	-1.34
Post Test Scores of English Language Communication Skills (Control Group)	40	57.13	55.00	54	6.80	0.37	-0.92

The two groups start at comparable levels (experimental: M = 39.03, Median = 39; control: M = 37.95, Median = 37), with near-symmetric distribution for the experimental group (skew = −0.05) and slight positive skew for the control group (skew = 0.29). At post-test, both groups improve, but the experimental group shows a clearly higher centre (M = 65.88, Median = 64) than the control group (M = 57.13, Median = 55). Dispersion widens more in the experimental group (SD increases from 6.14 to 11.58, vs. 5.53 to 6.80 in the control), indicating heterogeneous magnitudes of improvement. Post-test distributions are mildly positively skewed in both groups (skew = 0.26 and 0.37), consistent with a small lower-performing tail, and kurtosis remains negative throughout (platykurtic), reflecting flatter-than-normal profiles. Although both groups share the same post-test mode (54), the higher mean and median in the experimental group indicate a stronger overall shift upward in English Language Communication Skills.

Table 2 *Descriptive Statistics of Teamwork Skills*

Measure	N	Mean	Median	Mode	SD	Skewness	Kurtosis
Pre Test Scores of Teamwork Skills (Experimental Group)	40	37.90	37.00	31	5.76	0.40	-1.25
Pre Test Scores of Teamwork Skills (Control Group)	40	39.20	39.00	46	6.00	0.00	-1.36
Post Test Scores of Teamwork Skills (Experimental Group)	40	70.93	71.00	85	9.91	-0.26	-0.68
Post Test Scores of Teamwork Skills (Control Group)	40	59.80	61.50	56	7.88	-0.45	-1.06

At baseline, the two groups are close in central tendency, with the control group marginally higher (Mean ≈ 39.2) than the experimental group (Mean ≈ 37.9). After instruction, both groups improve, but the experimental group shows a markedly higher post-test centre (Mean ≈ 70.9; Median ≈ 71; Mode = 85) than the control group (Mean ≈ 59.8; Median ≈ 61.5; Mode = 56). Dispersion widens from pre to post in both groups—more in the experimental class (SD 5.76 → 9.91 versus 6.00 → 7.88)—indicating heterogeneous gains across students. The

shift from near-zero/positive skew at pre to slight negative skew at post (especially in the control group, skew ≈ −0.45) suggests scores cluster toward the higher end with a longer lower tail; the experimental group's high post-test mode (85) further indicates a concentration of strong team performances. Negative kurtosis throughout (platykurtic) reflects flatter-than-normal distributions. Overall, the descriptive pattern points to stronger teamwork improvements in the experimental group alongside greater variability in outcomes.

Testing of Hypotheses

This section presents the statistical testing of the study's hypotheses. For each outcome (English Language Communication Skills; Teamwork Skills), a one-way ANCOVA compared the experimental and control groups. Decisions were taken at the .05 and .01 levels; when a test was significant, the direction of effect was determined from the adjusted post-test means (the higher mean indicating the more effective method). Summary tables report df, sum of squares, mean squares, F, and level of significance. All analyses were carried out in EDUSTAT.

Testing of Hypothesis 1

Table 3 *Analysis of Covariance of Pre-Test and Post-Test Scores of English Language Communication Skills of Experimental Group and Control Group*

Source of variation	df	Sum of squares	Mean square	F	Level of significance
Among means	1	1566.02	1566.02	17.25	0.01
Within groups	77	6991.43	90.8		
Total	78	8557.45			

The obtained value of F is 17.25 and is significant at 0.01 level. ($F = 17.25$; $p<0.01$). This shows that the post-test mean scores of English Language Communication Skills of treatment groups differ significantly after they have been adjusted for difference in the pre-test scores of English Language Communication Skills.

Table 4 *Pre-Test, Post-Test and Adjusted Post-Test Mean Scores of English Language Communication Skills of the Treatment Groups*

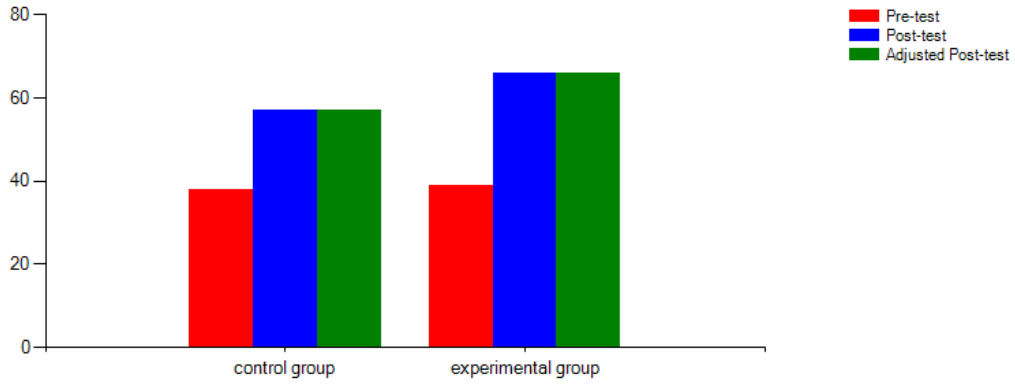
Group	Number of students	Mean of pre-test	Mean of post-test	Adjusted post-test mean
Control	40	37.95	57.13	57.06
Experimental	40	39.03	65.88	65.94

