

RESEARCH ARTICLE

COOPERATIVE LEARNING IN HIGH SCHOOL ENGLISH WRITING CLASSES: AN INVESTIGATION OF IMPLEMENTATION, OUTCOMES, AND MEDIATING FACTORS IN A MULTI-ETHNIC CONTEXT-A CASE STUDY OF MINZU MIDDLE SCHOOL OF PU'ER, CHINA

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Abstract: Writing proficiency remains a persistent challenge in senior high school English education, particularly in linguistically diverse regions where students navigate multiple language systems. While cooperative learning (CL) has been theorized to enhance writing development through peer scaffolding and collective problem-solving, its application in multi-ethnic, heterogeneous proficiency contexts remains underexplored. This mixed-methods study investigates the interplay between CL implementation, writing outcomes, and mediating pedagogical factors at Minzu Middle School of Pu'er, Yunnan Province, China. Data were collected through questionnaires (n=92), semi-structured interviews with four participants, and analysis of ten writing samples over three months. Findings indicate that CL positively influences students' writing attitudes, with mean scores above 3.60 on a 5-point scale across most dimensions. However, a notable disparity emerges: while CL enhances macro-level writing features such as structural organization (M improvement=2.7 points) and content development (M=1.8 points), its impact on micro-level linguistic accuracy remains limited (M=0.5 points). This differential effect is attributed to group interaction patterns that prioritize ideational exchange over grammatical precision, compounded by persistent challenges of unequal participation, limited teacher scaffolding, and assessment mechanisms that fail to capture individual contributions. The study contributes empirical evidence to the theoretical understanding of cooperative learning in EFL contexts, demonstrating that CL's benefits are domain-specific rather than uniform. Practical recommendations include dynamic grouping strategies, integrated language-focused instruction, and diversified evaluation systems that balance product and process assessment.

Keywords: *Cooperative learning, English writing instruction, Mixed-methods research, Multi-ethnic education, Writing development.*

Article Received: 09 July 2026

Revised: 18 July 2026

Accepted: 26 July 2026

INTRODUCTION

Research Background

Writing constitutes one of the most cognitively demanding skills in English as a Foreign Language (EFL) learning, requiring integrated competence in lexical knowledge, syntactic control, organizational coherence, and critical thinking (Teng, 2020). In Chinese senior high schools, the traditional writing classroom has historically followed a teacher-centered model characterized by lecture-based instruction, model text analysis, and individual composition practice. While this approach ensures curriculum coverage, it often restricts student participation, limits

opportunities for meaningful interaction, and fails to cultivate sustained writing motivation (Wei & Tang, 2015).

The Chinese Ministry of Education's New Curriculum Standards for Senior High School English (2017, revised 2020) explicitly advocates for student-centered methodologies that foster autonomous learning, collaborative skills, and communicative competence. In response, cooperative learning has emerged as a pedagogically sound alternative that aligns with these reform objectives. By structuring students into small

groups with shared goals and individual accountability, CL creates conditions for peer scaffolding, idea exchange, and collective problem-solving (Johnson & Johnson, 1989; Kagan, 1994). The theoretical rationale draws on Social Interdependence Theory, which posits that positive interdependence among group members—the recognition that individual success depends on collective effort—generates promotive interaction patterns that enhance learning outcomes (Deutsch, 1949; Johnson & Johnson, 1989).

Complementarily, Motivation Theory (Deci & Ryan, 1985) suggests that CL satisfies learners' basic psychological needs for autonomy, competence, and relatedness, thereby reducing language anxiety (Wang, 2002) and enhancing intrinsic motivation.

Despite the theoretical appeal and growing research interest in CL applications, significant contextual gaps persist. Most existing studies have been conducted in urban or well-resourced educational settings, with limited attention to ethnic minority regions where students face unique challenges, including multilingual backgrounds, varying English proficiency levels, and culturally distinct learning traditions.

Pu'er City, located in Yunnan Province, is home to multiple ethnic groups—including Han, Dai, Hani, Yi, and Lahu—and Minzu Middle School serves a student population that reflects this demographic complexity. Understanding how CL functions in such contexts is essential for developing culturally responsive and contextually appropriate pedagogical practices.

Research Objectives

This study aims to systematically investigate the interplay between cooperative learning

implementation and English writing development in a multi-ethnic high school context, utilizing Social Interdependence Theory and Motivation Theory as the guiding analytical lenses. Specifically, the study seeks to:

- Ascertain the current pedagogical practices and structural features of cooperative learning in writing classes, identifying how the core elements of positive interdependence are operationalized;
- Examine the differential effects of cooperative learning on students' writing performance, distinguishing between higher-order concerns (content, organization) and lower-order concerns (grammar, vocabulary), as well as its impact on motivational and emotional engagement;
- Identify the contextual and pedagogical constraints (e.g., participation equity, teacher mediation, and assessment misalignment) that inhibit the cognitive and linguistic benefits of cooperative learning;
- Synthesize evidence-based recommendations to refine the implementation model, specifically addressing the linguistic diversity and heterogeneous proficiency levels characteristic of ethnic minority classrooms.

