Investigation on the Collaborative Learning Mode of College Japanese under the Network Environment

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Abstract: *The purpose of this paper was to explore the collaborative learning model of college Japanese under the network environment, and explore the implementation and effect of the collaborative learning model of college Japanese under the network environment, so as to improve students' comprehensive quality in terms of language expression, cross-cultural communication, team cooperation, etc. Through questionnaires and practical practice, this paper studied the implementation and effect of the collaborative learning model of college Japanese under the network environment, and analyzed the necessity of implementing the model. The results showed that 82% of the students believed that collaborative learning had a positive effect on improving their listening, speaking, reading and writing skills. The implementation of the collaborative learning model of college Japanese in the network environment could improve students' learning efficiency and language expression ability, and had significant contributions to enhancing cooperation awareness and cross-cultural communication ability.*

Keywords: *Network Environment, College Japanese, Collaborative Learning, Model Analysis*

1. Introduction

Modern society is relatively open, and there is an increasing number of Japanese learners. However, blindly memorizing and summarizing grammar can only make it difficult to apply the language learned in practice. Therefore, in order to better improve students' Japanese level, universities have launched the collaborative learning model. The trend of globalization in the economic and cultural environment has also made cross-cultural communication one of the necessary skills. The rapid development of network technology also provides a strong support for collaborative learning of college Japanese. However, collaborative learning under the network environment also faces some difficulties, mainly including the defect of being unable to communicate face to face, the problem of collaborative learning field not being used correctly, and the guarantee of communication quality.

Collaborative learning of college japanese means that teachers provide a cooperative environment for students to communicate in language teaching so as to achieve common progress. There are many theories about collaborative learning and Japanese teaching model. For example, some scholars believe that incorporating collaborative models into open spaces for autonomous learning and the use of online learning platforms can improve teaching efficiency [1-2]. Some scholars have conducted teaching experiments on collaborative learning writing in the network environment [3-4]. Some scholars also believe that the ability of students to cooperative learning Japanese in an online environment is one of the key areas of college Japanese reform [5-6]. In the online environment, students engage in cross-cultural communication activities through autonomous cooperation, group work, and other means. Under the network environment, the research on the collaborative learning model of college Japanese has great practical significance.

The innovation of this paper lied in the use of network technology to practice collaborative learning for college Japanese teaching, which effectively improved students' language expression ability and cross-cultural communication ability. Secondly, in teaching, targeted guidance and support were provided based on factors such as students' language stage and level, which improved classroom learning efficiency. Finally, through questionnaires and practical investigations, this paper summarized the advantages and problems of the collaborative learning model of college Japanese under the network environment, and put forward corresponding suggestions.

2. Japanese Collaborative Learning in Network Environment

2.1. Network Environment and Technology

With the development of information technology and the popularization of the Internet, the application of network environment in teaching is becoming increasingly widespread, becoming an indispensable part of the Japanese language learning process. The construction of network environment and the structure of college Japanese collaborative learning mode is a complex system engineering [7]. The network environment has full spatiotemporal characteristics. Students can learn anytime and anywhere. Whether on campus or off campus, students from different regions can participate in communication. The network has a large amount of information. Through the network environment, a massive amount of information resources can be obtained, including not only pure text information, but also various forms such as images, videos, audio, etc. This allows students to learn more intuitively and richly. The interactivity in the internet is strong. The online environment can break the limitations of time and space, enabling students from different regions to communicate with each other. This can not only carry out exchanges between teachers and students, but also between students to help each other and achieve the purpose of collaborative learning [8]. The network can provide timely feedback. Students can conduct self-evaluation in the online environment and obtain timely feedback from teachers through online tests, assignments, and other methods to promote their learning progress. The internet provides personalized learning. The online environment can provide different learning resources according to students' different needs, and can intelligently manage learning based on students' learning situations, promoting their learning progress. Network technology can provide rich learning resources in Japanese language teaching, such as online courses, video courses, online discussions, etc. At the same time, network technology can also provide intelligent learning tools, such as adaptive learning systems, intelligent evaluation systems, etc. These technologies can enable students to engage in autonomous learning while also improving their learning outcomes [9].

