

RESEARCH ARTICLE

STUDY ON THE INFLUENCING FACTORS OF EFFECTIVE GROUP COOPERATION MODE IN CHINESE UNIVERSITIES CLASSROOM

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ABSTRACT - In the 21st century, cooperation ability is crucial for students' employment prospects. Therefore, collaborative group work has become an important part of higher education, yet its effective implementation faces challenges in Chinese universities. Chinese university students have less experience in cooperative learning during their basic education, so it is necessary to identify and optimize the key factors that affect the efficiency of group cooperation. This study focuses on the student factors in effective group cooperation in Chinese universities. After interviewing students in modern educational technology courses, it was found that task allocation, group leader's ability, communication skills, and reward feedback mechanisms are key. In response, it is recommended to allocate tasks clearly and reasonably, select capable group leaders, improve communication skills through training, and establish effective reward mechanisms.

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INTRODUCTION

With continuous technological advancements, work in modern society has become increasingly complex, with more demanding tasks. As a result, more work now requires collaboration, creating a need for individuals with strong cooperative skills. Consequently, cultivating students' collaboration skills has become a key objective for universities. In current Chinese higher education, however, teacher-centered lectures still dominate, and students often learn passively. Through group cooperative learning, students can work together, communicate, and interact to complete tasks, solve problems, or carry out projects (Chao et al., 2024). Nonetheless, in practice, the effectiveness of group cooperative learning is often influenced by multiple factors. Therefore, research on the factors affecting effective group cooperation among students in Chinese university classrooms holds significant theoretical and practical importance. This study aims to explore the factors influencing group cooperative learning in Chinese university classrooms and provide relevant strategies and recommendations to offer insights for classroom teaching reform in higher education.

LITERATURE REVIEW

Salas et al. (1992) defined a team as "a distinguishable set of two or more individuals who interact dynamically, interdependently, and adaptively toward a common and valued goal." Group cooperative learning takes the cooperative learning group as its basic form, systematically utilizing interactions among dynamic elements in teaching to facilitate student learning. It evaluates performance based on the group's achievement, with the collective attainment of educational objectives as its organizational goal (Gu et al, 2022). With ongoing social development, there is a shift from predominantly independent work to more collaborative work models in society (Tang et al, 2019). Since education is closely linked to societal advancement, cultivating the ability to collaborate within groups has become a central educational objective. However, how to implement effective group cooperation in education remains a critical focus of attention.

Implementing group cooperative learning can enhance student learning outcomes and improve classroom atmosphere, garnering widespread attention from the educational community. Many researchers have conducted in-depth studies on the factors influencing group cooperative learning. For instance, Albalat et al. (2024) researched how resistant students learn to cooperate, presenting strategies used by teachers and providing actionable recommendations to help educators overcome such resistance. Shen et al. (2024) examined factors influencing interprofessional collaboration, contributing insights into how personal and environmental factors promote collaborative outcomes in medical education, thus aiding in the development of future IPE curricula. Research by Zagni et al. (2024) indicated that moderate vagal tone particularly facilitates cooperation in children employing active cognitive control. These findings underscore the importance of developing physiological self-regulation skills to enhance cooperative behavior in educational settings, supporting improved social, emotional well-being, and learning outcomes. This study will use in-depth interviews to explore which factors in Chinese university classrooms affect the effectiveness of student group cooperation, contributing to the improvement of classroom teaching quality in Chinese higher education.

Using the China National Knowledge Infrastructure (CNKI) database for retrieval, a search with the keyword "group cooperation" yielded 88,305 results (query date: 23 January 2023). An analysis of the search results revealed that the

majority of the studies focused on primary and secondary education. Such as (Han, 2022) research is about how to better utilize group learning in the middle school English classroom, (Guo, 2021) research is on how to implement cooperative group learning in elementary school mathematics classrooms. However, only several hundred studies are geared toward colleges and universities, and these studies are restricted to the study of teaching practice of medicine. For example, (Liang and Liu, 2020) study on the application of cooperative group learning method in teaching nursing practice. In the literature review, it was found that most papers on the study of group cooperation focused on how to promote teaching. For example, (Hou, 2022) study on the effective ways of using cooperative group learning methods for elementary school language teaching. A small amount of research on group cooperation influence factors from teachers and students, for example, (Wang, 2009) research on the analysis of factors affecting the effectiveness of cooperative group learning and countermeasures, or they only presented the factors without proposing an effective implementation plan. For example, (P. Li, 2011) research on the factors affecting the effectiveness of cooperative group learning. In this study, the researcher analyzes classroom teaching in university education using qualitative methods to find out what factors influence students, and thus the research is more targeted.