Research Questions

To advance beyond mere description and address theoretical gaps, the study is guided by one unifying overarching research question: How does the dynamic interplay between group interdependence, individual accountability, and classroom-based teacher mediation shape the writing development of multi-ethnic high school students?

Table 1: The following specific research questions operationalize this overarching inquiry.

Research Question	Theoretical Rationale	Data Sources
RQ1: How are the five core elements of cooperative learning (positive interdependence, promotive interaction, individual accountability, social skills, and group processing) currently enacted in high school English writing classrooms?	Descriptive-foundational. Establishes baseline implementation against the theoretical ideal (Johnson & Johnson, 1989).	Questionnaires (Items 1-4, 6, 8-9, 14-15); Teacher Interviews

Research Question	Theoretical Rationale	Data Sources
RQ2: To what extent does participation in cooperative learning correlate with observable improvements in students' writing products, and is there a significant disparity between gains in <i>macro-structural</i> features (coherence/organization) versus <i>micro-linguistic</i> features (accuracy/cohesion)?	Analytical-outcome. Tests the theoretical assumption that CL promotes higher-order cognitive processing before lower-order accuracy.	Writing Sample Analysis; Questionnaire (Items 10-13, 19-20)
RQ3: What are the salient social and cognitive challenges (e.g., uneven participation, cognitive load distribution, surface-level processing) that undermine the efficacy of cooperative learning in this specific multi-ethnic context?	Diagnostic. Identifies “negative interdependence” or motivational obstacles within group dynamics.	Student Interviews; Open-ended Questionnaire Items (5,7, 16-18)
RQ4: How do teachers and students perceive the adequacy of current scaffolding and assessment mechanisms, and what adaptive strategies can optimize the collaborative writing process for heterogeneous proficiency groups?	Applied-constructive. Links findings to pedagogical design, addressing “free-riding” and “hitchhiking” phenomena.	Teacher Interviews; Student Suggestions (Items 19-20)

Research Significance

This study contributes to the field in three meaningful ways. Theoretically, it extends the existing literature on cooperative learning by examining its application in an under-researched ethnic minority context, thereby addressing the contextual limitations identified in prior studies (Han, 2023; Deng, 2024). By distinguishing between macro-structural and micro-linguistic effects, the research provides nuanced evidence that challenges the assumption of uniform CL benefits. The mixed-methods design enables triangulated evidence that enriches understanding of both the outcomes and processes of CL implementation.

Practically, the findings offer concrete recommendations for English teachers in similar contexts who seek to implement cooperative learning effectively. By identifying specific challenges, such as participation inequality and evaluation gaps, and proposing targeted solutions, this research bridges the gap between pedagogical theory and classroom practice. Additionally, the study provides insights for curriculum developers and school administrators interested in fostering collaborative learning environments in linguistically diverse settings.

LITERATURE REVIEW

Theoretical Foundations

Social Interdependence Theory

Social Interdependence Theory, initially formulated by Deutsch (1949) and subsequently elaborated by Johnson and Johnson (1989), provides the primary theoretical framework for understanding cooperative learning. The theory posits that the structure of interdependence among group members determines their interaction patterns and, consequently, their learning outcomes. Three types of interdependence are identified: positive (cooperative), negative (competitive), and neutral (individualistic).

Positive interdependence occurs when group members recognize that their success depends on the collective effort of the group, creating conditions for mutual support, resource sharing, and collaborative problem-solving. Johnson and Johnson (1989) identified five essential elements for effective cooperation: (a) positive interdependence, (b) individual accountability, (c) promotive interaction, (d) development of social skills, and (e) group processing. These elements distinguish structured cooperative learning from mere group work, emphasizing the need for deliberate instructional design.

From this theoretical perspective, cooperative learning requires more than simply placing students in groups; it necessitates careful planning to ensure that each element is systematically integrated into the learning activity. In writing instruction, this translates to tasks that require collective brainstorming, collaborative drafting, peer revision, and group reflection, with clear roles and accountability mechanisms.

Motivation Theory

Motivation Theory offers a complementary lens for understanding the effectiveness of cooperative learning. According to self-determination theory (Deci & Ryan, 1985), intrinsic motivation is enhanced when three basic psychological needs are satisfied: autonomy, competence, and relatedness. Cooperative learning addresses these needs by providing students with choices within structured frameworks, opportunities to demonstrate competence through peer interaction, and meaningful social connections.

Research has demonstrated that cooperative learning reduces language learning anxiety (Wang, 2002) and increases students' sense of belonging and engagement. In the writing context, peer support can alleviate the fear of making errors, encourage risk-taking in language use, and foster a positive effect toward writing tasks. Additionally, the shared goal structure creates positive outcome expectations, as students perceive that their individual efforts contribute to collective success.

International Research on Cooperative Learning

International scholarship on cooperative learning has evolved through three distinct phases. The foundational period (1970s-1990s) established the theoretical and empirical basis for CL. Slavin (1990) emphasized the importance of group rewards and individual accountability, while Kagan (1994) developed structured cooperative learning structures applicable across content areas. Johnson and Stanne's (2000) meta-analysis of 164 studies found that cooperative learning consistently outperformed individualistic and competitive approaches across diverse outcome measures.