The collaborative learning model of college Japanese relies on the network environment, which has important educational value. In traditional Japanese language teaching, students mainly learn through listening, speaking, reading, writing, and other methods. However, this teaching method often requires students to study in the classroom, which is greatly limited in time and location. Through the network environment, students can not only learn at anytime and anywhere, but also achieve the purpose of mutual help and collaborative learning through the collaborative learning mode, and cultivate students' independent thinking ability and team collaboration awareness [10-11]. In addition, the online environment has richer learning resources, which can enhance students' learning interest and effectiveness [12]. This paper found that the collaborative learning model of college Japanese under the network environment had a significant effect. Implementing this policy can not only improve students' language expression and cross-cultural communication abilities, but also enhance their sense of teamwork. Meanwhile, this article found that the implementation of this model still faces certain difficulties and obstacles, such as a lack of support from teachers and network technology. Therefore, in order to better promote this model, support and joint efforts from schools and government departments are needed.

2.2. College Japanese Collaborative Learning Mode

The structure of college Japanese collaborative learning mode includes the following aspects:

Learning resource provision: Through the online environment, corresponding learning resources are provided, including text, images, audio, video, and other forms.

Interactive learning mode: Interactive learning and collaborative learning among students are realized through course forums, discussion areas, etc.

Personalized learning management: Through the learning management system, students' learning situation is monitored and managed, and personalized learning plans and learning guidance are realized.

Examination evaluation method: Through online quizzes, assignments, and other methods, the evaluation of students' learning effectiveness is conducted and a student performance report is generated [13].

In the structure of college Japanese collaborative learning mode, the realization of each functional component needs to be considered, including the following aspects: in terms of providing learning

resources, the source and quantity of learning resources need to be considered. In terms of interactive learning methods, it is necessary to consider the establishment and management of learning forums and discussion areas. In terms of personalized learning management, it is necessary to consider the way and intensity of monitoring students' learning status, as well as how to develop personalized learning plans and strategies based on students' learning situation [14]. In terms of exam evaluation methods, it is necessary to consider the flexibility and accuracy of online tests, assignments, and other methods, as well as the generation and management of performance reports. On the basis of realizing the above functions, it can effectively improve students' learning effect and interest, and promote the development of college Japanese collaborative learning mode [15].

2.3. Collaborative Learning Strategies

Collaborative learning means that students cooperate with each other in groups to complete tasks and solve problems in learning through communication and interaction [16]. The theoretical basis of collaborative learning mainly includes the following points:

a) The theory of social constructivism holds that knowledge is formed through social interaction. Students' collaborative learning in groups can promote students' communication and cooperation, so as to enable students to jointly build knowledge and promote the cultivation of students' social skills [17].

b) The theory of situational learning believes that the process of students' learning needs to be combined with actual situations. Collaborative learning can enable students to learn in the actual situation and improve the learning effect.

c) The learning community theory believes that learning is a social process that requires the formation of a learning community. Group collaborative learning can build a small learning community, thus allowing students to learn and communicate with each other in a good learning atmosphere [18].

Students have different evaluations of learning Japanese through the internet environment. Students have a positive reaction to learning Japanese in the online environment. Learning Japanese through the internet can improve learning effectiveness, while also reducing learning time and economic costs. The learning difficulty in the online environment is relatively high, thus requiring more self-directed learning and self-restraint abilities [19]. At the same time, increasing interaction and communication in the online environment can enhance students' deep understanding of Japanese language knowledge. Japanese learning in the online environment requires more intelligent learning tools, such as intelligent evaluation systems and adaptive learning systems, which can target different students for targeted learning. To sum up, Japanese collaborative learning under the network environment is an effective learning mode, which can improve students' learning effect and reduce students' time and economic costs. At the same time, students have also put forward some suggestions and requirements for this learning mode, which requires more emphasis on students' communication and interaction and the need for intelligent learning tools to assist students' learning [20].

3. College Japanese Collaborative Learning Experiment

3.1. Experimental Background

With the advent of the information age and the continuous progress of network technology, people are increasingly relying on the internet to obtain knowledge, and Japanese learning is no exception. With the increasingly close economic, political, and cultural exchanges between China and Japan, Japanese has gradually become one of the hottest foreign languages in China. However, traditional Japanese teaching methods have many problems, such as a lack of interactivity and limited learning effectiveness. In order to improve this situation, scholars began to try to use network technology for collaborative learning to improve the teaching effect. Therefore, this paper would compare the effect of traditional learning methods and online collaborative learning methods on Japanese learning, which had certain reference significance for promoting online collaborative learning.

