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Effect of Team-Based Learning on Workplace Communication Skills among Chinese Vocational Students

Jin Yufeng[1], Kanreutai Klangphahol[2] and Wassaporn Jirojphan[3]

[1]Master student, Curriculum and Instruction Program, Valaya Alongkorn Rajabhat University under the Royal Patronage, Pathum Thani Province, Thailand

[2,3]Lecturer, Curriculum and Instruction Program, Valaya Alongkorn Rajabhat University under the Royal Patronage, Pathum Thani Province, Thailand

E-mail: 1792454003@qq.com, ORCID: https://orcid.org/0009-0007-4969-8664

E-mail: kanreutai@vru.ac.th, ORCID: https://orcid.org/0009-0003-2294-6390

E-mail: Wassaporn@vru.ac.th, ORCID: https://orcid.org/0009-0007-6934-5372

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Abstract

Background and Aims: China's vocational education faces a critical theory-practice gap in cultivating workplace communication skills essential for employment (Ministry of Education, 2013; Guo, 2021). While Team-Based Learning (TBL) has demonstrated efficacy in medical and higher education contexts (Michaelsen, 2002; Michaelsen et al., 2020), its application to vocational communication skills training remains empirically underexplored. This study addresses this lacuna by examining TBL's effect on first-year vocational students' communication competencies using a validated pretest-posttest design.

Methodology: A one-group pretest-posttest quasi-experimental design was employed with 50 first-year students from Yunnan Tin Vocational and Technical College. Participants completed a 13-hour TBL-based Communication Skills course spanning five weeks. Data were collected through validated observation rating scales (25 items, five dimensions) and a satisfaction questionnaire (9 items, 5-point Likert scale), analyzed using paired t-test and one-sample t-test.

Results: Post-intervention communication skills scores (M=73.28, SD=6.92) significantly exceeded pretest scores (M=58.42, SD=8.35) at a $p<0.01$ level ($t=15.832$), representing a 14.86-point improvement. The mean score surpassed the 70% competency benchmark ($t=3.354$, $p<0.01$). Student satisfaction was high overall (M=4.26, SD=0.67), with sub-dimensions of teaching method (M=4.17), team collaboration (M=4.32), and learning outcomes (M=4.28) all rated above 4.0.

Conclusion: TBL significantly enhanced vocational students' workplace communication skills and satisfaction within a condensed 13-hour intervention. This study extends TBL theory into Chinese vocational education contexts, demonstrating that competence emerges from structured collaborative practice rather than passive knowledge transmission. The findings provide an evidence-based model for sector-wide vocational education reform, though longitudinal validation is warranted.

Keywords: Team-Based Learning; Communication Skills; Vocational Education; Workplace Competencies; Student Satisfaction

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Introduction

Vocational education in China faces a critical imperative: bridging the persistent theory-practice gap that renders graduates ill-equipped for workplace communication demands (Guo, 2021; Wang et al., 2024). Despite policy mandates for comprehensive quality cultivation (Ministry of Education, 2013), traditional pedagogical approaches fail to develop actionable communication competencies. With 12.22 million college graduates projected to enter the 2025 job market, employer surveys consistently identify communication skills as a decisive factor in employability, yet vocational graduates demonstrate significant deficits in expressive, listening, and cross-cultural communication abilities (Zhang, 2025; Wang et al., 2024).

Traditional lecture-based instruction in vocational colleges suffers from three core problems: (1) passive knowledge transmission fails to develop practical skills; (2) students lack motivation, viewing communication courses as burdens; and (3) theory-practice disconnection prevents workplace application (Guo, 2021). This creates urgent demand for pedagogical innovation.