The early 2000s witnessed increased attention to cognitive mechanisms underlying CL effectiveness. Researchers began

examining metacognitive processes, finding that cooperative learning can enhance students' awareness of their own thinking and writing strategies (Teng, 2020). More recent studies (post-2010) have focused on implementation challenges and contextual adaptations. For instance, Alrayah (2018) demonstrated the positive effects of CL on EFL learners' oral fluency and writing coherence, while Celik (2013) identified common problems in CL implementation, including unequal participation and time management difficulties.

Contemporary research has also explored technology-mediated cooperative writing, peer feedback literacy (Dong et al., 2023), and the integration of CL with other pedagogical approaches such as genre-based instruction and process writing. Despite this wealth of research, the application of CL in multilingual, multi-ethnic educational contexts remain under-explored, particularly in non-Western settings.

Domestic Research on Cooperative Learning in China

Chinese research on cooperative learning in EFL writing has followed a trajectory similar to international trends, though with some context-specific emphases. The first stage (pre-2015) focused primarily on validating the effectiveness of CL in improving writing scores (Deng, 2024; Li, 2024). These studies typically employed quasi-experimental designs comparing CL classes with traditional instruction classes, generally confirming positive effects on writing achievement.

The second stage (2016-2020) witnessed increasing methodological sophistication, with researchers examining specific CL strategies and task types. For example, Han (2023) investigated the application of cooperative learning in writing instruction, identifying both benefits and challenges. Han (2023) also examined "cooperative continuation" tasks, finding that collaborative story-completion activities enhanced both writing fluency and grammatical accuracy. This phase saw increased attention to peer feedback processes, with researchers exploring how group dynamics influence the quality and uptake of peer suggestions.

The third stage (post-2020) has been characterized by a "problem-solving"

orientation, addressing specific implementation challenges. Ma (2022) investigated how cooperation awareness influences peer feedback effectiveness, while Ye (2024) conducted action research on CL implementation, documenting iterative improvements. Tian (2022) examined the application of group cooperative learning in writing, identifying challenges related to grouping, task design, and evaluation.

Despite this growing body of research, significant gaps remain. Firstly, few studies have been conducted in ethnic minority areas, where students' multilingual backgrounds and varying English proficiency levels create unique implementation conditions. Secondly, existing research tends to focus on outcome

measures rather than the processes through which CL achieves its effects. Thirdly, there is limited attention to how teachers can adapt CL strategies to local conditions, including resource constraints and student characteristics.

Research Gap and Contribution

This study addresses the identified research gaps by examining cooperative learning implementation in an ethnic minority school context in Pu'er, Yunnan Province. By employing a mixed-methods design that captures both outcomes and processes, the research provides a holistic understanding of CL effectiveness. The conceptual framework (Figure 1) illustrates how the study bridges theory, implementation, and outcomes.

