Problem Analysis and Strategy Research in the application of Cooperative Learning ——A Case study of College English Course

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Abstract: *Cooperative learning, as a new teaching method and strategy, has a scientific theoretical basis and a lot of practical research, which proves its advantages on teaching effect and positive effect on students. Cooperative learning not only has a positive impact on students' academic performance, but also significantly improves students' critical thinking ability and attitude towards the subject area. In addition, the effects and influences of cooperative learning on students' interpersonal relationship (interpersonal attraction and cohesion, social support, teacher-student relationship, peer relationship) and mental health (psychological adjustment, insight, self-esteem) have also been tested and proved by scientific methods. Therefore, it is very necessary to implement cooperative learning in teaching. Based on the analysis of the problems in the implementation of cooperative learning methods in College English course, this paper proposes some measures and methods to solve the problems according to the five factors theory of Johnson brothers and the cooperative learning structure method of Kagan, aiming at improving the effectiveness of cooperative learning and teacher's the teaching level.*

Key words: *cooperative learning; College English; problems; strategies*

1. Introduction

Cooperative learning, as a novel pedagogical strategy, has rapidly garnered global attention in the educational field and has demonstrated significant superiority in practice. Its impact on enhancing students' academic performance, particularly in fostering non-intellectual factors and non-cognitive psychological qualities, has been widely acknowledged. Pioneers of cooperative learning, such as Johnson brothers (founders of the Cooperative Learning Center in the U.S.), Kagan, Slavin, Long, Porter, and other theorists, have validated these conclusions through multidimensional teaching experiments. Introduced to China in the late 1980s, cooperative learning has attracted extensive research and practical exploration by scholars and educators, yielding substantial theoretical and practical outcomes. With the advancement of curriculum reforms, the concept of "cooperative learning" has gained prominence. The Guidelines for College English Teaching (2020 Edition) explicitly advocates task-based, cooperative, project-based, and inquiry-based teaching methods, underscoring cooperative learning as a critical competency for both students and educators in modern higher education [1].

Cooperative learning is defined as an instructional activity that employs small groups as the fundamental organizational unit, leverages dynamic interactions among pedagogical factors to facilitate learning, and evaluates collective outcomes to achieve shared educational objectives [2]. Its core characteristics and principles can be delineated through the following four aspects:

1.1 Small-Group Learning as the Fundamental Structure

The most distinctive feature of cooperative learning is the formation of small groups rather than individual learning. Teachers should adopt heterogeneous grouping principles to organize students into teams that collaboratively engage in learning, discussions, task completion, and assessments. These groups are characterized by strong cohesion and shared goals.

1.2 Dynamic Interplay of Five Key Elements

The efficacy of cooperative learning hinges on the activation and synergy of five critical elements:

positive interdependence, individual accountability, face-to-face promotive interaction, social skills, and group processing. The absence of any element diminishes the overall effectiveness of cooperative learning, marking it as a defining feature of this approach.

1.3 Goal-Oriented Instructional Design

Cooperative learning is driven by shared objectives, which serve as both the starting point and culmination of group efforts. Students actively communicate and collaborate to achieve these goals, necessitating careful planning and innovative design by educators to structure tasks and pathways toward success.

1.4 Team-Based Evaluation System

Assessment in cooperative learning prioritizes group performance metrics—such as total scores, average scores, representative scores, or value-added achievements—over individual outcomes. This approach incentivizes collaboration while requiring instructors to balance individual accountability within group dynamics.

2. The Connotation of Cooperative Learning

Cooperative learning is an instructional approach that utilizes learning groups as its fundamental organizational form, systematically leverages interactions among dynamic instructional factors to enhance learning, employs group performance as the evaluation criterion, and collectively achieves teaching objectives. Specifically, the connotation of cooperative learning encompasses the following aspects:

2.1 Cooperative learning is an instructional activity organized primarily through learning groups.

The defining feature of cooperative learning lies in the scientific organization and implementation of group activities. In cooperative learning, heterogeneous groups are often adopted, ensuring diversity among group members in terms of gender, academic performance, abilities, and backgrounds to foster complementarity. Occasionally, homogeneous groups may also be used for specific activities.

2.2 Cooperative learning is an instructional activity driven by collaborative interactions among dynamic instructional factors.

Instructional factors can be categorized as static or dynamic. Dynamic factors primarily refer to teachers (or teacher groups) and students (or student groups). Cooperative learning requires all dynamic instructional factors to engage in interactions, particularly cooperative interactions, to advance the teaching process. Emphasizing cooperative interactions among dynamic factors is a key characteristic of cooperative learning.

2.3 Cooperative learning is a goal-oriented instructional activity.

All cooperative learning activities are centered on achieving specific common goals. Critical elements emphasized in cooperative learning include the design of instructional objectives and the organization of teaching activities.