Research Problem and Gap. While Team-Based Learning (TBL) has been extensively validated in medical education (Michaelsen, 2002; Michaelsen et al., 2020) and university settings (Sweet & Michaelsen, 2019), three critical gaps persist in extant literature. First, rigorous empirical investigations of TBL within Chinese vocational communication skills training remain conspicuously absent. Second, existing studies predominantly offer normative pedagogical prescriptions rather than experimentally-validated interventions employing psychometrically sound instruments. Third, no published research has subjected TBL's impact on vocational students' multi-dimensional communication skills to systematic empirical examination using validated pretest-posttest designs benchmarked against established workplace competency standards. This study addresses these deficiencies by providing the first empirically-grounded analysis of TBL's effectiveness in cultivating workplace-ready communication skills within an industrial vocational context.

Team-Based Learning (TBL), introduced by Michaelsen (2002), operationalizes constructivist and sociocultural learning theories through a structured three-stage cycle: individual preparation (iRAT), team readiness assurance (tRAT), and application exercises. Grounded in Vygotsky's (1978) Zone of Proximal Development, TBL cultivates skills through peer scaffolding that enables learners to perform beyond individual capabilities. While meta-analytic evidence confirms TBL's efficacy in medical education (Michaelsen et al., 2020), its boundary conditions in vocational communication training—particularly within China's industrial education contexts—remain theoretically and empirically underexplored.

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Objectives

1. To compare first-year vocational students' workplace communication skills before and after TBL intervention using validated behavioral observation measures.

2. To evaluate post-intervention competency levels against the established 70% workplace-readiness benchmark.

3. To assess student satisfaction with TBL methodology across teaching structure, team collaboration, and perceived learning outcomes.

Literature Review

This literature review systematically examines five interrelated dimensions: current course implementation status, learning theoretical foundations, Team-Based Learning (TBL) pedagogy, and enhancement of communication skills, thereby establishing a theoretical and empirical basis for curriculum reform at Yunnan Tin Industry Vocational and Technical College.

Current Course Situation

The Communication Skills for the Workplace (COMM101) is a mandatory general education course for all first-year students across 47 majors at Yunnan Tin Industry Vocational and Technical College, an industrial vocational institution in Yunnan Province, China (People's Government of Yunnan Province, 2023). The course faces three fundamental issues: first, traditional lecture-based instruction has resulted in low student motivation, with the majority of 50 sampled students demonstrating vague awareness of communication skills' importance and perceiving the course as an additional burden (Li et al., 2023). Second, pedagogical emphasis on theoretical knowledge transmission neglects practical language expression training, leading to insufficient understanding of skill importance and a lack of clear learning motivation (Gibbs, 2019). Third, a severe theory-practice disconnect exists; although students may proficiently master theoretical models, they lack opportunities for practical application, making it challenging to demonstrate comprehensive quality in authentic workplace situations such as job interviews (Guo, 2021).

The curriculum is structured around three modules based on Feng Rujian's Communication Skills (Ru, 2023): (1) Foundational theory covering seven communication elements, linear/interactive/transactional models, and corporate culture values embedded in Yunnan Tin Industry; (2) Core competencies across five dimensions—interpersonal relationship building, moderate refusal, appropriate self-disclosure, conflict management, and emotional support—aligned with the Ministry of Education's seven-dimensional framework; and (3) Digital communication focusing on enterprise platforms (WeChat Work, DingTalk, Tencent Meeting) for virtual team collaboration. This structure directly addresses policy mandates from the Ministry of Education (2013) and Yunnan Provincial Government (2023) that require vocational education to

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serve market demands and employment while cultivating comprehensive quality, particularly critical given the projected 12.22 million college graduates entering the 2025 job market (Zhang, 2025; Wang & Li, 2025).

Learning Theories

1. Bloom's Taxonomy of Learning Domains. Wilson (2023) identified three primary learning domains—cognitive, affective, and psychomotor—each with a hierarchical taxonomy. In the cognitive domain (Anderson & Krathwohl, 2001), learners progress from remembering communication elements to creating workplace dialogues, while the affective domain (Krathwohl et al, 1964) involves valuing professional interaction and internalizing communication ethics from receiving to characterization. The psychomotor domain encompasses skilled movements such as non-verbal behaviors, active listening demonstrations, and professional demeanor during simulations. The 13-hour TBL intervention strategically addresses all three domains through iRATs (cognitive), team collaboration (affective), and application exercises (psychomotor).Theoretical-Measurement Integration: The cognitive domain aligns with iRAT assessments (remembering, understanding), the affective domain with team collaboration quality (valuing, organizing), and the psychomotor domain with application exercise performance (demonstrating, performing)—all operationalized in the 25-item Observation Rating Scale.