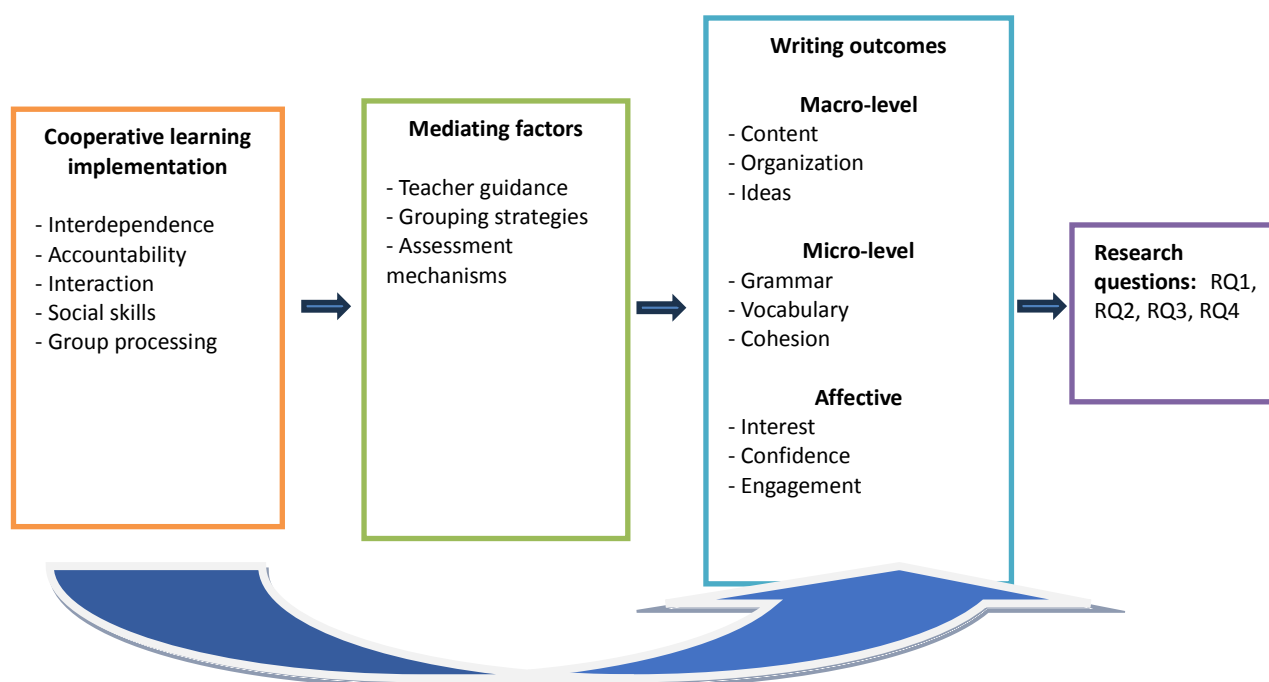


Figure 1: Conceptual Framework illustrating relationships among CL implementation, mediating factors, and writing outcomes

RESEARCH DESIGN

Research Context and Participants

The study was conducted at Minzu Middle School of Pu'er, a public senior high school in Pu'er City, Yunnan Province, China. The school serves a diverse student population representing multiple ethnic groups, including Han, Dai, Hani, Yi, and Lahu. This diversity creates a unique learning environment where students bring different linguistic backgrounds and cultural experiences to the English classroom.

The participants comprised 100 Grade 11 students from two intact classes and one English teacher who was in charge of the two classes' English instruction. Each class had approximately 50 students. A stratified approach was adopted for sampling, with students grouped according to their English proficiency levels (high, medium, low) based on previous semester examination scores. This stratification ensured representation across ability levels, enabling analysis of how CL affects learners with different linguistic backgrounds and competencies.

The participating teacher, a female educator with seven years of teaching experience, had received formal training in cooperative learning methods through school-based

professional development programs. Her experience and training made her an appropriate informant for examining CL implementation.

Table 2: Participant demographics

Participant Category	Number	Characteristics
Students (Questionnaire)	92 (valid responses)	Grade 11; ages 15-17; diverse ethnic backgrounds
Students (Interviews)	3	One with high proficiency, one with medium proficiency, one with low proficiency
Teacher (Interview)	1	7-year teaching experience; CL training completed
Writing Samples	10	5 from each class, representing different proficiency levels

Research Instruments

Three instruments were employed for data collection: writing tasks, semi-structured interviews, and questionnaires. The triangulation of these instruments enhanced the validity and reliability of the findings.

Writing Tasks

Two writing tasks were selected from the Senior High School Academic Proficiency Test materials to assess students' writing performance before and after the cooperative learning intervention, aiming to assess students' English accuracy, coherence, and organization. Task One is a News Report. The directions are that students write a news report about a school English drama festival with around 100 words. Task Two is an Application Letter with the directions that students write a formal application letter for a volunteer position at a flower exposition of about 100 words.

These tasks were selected because they represent the authentic writing genres encountered in the curriculum and assess multiple dimensions of writing ability: content development, organizational structure, linguistic accuracy, and textual coherence. The tasks were administered at the beginning of the study (pre-test) and after the three-month intervention period (post-test).

Ten writing samples were collected for detailed analysis (five from each class),

representing students at different proficiency levels. The samples were analyzed using an analytic rubric adapted from the Academic Proficiency Test scoring criteria, assessing four dimensions: content (0-30 points), structure (0-25 points), language accuracy (0-25 points), and coherence (0-20 points).

Semi-Structured Interviews

Semi-structured interviews were conducted with three students (one high-proficiency, one medium-proficiency, and one low-proficiency) and the English teacher. This format allowed for guided exploration of predetermined topics while enabling participants to raise emergent issues.

Student interviews explored perceptions of English writing, experiences in cooperative learning, group role distribution, writing concerns, and expectations for teacher support. Teacher interviews examined teaching practices, grouping strategies, perceptions of CL effectiveness, and implementation challenges. All interviews were conducted in Chinese, audio-recorded (with participant consent), and transcribed verbatim. Data were analyzed using thematic analysis (Braun & Clarke, 2006), with themes derived both deductively from the research questions and inductively from the data.

Questionnaire

A 20-item questionnaire was developed to survey students' perceptions of cooperative learning in English writing classes. Li (2024) noted that the Likert scale is well-suited for

quantifying subjective attitudes and behavioral tendencies, which fits this study's need to investigate cooperative learning's current application in writing classrooms.

Hence, the instrument employed a five-point Likert scale (1= strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree) and covered four dimensions aligned with the research framework:

Table 3: Questionnaire dimensional framework

Dimension	Items	Focus
Cognition and Attitudes (RQ1, RQ2)	1-4	Understanding of CL, preference for CL writing, desire for collaboration
Implementation Process (RQ1, RQ3)	6,8,9,14-15	Grouping methods, group stability, teacher support
Outcomes and Reflection (RQ2)	10,11,12-13,19-20	Perceived effects on writing, confidence, and feedback
Problems and Improvement (RQ3, RQ4)	5,7,16-18	Uneven participation, communication barriers, time constraints

The questionnaire was adapted from Han's (2023) validated instrument on cooperative learning in writing teaching and reviewed by two experienced English teachers for face validity. A pilot test with 20 students was conducted to check clarity and

comprehensibility, resulting in minor wording revisions. The results of reliability statistics showed that the value of Cronbach's Alpha for all 20 items was 0.898, indicating excellent internal consistency, which is listed below.