MATERIALS AND METHODS

Analysis of the Key Influencing Factors Among the Students in the Efficient Group Cooperation Mode

In the research methodology section, this study adopted the following strategies to ensure reliability and validity. Firstly, a well-planned convenience sampling method was employed, involving extensive preliminary research to screen and categorize potential samples carefully. To ensure sample diversity and representativeness, strict sampling principles were adhered to, selecting two students each from freshman, sophomore, and junior years, with three males and three females per grade. Additionally, samples were balanced by family background (low, medium, affluent) and field of study (three from the humanities and three from the sciences, with each student from a different major). Sample characteristics were allowed to overlap moderately, as long as they met the above criteria, to enrich sample diversity and depth.

In the data collection phase, a semi-structured interview approach was used, combining the structured interview's formality with the unstructured interview's flexibility. This approach was designed to guide respondents in deep discussion while allowing them some freedom of expression. To ensure the authenticity and reliability of the interview content, interviewers underwent rigorous training to become familiar with the interview process and questioning techniques, maintaining a neutral and objective stance. During the interviews, both audio recording and note-taking were used to ensure the completeness and accuracy of the data collected.

For data analysis, this study adopted content analysis, a systematic, objective, and quantifiable method for analyzing text aimed at accurately capturing and coding key information and patterns within interview data. Multiple validation methods were used to ensure accuracy and reliability. First, preliminary sorting and categorization of interview data were conducted to create an initial analytical framework. Next, experts with relevant research experience were invited to independently evaluate the analysis results to ensure objectivity and accuracy. Finally, the analysis results underwent repeated verification and refinement to ensure their stability and consistency.

Reasonable and Clear Allocation of Tasks is the Core Factor of an Effective Group Cooperation Model

In the interview with 6 students, it was found that all 6 students made it clear that the key factor of good cooperation experience was the reasonable and clear task allocation of group cooperation (as shown in Table 1). Study classmate D said that one of her most impressive successful group cooperation was that the teacher clearly divided the tasks during the course of the "Basic Writing" course, so as to ensure that everyone had something to do in the process of cooperation. Study classmate A said that in a psychological course, the task of each group member was very clear. Some people did PowerPoints, and some people found cases. Finally, the group leader summarized the speech, resulting in a successful group cooperation experience.

Table 1. A clear distribution of tasks is one of the key factors

Respondent	Task allocation	Successful group cooperation and experience sharing
A	Members are assigned independently	In an offline psychology course, all the boys in the same dormitory were in one group. The group leader was responsible and everyone participated. Finally, I summarized their opinions and the theme was 'I Love Me'.
B	Teacher task allocation	Teacher monitoring is fairly strong, teacher division of labor is reasonable, group members should participate, task distribution is reasonable.
C	Teachers or group leaders assign tasks	Group division of labor, the teacher leader assigned tasks, if the task is difficult, they will overcome the difficulties to complete the task.
D	Teacher task allocation	The course teachers of "Basic Writing" will implement the division of labor for each person.
E	Group leader allocation	The group leader is the head of the dormitory, who can quickly divide the labor, communicate, and complete the group tasks quickly and efficiently.
F	Teachers or group leaders assign tasks	The dormitory is divided into groups, and each person does a part to communicate, and finally put all the things together to refine the cooperation tasks

The Ability of the Group Leader Contributes to the Effective Development of Group Cooperation

In the process of group cooperation, the group leader is the key to coordinate the relationship between tasks and team members and organize the task. In the interview with the six students, it was found that all the students believed that the ability of the team leader would affect the task of group cooperation (as shown in Table 2). According to Study classmate E, he wanted to be the leader of the group, but he was afraid he would not be able to lead the team members in the right direction. Study classmates C and F said that they lacked communication skills and were incompetent for the group leader role. Study classmate B with excellent grades and a lively personality said that he was often recommended as a group leader by his teachers and classmates. He could effectively organize the development of group cooperation tasks.