The significant difference between the adjusted post-test means of English Language Communication Skills indicates that the pupils of experimental and control group differ significantly in their post-test scores of English Language Communication Skills after they have been adjusted for difference in the pre-test scores of English Language Communication Skills. Since the adjusted mean of post-test scores of English Language Communication Skills of experimental group is significantly greater than that of the control group, the treatment applied to the experimental group (Performance-Based Learning) is better than that applied to the control group (conventional instruction) with regard to English Language Communication Skills.

Tenability of Hypothesis

Analysis of Covariance of pre-test and post-test scores of English Language Communication Skills of experimental group and control group revealed that there is significant difference between control group and experimental group in their post-test scores of English Language Communication Skills after they have been adjusted for difference in the pre-test scores of English Language Communication Skills. Hence the null hypothesis formulated in this context is rejected.

Figure 1 *Pre-Test, Post-Test and Adjusted Post-Test Mean Scores of English Language Communication Skills of Experimental Group and Control Group*



Testing of Hypothesis 2

Table 5 *Analysis of Covariance of Pre-Test and Post-Test Scores of Teamwork Skills of Experimental Group and Control Group*

Source of variation	df	Sum of squares	Mean square	F	Level of significance
Among means	1	2530.41	2530.41	31.48	0.01
Within groups	77	6189.49	80.38		
Total	78	8719.89			

The obtained value of F is 31.48 and is significant at 0.01 level. ($F = 31.48$; $p<0.01$). This shows that the post-test mean scores of Teamwork Skills of treatment groups differ significantly after they have been adjusted for difference in the pre-test scores of Teamwork Skills.

Table 6 *Pre-Test, Post-Test and Adjusted Post-Test Mean Scores of Teamwork Skills of the Treatment Groups*

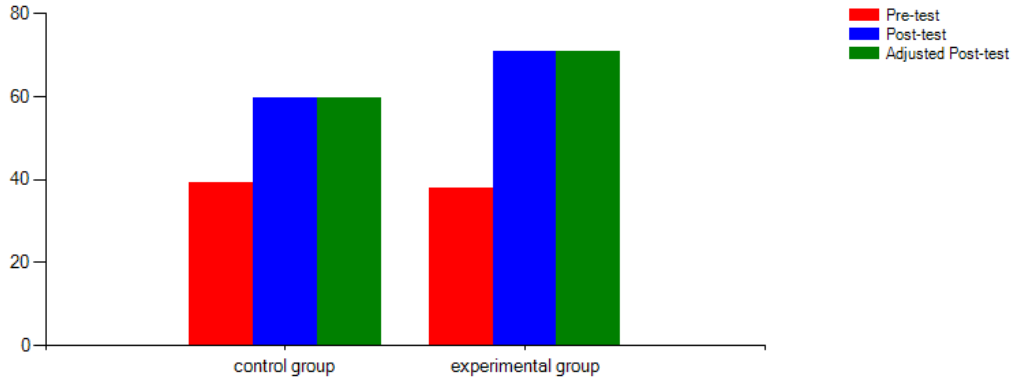
Group	Number of students	Mean of pre-test	Mean of post-test	Adjusted post-test mean
Control	40	39.2	59.8	59.7
Experimental	40	37.9	70.93	71.02

The significant difference between the adjusted post-test means of Teamwork Skills indicates that the pupils of experimental and control group differ significantly in their post-test scores of Teamwork Skills after they have been adjusted for difference in the pre-test scores of Teamwork Skills. Since the adjusted mean of post-test scores of Teamwork Skills of experimental group is significantly greater than that of the control group, the treatment applied to the experimental group (Performance-Based Learning) is better than that applied to the control group (conventional instruction) with regard to Teamwork Skills.

Tenability of Hypothesis

Analysis of Covariance of pre-test and post-test scores of Teamwork Skills of experimental group and control group revealed that there is significant difference between control group and experimental group in their post-test scores of Teamwork Skills after they have been adjusted for difference in the pre-test scores of Teamwork Skills. Hence the null hypothesis formulated in this context is rejected.

