



Task-Based Learning for Workplace Communication: Assessing the Impact of Role-Play Simulations in Diploma Engineering Courses

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ABSTRACT

This study evaluates the impact of task-based role-play simulations on workplace communication skills development among diploma engineering students at Rajiv Gandhi Proudhyogiki Vishwavidyalaya (RGPV). Aligned with the university's Outcome-Based Curriculum (OCBC-2019), the research employed a mixed-methods approach involving 90 students across five engineering disciplines. A 4-week intervention program compared experimental (role-play) and control (traditional instruction) groups using pre/post-assessments, industry expert evaluations, and student surveys. Results demonstrated significant improvements, with 34.6% and 35.4% gains in fluency and grammatical accuracy respectively ($p < 0.05$), while industry-rated workplace relevance increased by 65.7%. Qualitative data revealed 82% of participants reported enhanced confidence in professional scenarios. The study validates RGPV's competency-based framework while identifying opportunities to incorporate safety communication modules for manufacturing sectors. These findings offer a replicable model for polytechnics implementing experiential learning methodologies to bridge the academia-industry communication gap.

Keywords:—Task-based learning, workplace communication, role-play simulations, engineering education, outcome-based curriculum, polytechnic education, competency development, industry-aligned skills

I. INTRODUCTION

Effective workplace communication skills are critical for engineering students transitioning from academic settings to professional environments, yet many diploma graduates struggle to meet industry expectations for oral proficiency and situational fluency. This study examines the impact of task-based learning (TBL) through role-play simulations on developing workplace communication (Barker et al., 2018; Srishti, 2017) competencies among diploma engineering students at Rajiv Gandhi Proudhyogiki Vishwavidyalaya (RGPV), as outlined in the university's Outcome-Based Curriculum (OCBC-2019) (Rajiv Gandhi Proudhyogiki Vishwavidyalaya, Bhopal Outcome Based Curriculum Name of Scheme : OCBC-2019, 2019). The RGPV syllabus explicitly emphasizes practical communication skills through Unit III's focus on business correspondence, non-verbal communication, and role-play exercises simulating real-world scenarios like job interviews and

client interactions. However, despite this structured approach, a persistent gap remains between classroom instruction and the dynamic communication demands of modern engineering workplaces.

The role-play simulations prescribed in RGPV's Communication Skills curriculum (Unit III) demonstrate strong alignment with real-world engineering workplace scenarios, as illustrated in Table 1. The syllabus includes mock job interview exercises that directly prepare students for HR screening processes in engineering recruitment, while shopkeeper-customer dialogues develop negotiation skills applicable to client interactions in sales and project management. Doctor-patient role-plays, though seemingly unrelated, effectively build troubleshooting communication patterns needed for technical support roles. These practical exercises mirror industry-essential situations: mock interviews correlate with campus placement processes (D'cruz et al., 2013) and service-oriented interactions model cross-departmental problem-solving in manufacturing sectors. This intentional mapping validates RGPV's competency-based approach, showing how classroom role-plays bridge the experiential gap between academic training and professional communication demands in Central India's engineering sector, particularly for diploma holders entering fieldwork-intensive roles. The table's comparative framework also reveals opportunities to expand scenarios (e.g., adding safety protocol briefings to address industry needs in India manufacturing clusters) while maintaining fidelity to the existing syllabus structure. To address these limitations, this study hypothesizes that focused task-based interventions utilizing role-play simulations can significantly improve critical communication skills, including fluency, grammatical accuracy, clarity, and

confidence. To address this gap, our research evaluates whether supplementing traditional communication skills instruction with intensive task-based learning through role-play simulations can enhance workplace communication competency.

Drawing from experiential learning theory, the methodology immerses students in realistic workplace contexts requiring spontaneous communication and collaborative problem-solving. The central research question examines whether these role-play simulations, designed to mirror real-world engineering scenarios, measurably improve student's oral communication skills, self-efficacy, and perceived readiness for professional roles. (Amirkhanova & Bobyрева, 2020; Jackson & Walters, 2000)

Table 1: Role-Play Topics from RGPV Syllabus vs. Industry Scenarios

RGPV Practical Exercise (Unit III)	Mapped Industry Scenario
Mock job interview	HR interviews for engineering roles
Shopkeeper-customer dialogue	Client negotiations in sales/engineering
Doctor-patient interaction	Technical support troubleshooting

This research investigates whether structured role-play interventions—aligned with RGPV's prescribed practical activities (e.g., mock interviews, shopkeeper-customer dialogues) and evaluated through the university's existing speaking rubrics—can significantly improve students' fluency, grammar accuracy, and confidence in professional contexts. This study addresses three gaps in current polytechnic education research: (1) limited empirical data on role-play efficacy in Indian technical education, (2) inconsistent mapping of classroom activities to industry-specific

communication needs, and (3) underutilization of RGPV's assessment rubrics for longitudinal skill tracking. By combining quantitative pre/post-test analysis of rubric scores with qualitative student feedback, this study aims to validate role-play simulations as a scalable pedagogical tool to achieve RGPV's Course Outcomes (CO2 for oral expression and CO4 for professional communication) while proposing actionable strategies to enhance the existing curriculum. The findings will empower educators to bridge the employability gap through targeted, experiential learning methodologies.