Table 2. The ability of the team leader would affect the task of group cooperation

Respondent	Whether you like to be a group leader
A	Like to do and decide whether you want to be a leader according to your own interests. If you are interested, you will plan your own tasks.
B	Like to be a guide, good academic performance, is always recommended.
C	Do not like being a leader or having an expressive personality. A relatively quiet personality.
D	I do not like to be a leader of group cooperation, so it is difficult to organize all team members to cooperate.
E	Can be a leader of group cooperation. However, I feel lack of ability, and I will panic and have poor communication skills.
F	Personality is not very suitable to be a group leader

Effective Communication is a Key Factor for the Effective Development of Group Cooperation

In the survey, five of the six students believed that group cooperation could not be carried out effectively. This is because most of the group members were unwilling or unable to communicate with each other. For example, Study classmate C said that when he disagreed with the group members, he would remain silent or withdraw from the group cooperation task. Study classmate F told me that he had been part of a group of dormitory members since he attended college. The dormitory leader was able to assign reasonable tasks and communicate effectively with the members of the team. Therefore, group collaboration was a great success. Study classmate D indicates that the success rate is higher for all group members to participate in group cooperation tasks.

Reward and Feedback is an Important Guarantee for the Effective Development of Group Cooperation

The survey showed that all respondents indicated that they should give timely and effective feedback on the effectiveness of group cooperation, and five of the six respondents said that they would best be rewarded with course scores that were closely related to the students. For example, respondent A indicated that the reward course score rewards for group cooperation had a good impact on cooperation, and it is best to carry out visual score rewards. Respondent B said that students would like the reward of adding usual points. Respondent D said that what students' value most is their usual grades.

CONCLUSION

Clear and Reasonable Assignment of Group Tasks

After literature analysis and survey feedback, one of the most serious problems in group cooperation is the phenomenon of "free rides". In the process of group cooperation, "hitchhiking" occurs when some group members are not actively engaged, and "take advantage" of students to achieve results (Chen and Zhong, 2021). In the survey of the respondents, almost all the students were dissatisfied with this phenomenon, which was also the main reason for the failure of group cooperation. Therefore, a clear and reasonable allocation of group tasks becomes the core factor of group cooperation. How do you assign tasks? There are three effective distribution methods, namely teacher distribution, group leader distribution and combined distribution (see Figure 1).

The three have their own advantages and disadvantages. First, teacher allocation. The advantage is that teachers have a deep understanding of the difficulty of tasks, objectives and tasks, and can reasonably allocate tasks according to the degree of difficulty. Moreover, teachers have higher authority over students, and students are afraid of punishment because of the tasks assigned by teachers (Zhang et al., 2022). There is a disadvantage in that teachers' workload increases, they are not deeply aware of the basic situation of students, and they are unable to choose whether to assign tasks on a standard basis or to differentiate them. The second type of allocation is group leader allocation. The advantage is that in the way of the group leader, the group leader has a high degree of understanding of the students, and can choose the appropriate difficulty task according to the basic situation of the students (Tang and Mo, 2021).

The group leader has the disadvantage that it is hard to judge the difficulty of the task, and it is easy to make mistakes. And the authority of the group leader is not as good as the teacher, and sometimes it is difficult to promote the task. Third, combined with allocation, the teacher designs the allocation plan according to the difficulty of the task, and then the group leader chooses the final allocation plan according to the situation of the students. The advantage lies in the task allocation is reasonable, can adapt to the differences of students. The disadvantage is that the workload of teachers increases greatly.