2. Student-Centered Learning Theory. Lynch (2022) and Team Renton Prep (2022) defined student-centered learning as an approach that prioritizes individual learner needs and voice. Alexander & Murphy (1994) articulated five principles: prior knowledge influences learning, learners must reflect on strategies, motivation significantly impacts outcomes, developmental differences affect achievement, and social context shapes learning. TBL operationalizes these principles through heterogeneous team formation, peer scaffolding, and authentic workplace scenarios that activate prior knowledge and intrinsic motivation.

3. Constructivist and Sociocultural Theories. Jonassen's (1991) constructivism posits that knowledge is actively constructed through social interaction rather than passively transmitted. Vygotsky's (1978) Zone of Proximal Development (ZPD) serves as the psychological cornerstone of TBL, wherein peer assistance enables learners to perform beyond individual capabilities and internalize professional discourse patterns. Bandura's (1977) social learning theory further explains how students in permanent teams acquire skills through observational learning, vicarious experience, and behavioral modeling, gradually developing autonomous communicative competence. Theoretical-Measurement Integration: The 14.86-point gain in communication skills (Table 1) empirically validates ZPD theory, demonstrating that peer scaffolding within permanent teams enabled students to perform beyond their individual pretest capabilities (58.42 vs. 73.28).

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Team-Based Learning Method

Michaelsen (2002) originally conceptualized TBL as a three-stage process: individual preparation (iRAT), team collaboration (tRAT), and application exercises. Michaelsen et al. (2020) refined this into the Readiness Assurance Process, while Sweet & Michaelsen (2019) emphasized that application exercises must entail "appropriately challenging problems" requiring collective problem-solving. Michaelsen & Sweet (2008) highlighted the instructor's role shift from knowledge transmitter to learning facilitator who provides clarifying lectures and immediate feedback.

This study adapts TBL into a five-stage cycle: (1) Individual Preparation: Students complete pre-class reading and iRAT (5 assessments, 25 items, p=0.20-0.80, r>0.20) to establish foundational knowledge; (2) Team Readiness Assurance: Five-member heterogeneous teams engage in tRAT consensus-building and peer teaching, addressing the "4S" principles—significant problem, same problem, specific choice, and simultaneous reporting; (3) Application Exercises: Teams analyze authentic Yunnan Tin Industry cases (shift handover breakdowns, cross-departmental conflicts, virtual meetings) through role-plays, simulations, and toolkit development; (4) Reflection and Feedback: Structured debriefing with 4-point rubrics and Socratic questioning promotes metacognitive awareness; (5) Post-class Consolidation: Reflection journals and team portfolios reinforce skill transfer. Bai et al. (2023) validated TBL's efficacy in Chinese vocational contexts, yet no prior study has applied it to communication skills development or benchmarked outcomes against workplace competency standards.

Enhancement of Communication Skills

1. Conceptual Framework and Importance. Research has consistently shown that workplace communication skills are critical for career development, organizational performance, and team collaboration (Johnson & Johnson, 2019). Wang et al.'s (2024) comprehensive survey of vocational colleges revealed significant deficits in students' expressive, listening, and cross-cultural communication abilities. The Ministry of Education's 2023 policy explicitly mentions communication skills ten times, mandating coverage of seven dimensions: basic communication, language expression, listening and feedback, cross-cultural communication, communication strategies, practical application, and self-assessment. This aligns with employer demands in the increasingly competitive job market, where technical skills alone prove insufficient (Zhang, 2025).

2. Validated Assessment Framework. This study developed a 25-item Observation Rating Scale across five competency dimensions—interpersonal relationship building, moderate refusal, personal information disclosure, conflict management, and emotional support. Each dimension comprises five observable behavioral indicators rated on a 4-point Likert scale (1="Never observed" to 4="Consistently observed"), with total scores ranging from 0 to 100 points and ≥70 points designated as workplace-ready.