II. LITERATURE REVIEW

The integration of task-based learning (TBL) through role-play simulations in technical education has gained significant attention for bridging the gap between classroom instruction and workplace communication demands. Research by (Girma et al., 2019) establishes TBL as an effective pedagogical framework for developing language competencies through authentic, goal-oriented activities. In the Indian context, studies by (Alves et al., 2018; Nagano, 2020; Srishti, 2017) highlight the particular relevance of role-plays for polytechnic students, who require immediate application of communication skills in fieldwork-intensive engineering roles. However, these studies predominantly focus on generic scenarios, overlooking industry-specific needs such as safety protocol communication—a critical competency in India's manufacturing clusters.

RGPV's prescribed role-plays (e.g., mock interviews, customer interactions) align with global TBL principles but lack explicit incorporation of safety briefings or technical reporting drills, which constitute 40% of workplace interactions in Indian manufacturing sectors (Saxena & Sahay,

2000). This gap is particularly salient in Central India's industrial hubs, where diploma engineers frequently engage in shop-floor communication involving hazard warnings and equipment protocols. The findings suggest that expanding RGPV's Unit III role-plays to include simulations of safety meetings or incident reporting—while retaining existing scenarios—could enhance curriculum relevance without compromising its structure (Engelbrecht et al., 2019).

Table 2 systematically maps the three-phase Task-Based Learning (TBL) framework onto RGPV's Communication Skills curriculum, demonstrating how existing activities align with evidence-based pedagogical principles. The pre-task phase corresponds to vocabulary-building exercises from Unit I, where students learn domain-specific terminology (e.g., technical terms from prescribed passages about renewable energy), fulfilling Course Outcome 1 (CO1) for pronunciation and comprehension. This preparatory stage mirrors (Kanoksilapatham & Suranakkharin, 2019) emphasis on linguistic scaffolding prior to task execution. The task cycle phase directly engages with RGPV's practical exercises from Unit III, particularly role-play simulations of workplace scenarios like client meetings or job interviews, which target CO2 for oral expression. These activities embody the essential TBL characteristic of "learning by doing" (Mercado, 2000), with students negotiating meaning in realistic contexts. Finally, the language focus phase leverages Unit II's applied grammar modules, where instructors provide corrective feedback on grammatical accuracy (CO3) during post-role-play reflections, consistent with noticing hypothesis (Illés & Akcan, 2016). This tripartite alignment reveals RGPV's implicit adoption of TBL methodology

while identifying opportunities for enhancement—such as adding structured peer feedback sessions to strengthen the language focus phase. The table underscores how the curriculum already operationalizes TBL principles, though with potential to make these connections more explicit in lesson planning to maximize their pedagogical impact.

Table 2: TBL Components in RGPV Curriculum

TBL Phase	RGPV Activity Example	Outcome (CO Mapping)
Pre-task	Vocabulary building for role-plays (Unit I)	CO1 (Pronunciation)
Task Cycle	Role-play enactment (Unit III)	CO2 (Oral Expression)
Language Focus	Grammar feedback via instructor (Unit II)	CO3 (Grammar)

Theoretical support for this adaptation comes from genre analysis, which emphasizes teaching discipline-specific communication genres (e.g., safety briefings as a sub-genre of technical reporting). Meanwhile, industry feedback from Bhopal’s manufacturing units underscores the demand for engineers who can articulate safety protocols with the fluency practiced in RGPV’s customer dialogues. This literature synthesis reveals a dual opportunity: (1) to validate RGPV’s current role-play model through empirical assessment, and (2) to propose evidence-based expansions that address regional industry needs while adhering to outcome-based education (OBE) principles.

III. METHODOLOGY

This study employed a mixed-methods research design to evaluate the effectiveness of task-based role-play simulations in enhancing workplace communication skills

among diploma engineering students at Rajiv Gandhi Proudhyogiki Vishwavidyalaya (RGPV). The methodology aligned with the university's Outcome-Based Curriculum (OCBC-2019)(Rajiv Gandhi Proudhyogiki Vishwavidyalaya, Bhopal Outcome Based Curriculum Name of Scheme : OCBC-2019, 2019), particularly drawing from Unit III's prescribed role-play activities and assessment rubrics. A cohort of 90 first-year diploma students from five engineering disciplines (Electrical, Mechanical, Civil, Computer Science, and Information Technology) participated in a 4-week intervention program. The experimental group (n=45) engaged in structured role-play simulations mirroring industry scenarios (Table 1), while the control group (n=45) received traditional lecture-based instruction.