Table 4: Reliability analysis of the pilot research

Reliability Statistics	
Cronbach's Alpha	N of Items
.898	20

Following the pilot research, the questionnaires were distributed anonymously during class time to reduce social desirability bias and ensure honest responses. A total of 100 questionnaires were distributed, with 92 valid responses retained after screening (92% response rate).

Research Procedure

The study was conducted over three months (September to December 2025), following a sequential mixed-methods design.

Table 5: Research timeline

Phase	Timeframe	Activities
Phase 1: Preparation	Weeks 1-4	Literature review; Instrument development and piloting; Ethical approval
Phase 2: Data Collection	Weeks 5-8	Questionnaire distribution (Week 5); Pre-intervention writing samples (Week 6); Semi-structured interviews (Weeks 7-8); Ongoing CL intervention
Phase 3: Post-Intervention	Weeks 9-12	Post-intervention writing samples (Week 11); Data transcription and coding; Triangulation and analysis

Data Analysis

Data from the three instruments were triangulated to enhance validity.

Questionnaire data were analyzed using descriptive statistics (frequencies, percentages, means, and standard deviations) using SPSS 26.0. Responses were examined by dimension to identify patterns and central tendencies. Pre- and post-intervention writing scores were compared using paired-samples t-tests to determine statistical significance of improvements.

Interview transcripts were analyzed using thematic analysis (Braun & Clarke, 2006). The process involved: (a) familiarization with the data through repeated reading, (b) initial coding of meaningful units, (c) theme identification and refinement, (d) theme definition and naming, and (e) report writing. Codes were derived both deductively (from the research questions and theoretical framework) and inductively (from the data). The ten writing samples were scored by the researcher and a second rater (an experienced English teacher) using the analytic rubric. Inter-rater reliability was calculated using Cohen's Kappa ($\kappa = 0.82$), indicating strong agreement. Differences were resolved through discussion.

Ethical Considerations

Ethical approval was obtained from the school administration. All student participants and their English teachers agreed to participate. Participants were assured of confidentiality and their right to withdraw at any time. Data were anonymized and stored securely.

RESULTS

This section presents findings organized according to the four research questions. Data from the questionnaire (Q), interviews (I), and writing sample analysis (W) are integrated to provide a comprehensive picture.

RQ1: Current Implementation of Cooperative Learning Elements

Questionnaire results revealed students' perceptions of cooperative learning implementation across multiple dimensions. As shown in Table 5, students demonstrated moderate to high levels of understanding and positive attitudes toward CL.

Table 6: Students' perceptions of CL implementation (n=92)

Dimension	Item	Mean	SD
Cognition and Attitudes	1. Understanding of cooperative learning	3.90	0.799
	2. Preference for cooperative writing	3.99	0.749
	3. Desire for more cooperative opportunities	4.13	0.744
	4. Interest in practical writing	3.60	0.938
Implementation Process	6. Diversity of grouping forms	3.86	0.833
	8. Adjustment of group members	3.87	0.880
	9. Time for independent thinking	4.10	0.712
	14. Teacher feedback and suggestions	4.15	0.755
	15. Teacher's instructional guidance	4.16	0.730

The highest mean scores were observed for teacher-related items: instructional guidance ($M=4.16$, $SD=0.730$), teacher feedback ($M=4.15$, $SD=0.755$), and desire for more

cooperative opportunities ($M=4.13$, $SD=0.744$). Students also reported sufficient time for independent thinking ($M=4.10$, $SD=0.712$). These findings indicate that students

generally perceive the CL implementation positively and recognize teachers' supportive roles. However, relatively lower scores were observed for interest in practical writing ($M=3.60$, $SD=0.938$) and understanding of cooperative learning ($M=3.90$, $SD=0.799$), suggesting areas requiring further attention.

Interview data provided detailed information about the implementation process. The teacher described a typical CL writing lesson: "I usually begin with individual brainstorming, allowing students to generate their own ideas. Then they move into groups of four to share ideas and develop a group outline. After writing individually, they engage in peer revision before submitting the final version." [Teacher Interview]

Students generally expressed positive views about the structured process. A high-proficiency student noted: "The group discussion part is especially helpful. When I hear different ideas from classmates, it expands my thinking and gives me more content to write about." [Student Interview, S-H]

However, the teacher identified limitations in the current implementation: "Time is always the biggest constraint. We have only 45 minutes per lesson, and it's difficult to complete all stages of cooperative work effectively within this period." [Teacher Interview]

Accordingly, the five core CL elements are partially implemented. While positive interdependence through shared goals is evident, individual accountability and group processing mechanisms remain underdeveloped, primarily due to time constraints.

RQ2: Effects on Writing Ability and Learning Attitudes

Effects on Writing Attitudes

Questionnaire data revealed positive effects on students' attitudes toward English writing. As shown in Table 6, students reported moderate to high levels of engagement, confidence, and perceived improvement.