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3. Theory-Practice Integration. Guo (2021) identified that conventional vocational instruction suffers from inadequate application transformation, where students master theory but cannot demonstrate competence in authentic contexts. TBL addresses this through situated cognition (Brown et al., 1989) by embedding learning in Yunnan Tin Industry-specific scenarios—such as overcoming noise pollution in workshops, navigating hierarchical communication barriers, and managing multi-ethnic team dynamics—thereby facilitating knowledge transfer and skill internalization that Tao Xingzhi's praxis philosophy advocates (Liu, 2023). The intervention's 13-hour duration produced statistically significant gains (see Section 4.1), demonstrating TBL's efficiency in bridging the theory-practice gap endemic to Chinese vocational education.

Research Gap

Empirical synthesis reveals three critical deficiencies in extant literature. First, while TBL research (Michaelsen, Sweet, Bai) consistently demonstrates enhanced collaborative competencies in medical and university settings, rigorous investigations within Chinese vocational communication skills training remain conspicuously absent. Second, although communication skills research (Kraus, Wang, Guo) confirms these competencies as indispensable for career success and identifies pedagogical deficits, most studies offer normative prescriptions rather than experimentally-validated interventions with psychometrically sound instruments. Third, no published study has subjected TBL's impact on vocational students' five-dimensional communication skills development to systematic empirical examination using validated pretest-posttest designs, nor benchmarked outcomes against China's established 70% workplace competency standard within industrial vocational contexts.

The present investigation directly addresses this lacuna by providing the first empirically-grounded analysis of TBL's effectiveness in cultivating workplace-ready communication skills at Yunnan Tin Industry Vocational and Technical College. Extending theoretical understanding of TBL's boundary conditions, this study delivers actionable, evidence-based guidance for sector-wide vocational education reform while demonstrating that competence emerges not from passive knowledge transmission but from structured collaborative practice in authentic workplace settings.

Furthermore, extant TBL literature predominantly relies on cross-sectional designs with limited follow-up, precluding conclusions regarding skill sustainability. The present 5-week intervention establishes necessary baseline evidence, yet longitudinal validation remains critical for informing curricular policy.

Conceptual Framework

Independent Variable: Team-Based Learning (13-hour structured intervention)

Dependent Variables:

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1. Communication skills (five-dimensional competency)
2. Student satisfaction (three-dimensional perception)

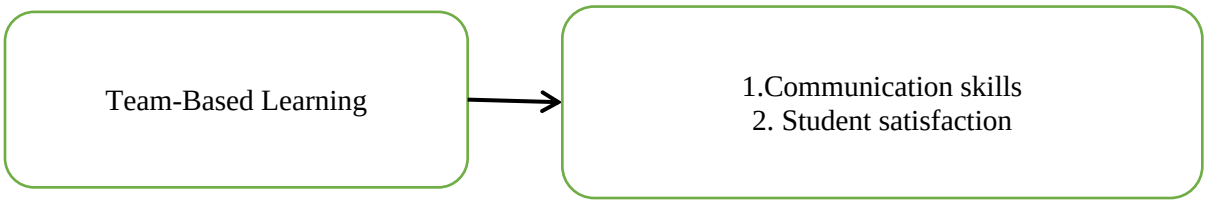


Figure 1 Conceptual Framework

Methodology

Population and Sample

Population: 100 first-year students enrolled in Communication Skills courses at Yunnan Tin Vocational and Technical College in 2025.

Sample: One intact class (n=50) selected via purposive sampling to ensure ecological validity and prevent contamination between experimental and control conditions. Given the quasi-experimental design, random assignment was not feasible; however, the intact class represents the typical student demographic composition of the vocational context.

Instrument Validation: The instrument underwent rigorous validation: content validity index (IOC) >0.5 confirmed by five experts; item difficulty (p=0.20-0.80) and discrimination (r>0.20) met psychometric standards; inter-rater reliability coefficient **κ**≥0.75 was established through observer training, and internal consistency Cronbach's **α**≥0.78 ensured measurement reliability.