Figure 2 *Pre-Test, Post-Test and Adjusted Post-Test Mean Scores of Teamwork Skills of Experimental Group and Control Group*



Discussion of the Results

The study shows a clear advantage for Performance-Based Learning over conventional instruction on both outcomes. After adjusting for pre-test scores, the experimental group records higher post-test means than the control group in English Language Communication Skills (65.94 vs. 57.06; $F = 17.25$, $p < .01$) and in Teamwork Skills (71.02 vs. 59.70; $F = 31.48$, $p < .01$). These adjusted differences confirm that the observed gains are not attributable to initial group disparities, and they align with the descriptive upward shifts from pre- to post-test on both variables. In educational terms, learners exposed to authentic, criteria-referenced tasks demonstrate stronger communicative performance and more effective collaborative behaviours than peers taught through routine, teacher-led approaches.

The results are pedagogically coherent. For English communication, the intervention embeds sustained opportunities for purposeful speaking, responsive interaction, and targeted listening—exactly the behaviours captured by the investigator-developed rubric and mini-test. Continuous use of explicit criteria likely sharpens organization, vocabulary precision, and repair strategies during Q&A and dialogue tasks, which translates into higher post-test performance. For teamwork, the intervention structures interdependence (roles, shared

products, milestone reviews) and accountability (teacher observations plus peer contributions). Such structures make collaborative behaviours visible and coachable, producing consistent advantages at post-test. The magnitude of benefit appears larger for Teamwork Skills than for English communication (adjusted mean gaps of 11.32 and 8.88 points, respectively). This pattern is plausible because teamwork behaviours often respond quickly to explicit routines—agenda use, equitable turn-taking, progress monitoring, conflict resolution—whereas linguistic accuracy and range typically accumulate more gradually. In other words, the social-organizational routines of teamwork may yield faster, more uniform improvements across students than the multifaceted components of second-language communication.

Descriptively, standard deviations increase from pre- to post-test for both variables, suggesting heterogeneous treatment effects. Some teams and individuals appear to accelerate markedly under performance-based conditions, while others improve more modestly. This spread may reflect differences in initial confidence, alignment between task topics and students' interests, or variability in how teams enact roles and feedback. It points to the value of ongoing rater calibration, mid-course formative checkpoints, and targeted scaffolds (e.g., sentence starters for discussion, mini-workshops on planning and time management) to support learners who benefit less from open-ended tasks.

Taken together, the evidence indicates that integrating performance-based tasks with clear criteria is a productive route for strengthening English Language Communication Skills and Teamwork Skills in secondary classrooms. The quasi-experimental design, single-school context, and intact classes set natural bounds on generalisation; nevertheless, the consistency of advantages across both outcomes, coupled with investigator-developed tools aligned to classroom practice, lends the findings practical significance. Replication across multiple schools and a delayed post-test for retention would extend these results and clarify how durable the observed gains remain once the intervention concludes.

Implications of the Study

The evidence that performance-based learning yields higher adjusted post-test scores in English Language Communication Skills and Teamwork Skills carries direct classroom implications. Pedagogically, secondary English lessons benefit from integrating authentic, criterion-referenced tasks (presentations, structured dialogues, collaborative products) as routine vehicles for instruction and assessment. Regular use of explicit analytic rubrics focuses teaching on fluency, intelligibility, lexical precision, grammatical control, organization, and interactive moves, while structured team routines (clear roles, milestone check-ins, conflict-resolution protocols) cultivate dependable collaboration. Because gains in teamwork exceed those in communication, lesson design profitably pairs team routines with targeted language scaffolds (e.g., sentence frames for agreeing/disagreeing, turn-taking signals, quick repair strategies) so that social organization and language growth advance together.

Assessment practice also stands to improve. The investigator-developed tools (ELCST and TWST) demonstrate how school-embedded tasks generate defensible, publishable evidence without relying on external instruments. Rubric-based scoring with calibrated anchors supports consistency across teachers, and the combined teacher-observation plus peer-rating model yields a fuller picture of teamwork than single-source judgments. Maintaining non-zero floors for bona fide attempts avoids punitive zeros and stabilizes longitudinal tracking, while coding non-attempts as absences preserves data integrity. At the school level, moderation meetings, shared exemplars, and periodic double-rating strengthen reliability; timetable provisions for presentations and team checkpoints ensure feasibility. For curriculum and policy, the approach aligns with competency-based aims by providing observable indicators of communication and collaboration that can be reported in proficiency bands and used for targeted support. Finally, the widened post-test dispersion signals heterogeneous responses; targeted scaffolds, small-group coaching, and proactive team-formation strategies help ensure that students who benefit less from open-ended tasks receive structured assistance, thereby improving equity of outcomes.

Conclusion

Performance-based learning proved more effective than conventional instruction for developing English Language Communication Skills and Teamwork Skills in Kerala's secondary classrooms. Using investigator-developed, classroom-aligned assessments and comparisons carried out in EDUSTAT, the study demonstrates consistent benefits in both domains, underscoring the value of authentic tasks, clear rubrics, and structured team processes. The approach aligns with competency-based curricular aims and offers practical guidance for lesson design, assessment moderation, and reporting. Replication across additional schools and inclusion of follow-up testing would further clarify durability and transfer of gains.

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