Table 7: Students' attitudes toward writing after CL implementation (n = 92)

Item	Mean	SD
10. Effectiveness of group communication	4.09	0.736
11. Improvement in writing scores	3.95	0.856
12. Focus on writing logic	3.98	0.784
13. Enhancement of writing confidence	3.88	0.862
19. More clear guidance from teachers on writing skills	4.12	0.709
20. Importance of teachers' evaluation on individual participation	4.26	0.709

The highest mean score was observed for Item 20 ($M=4.26$, $SD=0.709$), indicating that students strongly value teacher evaluation of individual participation in cooperative learning. Students also reported that CL enhanced their focus on writing logic ($M=3.98$, $SD=0.784$) and improved their writing scores ($M=3.95$, $SD=0.856$).

Interview data corroborated these findings. The medium-proficiency student expressed: "I used to feel very nervous when the teacher said we were going to write. But now, with group support, I feel more relaxed. I can ask

my group members when I don't know a word." [Student Interview, S-M]

The teacher observed attitudinal changes: "Students who used to be very quiet in writing class have become more active. Even students with weaker English abilities try to participate when they know they can get help from their group." [Teacher Interview]

Differential Effects on Writing Ability

Writing sample analysis demonstrated that cooperative learning had differential effects on various aspects of writing ability (see

Table 7). Paired-samples t-tests revealed statistically significant improvements in structural organization [$t(9) = 4.32, p < .01$] and content development [$t(9) = 2.89, p < .05$],

while improvements in language accuracy [$t(9) = 1.02, p > .05$] and textual coherence [$t(9) = 1.87, p > .05$] were not statistically significant.

Table 8: Writing performance Changes (maximum Score: 25 per aspect)

Writing Aspect	Pre-Mean	Post-Mean	Improvement	t-value	p-value
Content Development	12.4	14.2	+1.8	2.89	.018*
Structural Organization	13.8	16.5	+2.7	4.32	.002**
Language Accuracy	11.6	12.1	+0.5	1.02	.334
Textual Coherence	10.9	12.3	+1.4	1.87	.094

*Note: * $p < .05$; ** $p < .01$

The most substantial improvement was observed in structural organization (mean increase of 2.7 points). Students demonstrated improved ability to produce well-structured compositions with clear introduction, body paragraphs, and conclusion.

A high-proficiency student explained: “In group discussions, we compare different ways to organize our writing. I’ve learned that a good structure makes the article much clearer and easier to follow.” [Student Interview, S-H] Content development also showed moderate improvement (mean increase of 1.8 points), with students generating more ideas and supporting their arguments with details.

However, gains in language accuracy were minimal (mean increase of 0.5 points), with persistent spelling and grammatical errors. The teacher observed: “Students’ compositions are better organized than before, but the number of grammatical mistakes hasn’t decreased much.

They seem to focus more on ideas and structure during group work than on language.” [Teacher Interview]

Textual coherence improved moderately (mean increase of 1.4 points), with students using more cohesive devices and logical connectors. However, lower-proficiency students continued to struggle with coherence.

Consistently, CL positively influences macro-level writing features (content and organization) but has limited impact on micro-level linguistic accuracy and textual coherence, suggesting domain-specific rather than uniform benefits.

RQ3: Challenges in Cooperative Learning Implementation

Questionnaire and interview data converged to identify several significant challenges in CL implementation. Table 8 summarizes the descriptive statistics for problem-related items.

Table 9: Students' perceptions of CL challenges (n = 92)

Item	Mean	SD	Interpretation
5. Passivity in cooperation	3.01	1.084	Moderate agreement
7. Fixed group members	3.29	1.022	Moderate agreement
16. Limited student participation	3.17	1.075	Moderate agreement

Item	Mean	SD	Interpretation
17. Communication barriers	3.39	1.005	Moderate agreement
18. Insufficiency of discussion time	3.39	1.073	Moderate agreement

The mean scores for problem-related items ranged from 3.01 to 3.39, indicating moderate agreement with these challenges. Communication barriers ($M=3.39$, $SD=1.005$) and insufficiency of discussion time ($M=3.39$, $SD=1.073$) were identified as the most salient concerns.

Uneven Participation (Free-Riding Phenomenon): Uneven participation was a frequently cited problem. Interview data revealed a pattern of “excellent student dominance” and “low-proficiency student passivity.” The high-proficiency student stated: “In my group, I often end up doing most of the work. The other members just agree with what I suggest without contributing much.” [Student Interview, S-H]

The low-proficiency student expressed: “Sometimes I have ideas, but I'm not sure if my English is correct. So, I just listen to others and try to remember what they say.” [Student Interview, S-L]

The teacher acknowledged this challenge: “This is a persistent problem. Some students naturally take leadership roles, while others shy away. I've tried different grouping strategies, but it's difficult to ensure everyone participates actively.” [Teacher Interview]