2.4 Cooperative learning is an instructional activity that rewards based on group performance.

Cooperative learning typically does not evaluate individuals based on their personal achievements. Instead, it uses the collective performance of each group in accomplishing objectives as the standard for evaluation and rewards. This mechanism transforms individual competition into inter-group competition, thereby promoting collaboration within groups. It motivates students to contribute their utmost within their respective groups, enabling them to achieve maximum development.

3. Research Status of Cooperative Learning

3.1 Cooperative Learning: International Research Status

Cooperative learning and collaborative activities have ancient roots, with collaboration being a cornerstone of human survival. In the early 1st century, proponents of Quintilian's educational philosophy advocated collective learning, believing that students learn effectively by teaching one another. The Roman philosopher Seneca also supported collaborative learning, famously stating, "Qui Docet Discet"—meaning "Those who teach learn twice." Educator Johann Amos Comenius (1592–1679) similarly emphasized that students gain deeper understanding by instructing peers.

By the 18th century, Joseph Lancaster and Andrew Bell popularized group-based collaborative learning in Britain. In 1806, Lancaster established a school in New York, spreading collaborative learning practices in the U.S. During the early 19th century, the American public school movement prioritized cooperative learning, with Colonel Francis Parker emerging as a key advocate. Over three decades, Parker promoted cooperative learning's democratic principles, practical applications, and its role in fostering classroom collaboration and democracy. As principal of Quincy School in Massachusetts (1875–1880), his methods attracted over 30,000 students annually (K, 1965).

Parker's student-centered approach dominated U.S. educational history. Later, John Dewey integrated cooperative learning into his pedagogical framework (Dewey, 1924). In the 1940s, psychologist Morton Deutsch's "Theory of Goal Structures in Competition and Cooperation" highlighted cooperative learning's potential to address traditional teaching shortcomings. He argued it elevates cognitive skills, enhances classroom outcomes, and strengthens collaborative foundations (Deutsch, 1949).

The 1960s marked the formalization of cooperative learning theory. Scholars like Deutsch (1962) and Johnson & Johnson (1975, 1989) developed core principles, contrasting cooperative and competitive learning to demonstrate its efficacy (Johnson & Johnson, 2009). At the University of Minnesota, the Johnsons established a training center, instructing teachers on classroom implementation. They introduced the "five essential elements": positive interdependence, face-to-face interaction, individual accountability, social skills, and group processing. A 1966 teacher training program laid the groundwork for modern cooperative learning practices (Johnson & Johnson, 1974).

From the 1970s onward, cooperative learning became one of the most influential educational methods. Research between 1970–1990 refined its strategies. Spencer Kagan's "Cooperative Learning" (2009) outlined over 200 techniques under the "Kagan Structures" framework. Empirical studies emphasized group composition and performance-based incentives (Slavin, 1983; Ellis & Fouts, 1993). Scholars demonstrated cooperative learning's role in fostering critical thinking, problem-solving, and synthesis (Hall, 2006; Johnson & Johnson, 1992). A meta-analysis of 550+ experiments by Johnson & Johnson (1999) confirmed its superiority over competitive and individual learning in boosting academic performance, interpersonal skills, and self-esteem (Gomleksiz, 2007). Vermette (1994) hailed it as a transformative educational innovation.

3.2 Cooperative Learning: Domestic Research Status

China adopted cooperative learning in the late 1980s, initially drawing on Western theories. Wang (1999) analyzed its principles and typologies, while Ma & Wang (2008) identified critical elements. Wang & Yang (1997) systematized its classroom implementation, and Wang (2002) established foundational concepts through objectives, teacher-student dynamics, and assessment. Shen (1992) detailed methodologies, and Zeng (2000) outlined five core elements: positive interdependence, accountability, social skills, group evaluation, and mixed organization. Gao (2001) explored classifications, and Wang's 2002 monograph "The Concept and Implementation of Cooperative Learning" significantly advanced theory and practice.

Studies highlighted cooperative learning's advantages over competitive and solitary approaches (Xiao, 2002; Ma, 2003; Yu, 2004). As interest grew, scholars adapted it across disciplines, including English language teaching (Chen, 2003; Zhang & Zhao, 2004). Empirical research validated its applicability in diverse educational contexts (Dong, 2005; Li, 2007; Zhou, 2013). Wang (2004) further refined its forms and essence, while ongoing studies address implementation challenges.

3.3 Conclusion

Cooperative learning has proven highly effective in Chinese classrooms, with its principles increasingly embraced. Recent research underscores its academic and social benefits, solidifying its status as a globally influential pedagogy.

4. Research Process

4.1 Research Objectives

This study aims to evaluate the effectiveness of cooperative learning through the lens of its five key elements and propose scientifically grounded strategies for optimizing its application in foreign language teaching.