Data collection incorporated both quantitative and qualitative measures, as outlined in Table 3: Assessment Metrics. Speaking skills were evaluated through pre- and post-intervention role-play recordings assessed via RGPV's standardized speaking rubric (from Unit III practical examinations), focusing on fluency, grammar accuracy, and workplace relevance. Industry experts further rated workplace applicability using a 5-point Likert scale. Student perceptions were captured through surveys measuring confidence levels and perceived skill improvement.

The quantitative analysis employed paired t-tests to compare pre/post-intervention scores, while qualitative data from open-ended survey responses underwent thematic analysis. This dual approach ensured comprehensive evaluation of both skill development and student experiences, adhering to RGPV's emphasis on practical competency measurement.

Table 3: Assessment Metrics

Skill Category	Assessment Tool	Data Type	RGPV Curriculum Alignment
Fluency	Role-play recordings	Quantitative	Unit III (Presentation Skills)
Grammar Accuracy	Instructor evaluation forms	Quantitative	Unit II (Applied Grammar)
Workplace Relevance	Industry expert ratings	Quantitative	CO4 (Professional Communication)
Confidence Improvement	Student self-assessment surveys	Qualitative	Affective Domain Outcomes (ADOs)

The study maintained ethical standards through participant anonymity and voluntary involvement, with all assessment procedures approved by the institution's academic committee.

IV. RESULTS AND DISCUSSION

The intervention yielded statistically significant improvements across all measured communication competencies, as demonstrated in Table 4: Pre/Post-Test Scores. Quantitative analysis revealed a 34.6% increase in fluency scores (from $M=5.2$ to $M=7.0/10$) and a 35.4% improvement in grammatical accuracy (from $M=4.8$ to $M=6.5/10$), with $p<0.05$ in paired t-tests. These gains substantially exceeded the control group's marginal improvements (fluency: +12%; grammar: +9%), validating the efficacy of task-based role-play simulations.

Three key findings emerge from these results. First, the dramatic 65.7% improvement in workplace relevance scores (industry-rated) confirms that RGPV's role-play activities effectively bridge the academia-industry gap, particularly for scenarios like client negotiations (Unit III).

Table 4: Pre/Post-Test Scores

Assessment Criteria	Pre-Test Mean (/10)	Post-Test Mean (/10)	Improvement (%)
Fluency	5.2 ± 0.8	7.0 ± 0.6	34.6
Grammar Accuracy	4.8 ± 1.1	6.5 ± 0.9	35.4
Workplace Relevance*	3.5 ± 0.7	5.8 ± 0.5	65.7

*Rated by industry experts on a 10-point scale

Second, qualitative data revealed that 82% of participants reported heightened confidence in professional interactions, with open-ended responses emphasizing the value of "practical rehearsal before real workplace situations." This aligns with self-efficacy theory and directly supports RGPV's Affective Domain Outcomes (ADOs)(Shealy et al., 2019).

However, the results also highlight curricular gaps. While grammar and fluency showed strong gains, students struggled with technical jargon during safety briefings—a critical omission in the current syllabus, as noted in the literature review. This suggests the need to expand Unit III's scenarios to include manufacturing-specific communication (e.g., equipment protocols), while retaining the existing framework.

The study's outcomes empirically validate RGPV's competency-based approach while proposing targeted enhancements. By demonstrating that structured role-plays can simultaneously improve linguistic competence (CO1-CO3) and professional readiness (CO4), these findings offer a replicable model for other polytechnics implementing OBE curricula. Future research should explore longitudinal retention of these skills and industry-specific adaptations for regional labor markets.

V. CONCLUSION AND FUTURE WORK

This study conclusively demonstrates that task-based role-play simulations significantly enhance workplace communication skills among diploma engineering students at RGPV, validating the effectiveness of the university's Outcome-Based Curriculum (OCBC-2019). The 34.6% improvement in fluency and 35.4% gain in grammatical accuracy, coupled with a striking 65.7% increase in workplace relevance scores, empirically confirm that structured role-plays bridge the gap between classroom instruction and industry demands. These findings not only achieve RGPV's targeted Course Outcomes (CO1-CO4) but also address national employability concerns highlighted in the National Education Policy (NEP 2020). The intervention's success—particularly in boosting student confidence (82% self-reported improvement)—provides a replicable pedagogical model for polytechnics across India, combining RGPV's existing rubrics with evidence-based task-based learning (TBL) methodologies.

Future research directions should focus on three key areas:

1. ***Curriculum Enhancement:*** Developing safety protocol modules for manufacturing sectors, building on identified gaps in technical jargon proficiency.
2. ***Technology Integration:*** Exploring AI-powered role-play simulations (e.g., VR interviews) to complement traditional methods.
3. ***Longitudinal Tracking:*** Assessing skill retention over 6-12 months post-intervention.

Implementation of these evidence-based strategies will strengthen RGPV's position as a leader in competency-based technical education while directly addressing the communication needs of Central India's engineering industries.

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