Limited Teacher Guidance and Scaffolding

Limited class time prevented the teacher from providing adequate guidance to all groups. While students reported moderate levels of teacher feedback (Item 14: $M=4.15$, $SD=0.755$), the qualitative data suggested that targeted, individualized guidance was insufficient. The teacher explained: “With 50 students in a class and only 45 minutes, I can't give each group the attention they need. I try to circulate, but I can only spend a few minutes with each group.” [Teacher Interview]

Imperfect Evaluation Mechanisms

Current evaluation primarily focused on final products rather than individual contributions. A student expressed: “The teacher grades our

final composition as a group, but this doesn't reflect what each person contributed. Some people who didn't do much get the same grade as those who worked hard.” [Student Interview, S-M]

The teacher acknowledged the need for better evaluation systems: “I know the evaluation is not ideal. It's challenging to assess individual contributions fairly, especially with large class sizes.” [Teacher Interview]

Surface-Level Language Processing

While CL effectively improved structural organization, its impact on language accuracy and coherence was more limited. The teacher commented: “Students still need direct instruction on grammar and vocabulary. Cooperative learning alone doesn't seem to address these foundational language issues sufficiently.” [Teacher Interview]

Consequently, CL implementation is compromised by four interrelated challenges: uneven participation, inadequate teacher scaffolding, evaluation mechanisms that fail to capture individual contribution, and students' tendency toward surface-level language processing.

RQ4: Perceptions of Adequacy and Improvement Strategies

Perceptions of Current Mechanisms

Teacher and student interviews revealed mixed perceptions of current scaffolding and assessment mechanisms. While students appreciated the collaborative environment, they expressed concerns about fairness and efficacy.

The teacher reflected on assessment: “I try to assess both the process and the product, but frankly, it's difficult. The grading system emphasizes final scores, which pushes us to focus on product rather than process.” [Teacher Interview]

Students expressed clear preferences for evaluation that recognizes individual contributions: “I think the teacher should

consider each member's participation, not just the final composition. Some people don't do anything but get the same grade." [Student Interview, S-M]

Proposed Improvement Strategies

Based on the identified problems, the following improvement strategies were proposed.

Optimizing Grouping Strategies

The teacher suggested: "Instead of using the same groups for a long period, we could rotate groups more frequently and assign specific roles, such as discussion leader, note-taker, language checker, and time-keeper. This would ensure everyone has defined responsibilities." [Teacher Interview]

Enhancing Teacher Guidance

The teacher proposed allocating dedicated time for coaching: "I could spend the first 10 minutes explaining the task and providing language support, then give each group 2-3 minutes of targeted guidance during the activity." [Teacher Interview]

Developing Diversified Evaluation Systems

A combination of product-based and process-based evaluation was recommended: "I could include a peer evaluation component, where group members assess each other's contributions. I could also monitor group processes more systematically." [Teacher Interview]

Balancing Process and Language Focus

To address limited improvement in language accuracy, integrating CL with explicit language instruction was proposed: "We could have a 'language focus' segment before cooperative writing, where I explicitly teach the grammar and vocabulary likely to be needed. We could also dedicate some group time to language revision." [Teacher Interview]

Correspondingly, students and teachers recognize the need for improved scaffolding, particularly through dynamic grouping, clear role assignment, diversified evaluation that captures individual contributions, and balanced attention to both content and language.

DISCUSSION

Interpretation of Findings

The findings of this study both confirm and extend existing research on cooperative learning in EFL writing instruction. The positive effects on students' attitudes, engagement, and structural organization align with the conclusions of Deng (2024), Han (2023), and Ye (2024), supporting the theoretical predictions of Social Interdependence (Johnson & Johnson, 1989) and Motivation Theories (Deci & Ryan, 1985). The collaborative environment appears to satisfy students' needs for relatedness and competence, enhancing writing motivation and reducing anxiety (Wang, 2002).

The Macro-Micro Disparity: A Theoretical Contribution

The most significant finding of this study is the differential effect of CL on macro-level versus micro-level writing features. While CL significantly improved structural organization ($t=4.32$, $p<.01$) and content development ($t=2.89$, $p<.05$), its impact on language accuracy ($t=1.02$, $p>.05$) and textual coherence ($t=1.87$, $p>.05$) was not statistically significant. This finding challenges the assumption that CL uniformly benefits all aspects of writing.

Firstly, several explanations for this disparity emerge from the data. First, as interview evidence suggests, group discussions tend to focus on ideas and organization rather than linguistic precision. Students with lower English proficiency may lack the linguistic knowledge needed to provide accurate peer feedback on grammar and vocabulary. This aligns with Han's (2023) observation that CL requires supplementation with explicit language instruction for maximum effectiveness.

Secondly, the cognitive demands of collaborative writing may lead students to prioritize higher-order concerns (content, structure) over lower-order concerns (grammar, vocabulary). This is consistent with the "processing trade-off" hypothesis in writing research, which posits that writers have limited cognitive capacity and must allocate attention strategically (Kellogg, 1996). In the collaborative context, students may expend their cognitive resources on generating ideas and organizing content, leaving less capacity for monitoring linguistic accuracy.