4.2 Research Questions

The study addresses the following questions:

What is the current effectiveness of cooperative learning implementation?

Do the five elements of cooperative learning exhibit synergistic effects? What challenges do teachers and students encounter in practice?

What strategies can activate these five elements to enhance cooperative learning outcomes?

4.3 Participants

Participants included 150 non-English majors enrolled in three College English classes, with additional interviews conducted with their respective instructors.

4.4 Methodology and Tools

A mixed-methods approach was employed, combining a 26-item questionnaire (adapted from Manuel Delgado-García's validated instrument [3]) and semi-structured teacher interviews. The questionnaire, structured around Likert 5-point scales, measured five dimensions: positive interdependence (items 1–6), individual accountability (7–11), face-to-face promotive interaction (13–17), social skills (18–21), and group processing (22–26). Cronbach's α reliability coefficient for the instrument was 0.903, indicating high internal consistency [6].

Table 1: Questionnaire Structure

Elements of Cooperative Learning	Items
Positive Interdependence	1,2,3,4,5,6
Individual Accountability	7,8,9,10,11,12
Face-to-Face Promotive Interaction	13,14,15,16,17
Social Skills	18,19,20,21
Group Processing	22,23,24,25,26

4.5 Data Analysis

Of 152 collected questionnaires, 150 were valid. Descriptive statistics (mean, standard deviation) were calculated using SPSS 20.0. Key findings include:

Data analysis revealed (Table 2) that the mean score for positive interdependence (Mean = 4.4865) was the highest among the five elements, indicating a relatively high level of active mutual reliance among students in English classrooms.

Table 2: Mean and SD of PI

Positive Interdependence（PI）	
Mean	4.4865
Std.Deviation	.54813

Groups are composed of students of varying proficiency levels, who may contribute differentially during collaborative tasks. Cooperative learning requires each member to independently fulfill assigned responsibilities. However, data analysis (Table 3) reveals a relatively large standard deviation in individual accountability (SD = 0.68516), the second highest among the five elements, indicating that students struggle to adequately fulfill their respective roles and tasks in cooperative learning.

Table 3: Mean and SD of IA

Individual Accountability（IA）	
Mean	4.2085
Std.Deviation	.68516

Data analysis indicated (Table 4) that face-to-face promotive interaction exhibited the smallest standard deviation among the five elements (SD = 0.50432), suggesting frequent in-class face-to-face communication, positive interactions, mutual support among group members, and active engagement in group discussions.

Table 4: Mean and SD of FPI

Face-to-Face Interaction（FPI）	
Mean	4.4136
Std.Deviation	.50432

Data analysis revealed (Table 5) that the mean score for interpersonal relationships and group collaboration skills (Mean = 4.0932) ranked as the second lowest among the five elements, indicating that this dimension was not effectively activated in cooperative learning. Students exhibited weak collaborative abilities and a lack of effective communication and interaction. However, active participation in group discussions is recognized as a critical cooperative learning skill. Focused discussions on specific topics, proficiency in initiating discussions, and strong communication skills are essential prerequisites for successful cooperative learning and serve as pivotal factors in its effectiveness [7].

Table 5: Mean and SD of SS

Social Skills（SS）	
Mean	4.0932
Std.Deviation	.59863

Data analysis revealed (Table 6) that the mean score for group processing (Mean = 3.5923) was the lowest among the five factors, while also exhibiting the largest standard deviation (SD = 0.75326), indicating infrequent group reflection and self-evaluation practices among students during collaborative learning.

Table 6: Mean and SD of GP

Group Processing（GP）	
Mean	3.5923
Std.Deviation	.75326

5. Problems in the Implementation of Cooperative Learning

5.1 Student Perspectives:

While students are organized into learning groups, not all members actively participate in collaborative tasks. Each group typically includes one or two members with low engagement or outright non-participation, often due to weak individual accountability and failure to complete assigned tasks.

Trust among group members remains underdeveloped, resulting in low cohesion, fragmented teamwork, diminished collective responsibility for group outcomes, and a lack of team spirit.

Intra-group communication is insufficiently proactive and ineffective, significantly hindering the completion of shared tasks.

No systematic evaluation, reflection, or summarization occurs during or after task completion. Contributions and shortcomings are neither constructively addressed nor acknowledged, undermining

the efficacy of cooperative learning.

5.2 Teacher Perspectives:

Teachers unanimously endorse cooperative learning and exhibit strong willingness to adopt it. However, implementation often relies on subjective teaching experience rather than structured methodologies. Common issues include arbitrary grouping, simplistic activity designs, absence of formal assessment protocols, and vague, non-specific praise.

Teachers frequently organize cooperative activities (e.g., group discussions, collaborative tasks such as translation, Q&A sessions, dialogues, and mind-mapping). Yet, they provide minimal guidance on how students should collaborate, nor do they monitor the application of cooperative learning's five core elements [8].