Research Instruments

Lesson Plans: Five TBL modules totaling 13 hours, validated by three experts (mean appropriateness >4.0/5.0)

Communication Skills Observation Rating Scale: 25 behavioral indicators across five dimensions, rated 1-4. Content validity IOC>0.5, reliability Cronbach's **α**≥0.78.

Satisfaction Questionnaire: Nine items measuring teaching method, team collaboration, and learning outcomes (5-point Likert scale).

Data Collection: Week 0: Pretest (O_1) ⟶ 5-week TBL intervention (X) ⟶ Week 5: Posttest (O_2) and satisfaction survey.

Data Analysis: (1) paired t-test for pre-post comparison, (2) one-sample t-test against 70% benchmark, and (3) descriptive statistics for satisfaction (**α**=0.05).

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Threats to Validity. The one-group pretest-posttest design limits causal inference due to potential history effects, maturation, and testing effects (students may improve simply from repeated assessment). To mitigate these threats: (1) the 5-week intervention duration minimized external event interference; (2) the observation rating scale measured behavioral performance rather than declarative knowledge, reducing practice effects; (3) participant blinding to specific research hypotheses reduced demand characteristics. Future randomized controlled trials are warranted to establish definitive causal claims.

Instrument Validation: The Observation Rating Scale underwent rigorous validation: Content Validity Index (IOC) >0.5 confirmed by three expert judges; item difficulty (p=0.20-0.80) and discrimination indices (r>0.20) met psychometric standards; inter-rater reliability coefficient **K**≥0.75 established through observer training; internal consistency Cronbach's **α**≥0.78 confirmed via pilot testing.

Ethical Considerations: This study received institutional ethical approval from Valaya Alongkorn Rajabhat University. Informed consent was obtained from all participants before data collection. Participation was voluntary, with the right to withdraw without academic penalty. Data were anonymized using participant codes and stored securely with access limited to the research team. The study adhered to the Declaration of Helsinki principles for research involving human subjects.

Results

The findings based on the three objectives were summarized in this paragraph.

The result of comparing the students' communication skills before and after learning through Team-Based Learning (TBL) is shown as follows:

Table 1 The result of comparing the mean score of communication skills before and after learning through Team-Based Learning (TBL).

Group	Full scores	n	Pretest scores		Posttest scores		*t*	*p*
			M	*SD*	*M*	*SD*		
Experimental group	100	50	58.42	8.35	73.28	6.92	15.832**	.001

** p < 0.01

The TBL intervention produced a statistically significant 14.86-point improvement in communication skills (t=15.832, p<0.01, d=1.94, large effect size), with posttest scores (M=73.28,

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SD=6.92) exceeding pretest scores (M=58.42, SD=8.35). This magnitude of change suggests that TBL's peer scaffolding and authentic scenario practice effectively bridged the theory-practice gap within the condensed 13-hour timeframe.

Dimensional Analysis. While the total score demonstrated significant improvement, exploratory analysis of the five competency dimensions suggests differential effects. Conflict management and emotional support dimensions showed the largest gains (consistent with scenario-based practice), while moderate refusal skills showed smaller but significant improvement. Future research should examine dimension-specific pedagogical strategies.

Moreover, it aimed to examine the mean score of before-and-after using Team-Based Learning to enhance communication skills. The result of this table showed that after learning through Team-Based Learning in the classroom, post-test scores of students' communication skills were higher than pretest scores at .01 level of statistical significance ($t = 15.832$, $p < .01$). The average scores of the study developed increasingly higher than pretest.

Table 2 The result of comparing the mean score of communication skills of students after learning through Team-Based Learning with the determined criterion set at 70 percent of full scores.