Thirdly, the surface-level processing observed

in this study may be a function of the students' proficiency levels. For lower-proficiency students, the cognitive load of producing English text, even collaboratively, may be so high that accuracy is compromised. This finding is consistent with Cummin's (1984) Threshold Hypothesis, which suggests that learners must attain a certain level of proficiency before they can benefit from cognitively demanding tasks.

Implementation Challenges and Theoretical Alignment

The challenges identified in this study are uneven participation, limited teacher guidance, and imperfect evaluation, which have been consistently reported in previous research (Celik, 2013; Ye, 2024). However, this study extends understanding by linking these challenges to specific theoretical elements.

Uneven participation reflects a failure of individual accountability (Johnson & Johnson, 1989). When group members are not held responsible for their contributions, "free-riding" and "hitchhiking" occur. The phenomenon is particularly acute in contexts with significant proficiency gaps.

The limited teacher guidance and imperfect evaluation mechanisms reflect broader challenges in Chinese EFL classrooms, where large class sizes and time constraints are common. While teachers generally support CL principles, practical implementation often involves compromises that reduce effectiveness. The finding that evaluation focuses primarily on group products rather than individual contributions is consistent with Tian's (2022) research, suggesting a systemic issue requiring institutional-level solutions.

Contextual Mediating Factors

The multi-ethnic, heterogeneous proficiency context of this study introduces specific mediating factors that influence CL effectiveness. First, linguistic diversity, while enriching discussion, also complicates peer feedback and comprehension. Second, varying proficiency levels create natural hierarchies within groups, reinforcing participation inequality. Third, cultural learning traditions may be both an asset and a barrier to active participation.

Theoretical Implications

This study contributes to the theoretical understanding of cooperative learning in several ways. Firstly, it provides empirical support for the applicability of Social Interdependence Theory (Johnson & Johnson, 1989) in ethnic minority educational contexts. Secondly, the macro-micro disparity extends theoretical understanding by specifying the *domain-specificity* of CL benefits. Third, the study highlights the importance of teacher mediation in CL effectiveness, supporting Vygotskian (1978) perspectives on the teacher as a mediator of learning.

Pedagogical Implications

The findings offer several practical recommendations for English teachers implementing cooperative learning in similar contexts. From the perspective of dynamic grouping strategies, rather than maintaining fixed groups, teachers should rotate groups periodically and employ different grouping strategies depending on task objectives. Clear role assignment promotes individual accountability and ensures broader participation.

On the consideration of integrated language instruction, given the limited impact of CL on language accuracy, teachers should integrate explicit language instruction with collaborative activities. Then, teachers should provide structured guidance before CL activities, circulate systematically during group work, and offer targeted feedback. Last but not least, diversified evaluation is suggested. Evaluation should combine product-based assessment with process-based assessment, including peer and self-assessment components.

Methodological Considerations and Limitations

Several methodological limitations should be acknowledged. First of all, the study was conducted in a single school with a relatively small sample ($n = 92$), limiting the generalizability of findings. Future research should expand the sample to include multiple schools across different regions. Secondly, the three-month intervention period may be insufficient to observe significant changes in language accuracy, which typically requires more extended practice. Longitudinal studies are needed to examine the long-term effects of CL on writing development. Thirdly, this study did not include a control group, making

it difficult to attribute observed improvements specifically to cooperative learning. While the mixed-methods design provides rich contextual understanding, future studies could employ quasi-experimental designs with comparison groups.

Directions for Future Research

Based on the findings and limitations of this study, several directions for future research are proposed. Firstly, expanding the sample to include multiple schools across different regions in the target city would increase the credibility of the quantitative test results. Secondly, extended studies tracking CL implementation over a full academic year or longer would reveal developmental trajectories and sustainable effects. Thirdly, detailed observational research including control groups for quasi-experimental comparisons, examining group interaction patterns, feedback processes, and negotiation of meaning, would deepen understanding of how CL achieves its effects.

CONCLUSION

This study examined the application of cooperative learning in English writing classes at Minzu Middle School of Pu'er. Using a mixed-methods design, the research addressed four research questions investigating implementation practices, effects on writing ability and attitudes, implementation challenges, and improvement strategies.

The findings reveal a complex picture. Cooperative learning is systematically implemented and generally well-received by students, with positive effects on writing attitudes including increased interest, confidence, and participation.

However, the effects on writing ability are domain-specific rather than uniform: CL significantly improves macro-level features (structural organization, content development) but has limited impact on micro-level features (language accuracy, textual coherence). This macro-micro disparity is attributable to group interaction patterns that prioritize ideational exchange over grammatical precision.

Significant challenges persist in implementation, including uneven participation, limited teacher guidance,

imperfect evaluation mechanisms, and students' tendency toward surface-level language processing. These challenges reflect both individual factors and institutional constraints. Based on these findings, the study proposes dynamic grouping strategies, integrated language instruction, enhanced teacher scaffolding, and diversified evaluation systems as pathways to improved CL implementation.

The findings of this study suggest that CL is not a pedagogical panacea but rather a tool that requires thoughtful adaptation to local conditions. By attending to the specific challenges identified-participation inequality, guidance limitations, evaluation gaps, and linguistic demands-educators can maximize the benefits of cooperative learning while mitigating its limitations.

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