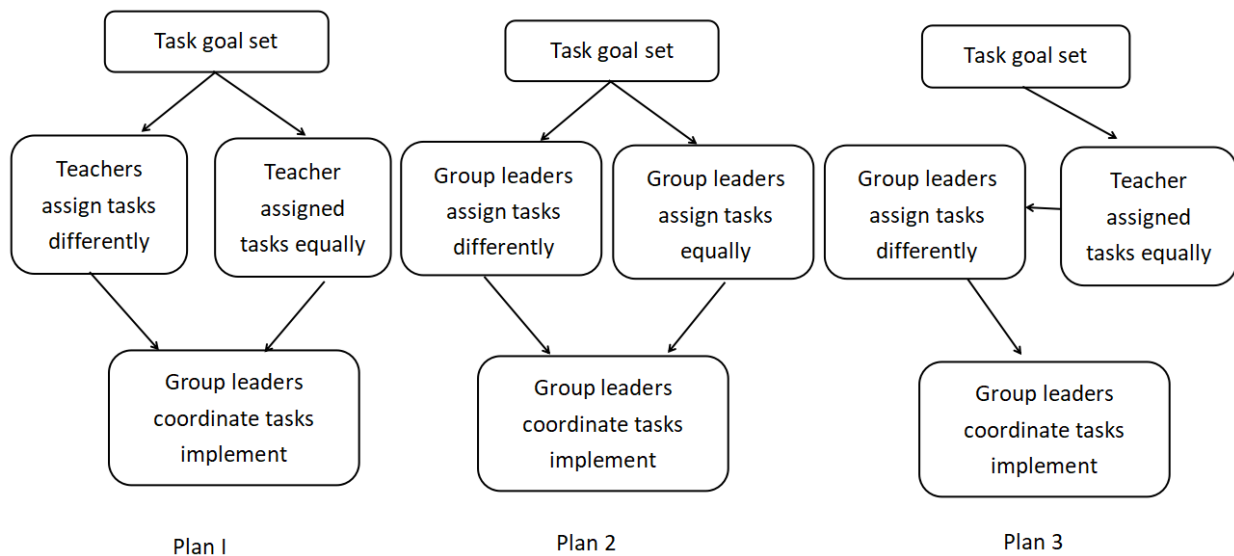


Figure 1. Three effective distribution methods

Select a Competent Group Leader

It is important to value the choice of team leader in the group cooperation task. The investigation determined that the team leader's competence needs should meet the following conditions as far as possible. The more conditions are met, the more effectively they can promote the group cooperation. Condition one is to be voluntary. Voluntary is the meaning of initiative. Anything only interested in their own motivation can carry out well. Therefore, only when the group leader is voluntary can the task effectively adjust the task of the group. Conditions two is to be recommend. The group leader students recommended by the students have high credibility, and generally are from the class committee, good academic performance or strong communication ability. In this way, when the group leader assigns tasks, because the group leader is recommended by himself, the execution force of the group members is high (Mou and Zhu, 2012).

Improve Students' Communication Skills

Communication is the basis of cooperation, so the success of cooperation depends on how effectively the team members communicate. Besides the team leader communication ability, the team members need to improve their communication skills as well. The communication skills of the interview team are limited by their own personality and task interests. The change in their character is long-term and difficult. Therefore, teachers should start from the perspective of task interest, carry out basic investigations on students before the task, and then assign task tasks (Z. Li and Feng, 2018). This will strengthen students' willingness to participate, and naturally strengthen their communication with each other.

Guarantee the Reward and Feedback for Group Cooperation

If the mission goal is the terminal of the train, then reward feedback is the main power system of the train running to the terminal. Task-driven in the final analysis is spiritual drive, so giving the necessary spiritual rewards can effectively promote students' active cooperation (Zheng et al., 2016). However, the specific content of the reward feedback should be carefully planned. Researchers found that students want extra points in their usual grades as the most rewarding reward. In order to better implement the extra points system, they need to make systematic planning for the extra points system.

Limitation

The study investigated the factors that affect students and developed an effective strategy. However, the study was limited by the number of samples and the implementation of the rewards system lacked any detailed strategy. Therefore, the later study will make up for the shortage. It is hoped that this study can provide a reference for the group cooperation mode and promote the operation of an efficient classroom.

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CONFLICT OF INTERESTS

We acknowledge and declare any potential conflicts of interest that may arise in our professional or personal capacities. We commit to transparency, avoiding bias, and disclosing relevant information promptly to all involved parties.

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This research was conducted independently by authors.

AUTHORS CONTRIBUTION

P. Bo: Introduction

L. Fatmawati: Research Method, Material and Method

M. Ahmad Muhamin: Literature Review

S. Yubo: Conclusion

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