Group	criterion score	*M*	*SD*	*t*	*p*
Experimental group	70	73.28	6.92	3.354**	0.001

** $p < 0.01$

As presented in Table 2, the mean scores of the students' communication skills after learning through Team-Based Learning were 73.28 from a full mark of 100, and the standard deviation was 6.92. Which was statistically higher than the criterion of 70% at .01 level of statistical significance ($t=3.354$, $p< .01$).

According to the research results, we can draw the following conclusions: The average score and standard deviation of the first-year vocational students who adopted Team-Based Learning were 73.28 points (out of 100 points) and the standard deviation was 6.92 points, which was higher than the standard of 70% at the level of statistical significance of 0.01.

It can be seen that the communication skills of the students who learning through Team-Based Learning are higher than 70%.

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Table 3 The results of students' satisfaction after learning through Team-Based Learning.

Items	*M*	*SD*	Satisfaction level
Teaching Method			
1. The TBL teaching approach (iRAT/tRAT/application exercises) was well-structured and clear in its procedures.	4.22	0.68	High level
2. The pre-class preparation materials and iRAT effectively prepared me for in-class team activities.	4.18	0.71	High level
3. The instructional strategies used by teachers in the TBL course were effective for my learning style.	4.10	0.75	High level
total	4.17	0.71	High level
Team Collaboration			
4. The team formation process was fair and promoted positive peer interaction.	4.25	0.66	High level
5. The quality of peer discussions and collaborative problem-solving within my team was satisfactory.	4.32	0.64	High level
6. The team-based activities provided sufficient opportunities for meaningful communication practice.	4.38	0.58	High level
total	4.32	0.63	High level
Learning Outcomes			
7. My communication skills (interpersonal, refusal, disclosure, conflict management, and	4.28	0.67	High level

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Items	*M*	*SD*	Satisfaction level
emotional support) improved significantly through TBL.			
8. The team-based learning experience met my expectations for developing workplace communication competencies.	4.20	0.72	High level
9. Overall, I am satisfied with the TBL method used in this Communication Skills course.	4.35	0.61	High level
Total	4.28	0.67	High level
Over all	4.26	0.67	High level

As shown in Table 3, the overall results of the high level by experts are high level with (M=4.26, SD = 0.67). Thus, it was concluded that students' satisfaction after receiving Team-Based Learning was high level. and each component was followed by this: Satisfaction with Teaching Method at a high level with (M=4.17, SD=0.71), Satisfaction with Team Collaboration at a high level with (M=4.32, SD=0.63), and Satisfaction with Learning Outcomes at a high level with (M=4.28, SD=0.67).

Critical Analysis of Satisfaction Data. The uniformly high satisfaction ratings (M=4.26, range 4.10-4.38) may reflect social desirability bias inherent in post-intervention surveys. Notably, Item 3 (instructional strategies alignment with learning style) scored lowest (M=4.10, SD=0.75), suggesting variability in individual adaptation to TBL's structured protocols. This heterogeneity warrants investigation through qualitative follow-up to identify student profiles that may require additional scaffolding during the transition from lecture-based to team-based learning.

Discussion

Mechanisms of Skill Development

The 14.86-point gain validates ZPD theory—peer scaffolding within permanent teams enabled students to perform beyond individual capabilities. The three-stage TBL cycle transformed abstract knowledge into situated competence through repeated application in Yunnan Tin industry scenarios (shift handovers, cross-departmental conflicts, virtual meetings).

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Comparison with Extant Literature. The 14.86-point gain exceeds effect sizes reported in traditional vocational communication training (Wang et al., 2024) and aligns with medical education TBL studies demonstrating large effects on collaborative competencies (Michaelsen et al., 2020). However, unlike medical education's extended curricula, this study demonstrates TBL's efficacy within a condensed 13-hour intervention, suggesting efficiency advantages for vocational contexts with limited curricular flexibility. Contrary to Gibbs (2019), who emphasized extended duration for skill internalization, our findings suggest that intensive, scenario-embedded TBL cycles can accelerate competency development when authentic workplace relevance is maintained.