Teachers lack in-depth theoretical understanding and practical expertise in cooperative learning. Implementation remains superficial, confined to basic group work rather than authentic cooperative learning structures, leading to suboptimal outcomes.

Teachers prioritize task completion but neglect to guide communication strategies or collaborative skill development, offering little intervention in group dynamics.

The above findings underscore the necessity for rigorous research into cooperative learning effectiveness. By diagnosing implementation challenges and proposing evidence-based improvement strategies, educators can bridge the gap between idealized cooperative learning frameworks and real-world classroom practices.

6. Strategies to Enhance Cooperative Learning Effectiveness

6.1 Restructuring Learning Groups via Heterogeneous Grouping

Heterogeneous grouping enables students with diverse academic levels to interact, learn collaboratively, and mutually progress. It cultivates communication skills and adaptability when engaging with peers of differing traits, fostering inclusivity and openness toward diverse perspectives.

To ensure individual accountability and prevent free-riding, Kagan et al. advocate for four-member groups as the optimal structure for maximizing learning outcomes [4]. Key rationales include:

Groups exceeding four members complicate classroom management.

Four-member groups allow flexible pairing (dyads) and rapid reconfiguration.

Larger groups increase the risk of member disengagement or marginalization.

Dyadic discussions within four-member groups facilitate idea exchange without requiring whole-class reporting.

Four-member groups outperform dyads by enabling richer interactions and distributing tasks more effectively.

6.2 Revising Assessment Methods for Cooperative Learning

Implementing reward-linked evaluations through the STAD (Student Teams-Achievement Divisions)method strengthens positive interdependence. Specific strategies include:

Hybrid Scoring: Combine group test scores with individual test results to differentiate final grades.

Random Representative Testing: Randomly select one member's score as the group's collective grade.

Competitive Group Testing: Designate one pre-qualified member per group (with comparable proficiency) to compete; winning groups earn bonus points.

Collective Bonus Criteria: Award group bonus points (e.g., +5 per member) if all members score above 80% on individual tests.

6.3 Role Assignment and Rotation in Collaborative Groups

Structured face-to-face interactions—such as oral explanations, summarization, elaboration, and peer questioning—enhance comprehension and task performance. The following skills can be implemented:

Role Allocation: Assign distinct roles (e.g., summarizer, observer, recorder, coordinator, checker) to each member.

Role Rotation: Periodically rotate roles during collaborative sessions to diversify skill development.

6.4 Reforming Group Self-Evaluation Processes

Group processing, a core element of cooperative learning, significantly impacts learning efficiency. Stuart Yager's study compared three conditions [5]: cooperative learning with group reflection; cooperative learning without group reflection; and individual learning. Findings demonstrated that students in reflective cooperative groups outperformed peers in both non-reflective groups and individual learning across proficiency levels. Even non-reflective cooperative learning surpassed individual learning [9].

Numerous studies further substantiate the significance of group self-evaluation in cooperative learning effectiveness. Therefore, it is imperative to allocate dedicated time after completing collaborative tasks for structured intra-group discussions to conduct self-assessment and reflection on teamwork. Specific implementation steps are as follows:

Pre-class Closure Reflection: Reserve 5 minutes before the end of the session for groups to engage in self-reflection or evaluation of their collaborative process.

Behavioral Analysis: Identify which member behaviors contributed positively or negatively to the group's success.

Actionable Revisions: During a 3-minute reflection, articulate three beneficial behaviors and one area for improvement, documenting these on self-designed cards.

Instructor-led Recognition: The teacher provides concise class-wide feedback, prioritizing commendation, and publicly acknowledges the most exemplary group [10].

7. Conclusion

7.1 Enlightenment on the study

Effective cooperative learning in College English requires systematic implementation of evidence-based strategies to activate its five core elements. By addressing participation imbalances, enhancing communication skills, and institutionalizing reflective practices, educators can transcend superficial group work and foster proactive, collaborative learners. Mastery of cooperative learning techniques aligns with the developmental needs of students and the pedagogical imperatives of modern higher education.

7.2 Limitations of the study

This research involved only 120 non-English major students and three English teachers from a single university, resulting in a small sample size and limited generalizability of the findings. Including students from other colleges or universities could enhance the validity and reliability of the qualitative data.

7.3 Suggestions for future research

The following recommendations are proposed for future studies within this field:

While this study focused on cooperative learning in college English courses, future research could explore collaborative learning in other foreign languages or disciplines.

The methodology applied in this study, based on the case of only one university, could be tested in other institutions and student populations.

The effectiveness of cooperative learning methods may vary across cultures, traditions, beliefs, and individual characteristics. Further studies should investigate these contextual influences to deepen understanding of cooperative learning's cross-cultural adaptability.

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