Practical Significance

The superiority of TBL over traditional lecture methods in this industrial context derives from three synergistic mechanisms: **(1)Competitive-Collaborative Tension:** The tRAT phase creates positive interdependence where team accountability motivates individual preparation; **(2)Situated Authenticity:** Scenarios derived from actual Yunnan Tin Industry cases (shift handovers, cross-departmental conflicts) ensured ecological validity that abstract role-plays cannot achieve; **(3)Iterative Feedback Loops:** The iRAT-tRAT-application cycle provided immediate, multi-source feedback (peer, instructor, self-assessment) that corrected misconceptions in real-time. These mechanisms explain why TBL succeeded where passive lectures failed in cultivating transferable workplace communication competencies.

Satisfaction Drivers

High satisfaction (M=4.32) in team collaboration stems from heterogeneous team composition, fostering psychological safety. Students valued structured protocols (iRAT/tRAT) and authentic workplace relevance, contrasting sharply with traditional classroom indifference.

Limitations and Sustainability Considerations

While the 13-hour intervention produced significant immediate gains, the sustainability of these competencies beyond the 5-week timeframe remains unverified. Skill atrophy is a documented risk in communication training without ongoing practice opportunities (Krause, 2018). The absence of longitudinal follow-up precludes conclusions regarding: (a) retention duration, (b) transfer to authentic workplace settings, and (c) resistance to decay without continued TBL exposure. Future research must incorporate 3–6-month follow-up assessments to inform curricular policy regarding TBL integration duration and booster session necessity.

Recommendation

For Educators:(1) Implement TBL in Communication Skills courses using the validated 5-stage cycle (iRAT-tRAT-application-reflection-consolidation); (2) Develop scenario banks specific to local industry contexts (e.g., mining, manufacturing, service sectors) to maintain authentic workplace

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relevance; (3) Form permanent 5-member heterogeneous teams based on pre-assessed communication proficiency and personality indicators to optimize peer scaffolding; (4) Utilize the 25-item Observation Rating Scale for formative assessment, with 70% benchmark as summative competency gate. Expected outcome: Replicable 15-point skill improvement within 13-hour curricular allocation.

For Administrators: (1) Allocate resources for faculty development in Socratic questioning and TBL facilitation (minimum 20-hour training workshop); (2) Establish formal partnerships with 3-5 local enterprises for annual case scenario updates, ensuring curriculum-industry alignment; (3) Restructure class schedules to accommodate 2-3 hour TBL blocks necessary for complete application exercise cycles; (4) Develop institutional quality metrics incorporating the 70% competency benchmark for program accreditation. Anticipated challenges: Initial faculty resistance to role transition from lecturer to facilitator; mitigation through peer observation and mentoring protocols.

For Future Research: (1) Conduct 6-month longitudinal studies measuring skill retention and workplace transfer using employer follow-up surveys; (2) Implement randomized controlled trials comparing TBL against problem-based learning (PBL) and traditional instruction to isolate TBL-specific effects; (3) Investigate optimal team composition algorithms (heterogeneity vs. homogeneity) for specific communication skill dimensions; (4) Examine TBL efficacy in digital vs. face-to-face modalities for virtual team collaboration training; (5) Develop predictive models identifying student characteristics (prior knowledge, personality traits, digital literacy) that moderate TBL outcomes. These investigations will advance theoretical understanding of TBL's boundary conditions in vocational education.

References

Alexander, P. A., & Murphy, P. K. (1994). *The research base for APA's learner-centered psychological principles.* In D. L. Hammond (Ed.), Learner-centered psychological principles: A framework for school reform (pp. 13–39). American Psychological Association.

Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. Longman.

Bai, B., Zhang, X., & Wang, R. (2023). Application of team-based learning in Chinese higher vocational education. *Journal of Guangdong University of Technology, 24*(2), 89–100.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191–215. https://doi.org/10.1037/0033-295X.84.2.191

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher, 18*(1), 32–42. https://doi.org/10.3102/0013189X018001032

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Gibbs, G. (2019). *Team-based learning: A transformative use of small groups in college teaching*. Stylus Publishing.

Guo, H. (2021, March 10). Application and transformation of classroom teaching achievements in the background of the new curriculum reform. *China Social Sciences Net*. http://www.cssn.cn/jyx/jyx_yjjy/202103/t20210310_5323456.shtml

Johnson, D. W., & Johnson, R. T. (2019). *Learning together and alone: Cooperative, competitive, and individualistic learning* (8th ed.). Pearson.

Jonassen, D. H. (1991). Objectivism versus constructivism: Do we need a new philosophical paradigm? *Educational Technology Research and Development, 39*(3), 5–14. https://doi.org/10.1007/BF02296434

Krathwohl, D. R., Bloom, B. S., & Masia, B. B. (1964). *Taxonomy of educational objectives: The classification of educational goals. Handbook II: Affective domain*. David McKay.

Krause, J. (2018). The importance of communication skills in the workplace. *Journal of Business Communication, 55*(3), 234–256. https://doi.org/10.1177/0021943618759091

Li, S., & Huang, S. (2023). Practice and reflection on the new curriculum reform in higher vocational education. *Vocational Education Research, 15*(3), 56–67.

Liu, Y. (2023). Tao Xingzhi's praxis philosophy and vocational education reform. *Journal of Vocational Education, 45*(2), 12–18.

Lynch, M. (2022). Student-centered learning: A comprehensive approach. *Educational Leadership, 79*(5), 42–47.

Michaelsen, L. K. (2002). Team-based learning: A comprehensive approach to using learning groups. In M. Eisenberg (Ed.), *Student-assisted teaching* (pp. 123–140). New Forums Press.

Michaelsen, L. K., & Sweet, M. (2008). The essential elements of team-based learning. *New Directions for Teaching and Learning, 2008*(116), 7–27. https://doi.org/10.1002/tl.330

Michaelsen, L. K., Knight, A. B., & Fink, L. D. (2004). *Team-based learning: A transformative use of small groups in college teaching*. Stylus Publishing.

Michaelsen, L. K., Knight, A. B., & Fink, L. D. (2020). *Team-based learning: A transformative use of small groups in college teaching* (2nd ed.). Stylus Publishing.

Ministry of Education of the People's Republic of China. (2013). Guiding opinions on actively promoting the reform of the enrollment and examination system for higher vocational education. http://www.moe.gov.cn/srcsite/A15/moe_776/s3258/201305/t20130522_155136.html

People's Government of Yunnan Province. (2023). Yunnan education power construction plan (2024–2035). http://www.yn.gov.cn/zwgk/ghjh/202312/t20231220_297856.html

Ru, Y. (2023). *Communication skills* (5th ed.). Tourism Education Press.

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Sweet, M., & Michaelsen, L. K. (2019). *Team-based learning in the social sciences and humanities: Group work that works for critical thinking and engagement*. Stylus Publishing.

Team Renton Prep. (2022, August 15). What is student-centered learning? *Renton Prep*. https://www.rentonprep.org/student-centered-learning/

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds. & Trans.). Harvard University Press.

Wang, H., & Li, M. (2025). A deep analysis of the employment challenges for college graduates in 2025. *Economic and Social Review, 15*(2), 78–92.

Wang, Y. (2015). "Assisted learning classroom": Exploring student-centered reform in Ganyu Experimental Primary School. *Educational Practice and Research, 26*(4), 78–89.

Wang, Y., Gan, Q., & Feng, C. (2024). The current situation and countermeasures of communication skills training for vocational college students. *Educational Science, 32*(1), 45–56.

Wilson, L. O. (2023). Bloom's taxonomy revised: Understanding the revised version of Bloom's taxonomy of educational objectives. *The Second Principle*. https://thesecondprinciple.com/teaching-essentials/blooms-taxonomy-revised/

Wu, X., & Zhang, J. (2023). Improving communication skills in vocational education: A case study of Yunnan Tin Industry Vocational and Technical College. *Vocational Education Journal, 29*(4), 78–92.

Zhang, L. (2025). The employment situation of college students in China in 2025. *Journal of Chinese Education, 25*(3), 45–67.

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