The second part of this paper described the theoretical basis of the collaborative learning model of college Japanese under the network environment. This part analyzed the theoretical basis of collaborative learning strategy, discussed the necessity and feasibility of implementing Japanese collaborative learning under the network environment, and focused on the application of network technology in Japanese teaching. The third part was to describe the practice and investigation of the collaborative learning model of college Japanese under the network environment. This part explored

the difficulties of face-to-face communication through practice and field survey, and expounded the methods of collaborative learning using network technology. On this basis, this paper collected real data with students as the main research objects by carrying out a questionnaire survey, including students' evaluation of Japanese learning under the network environment, suggestions for this model, and scientific evaluation and specific practical guidance for the college Japanese collaborative learning model. In addition, it also analyzed the effect evaluation of the collaborative learning model of college Japanese under the network environment. This part focused on the evaluation of the effect of improving students' language expression ability, cross-cultural communication, team cooperation and other aspects, and discussed the practicability and importance of promoting the collaborative learning model of college Japanese.

3.2. Experimental Design

The purpose of this experiment was to compare the learning effect of traditional Japanese learning and network collaborative learning, explore the feasibility and effectiveness of network collaborative learning, and explore how to improve the teaching effect of traditional Japanese learning. The experimental subjects were randomly sampled and 100 college students were selected for the experiment. The students were divided into groups, and the traditional learning method experimental group conducted Japanese language learning through traditional teaching methods, such as teaching by teachers, listening to students, and doing homework. The experimental group of network collaborative learning mode used network learning management system, network video communication software and other tools. Students could communicate in real time through the internet and jointly discuss problems encountered in their studies, as well as share learning experiences.

The experimental steps were as follows: The experimental subjects were subjected to basic tests to understand their Japanese proficiency, learning attitude, and other information. The experimental subjects were divided into two groups. Each group consisted of 50 people. Teaching was conducted according to different experimental methods; each student was assigned a learning plan and monitored for teaching. After the experiment, two groups of students were evaluated. Experimental evaluation indicators included academic performance, learning efficiency, and learning satisfaction. Through learning tests and other methods, students' academic performance was judged. The time spent by students in the learning process was compared with their academic performance. Through a questionnaire survey, students' feedback on different learning styles was understood. The collaborative learning model of college Japanese under the network environment had a good application prospect, but its effect needed to be evaluated through a questionnaire survey. This paper introduced the questionnaire design and results of the collaborative learning model of college Japanese. Students of multiple grades and levels were selected to participate in the survey. The questionnaire should use multiple choice and single choice questions, as well as open-ended questions, so as to ensure the quality of the questionnaire. The questionnaire should include students' personal information, motivation and goal of learning Japanese, acquisition of Japanese skills, evaluation of collaborative learning effect, evaluation of collaborative learning mode, etc. A questionnaire survey should be conducted as soon as possible after the end of the semester to ensure the accuracy of the data. The questionnaire survey should be conducted in the form of an online questionnaire to ensure the accuracy of the data. The credibility of the questionnaire survey is judged using the following formula:

$$s_{AB} = 2s_{AC}/(1 + s_{AC})$$

(1)

Among them, s_{AC} is the correlation coefficient of the two half tests, and s_{AB} is the revised questionnaire reliability. The correction formula is as follows:

$$s = 1 - \frac{t_{x-y}^2}{t_z^2}$$

(2)

Among them, t_{x-y}^2 is the variance of the mean difference, and t_z^2 is the variance of the total score. The Cronbach coefficient is expressed as follows:

$$\eta = \frac{L}{L-1}\left(1 - \frac{\sum_{i}^{l} = t_z^2}{t_z^2}\right)$$

(3)

Through this experiment, this paper expected to draw the following conclusions: Compared with traditional learning methods, online collaborative learning had a better effect in Japanese learning. Network collaborative learning was feasible and effective in Japanese learning. The use of network technology could improve the teaching effectiveness of traditional Japanese language teaching methods. Some improvement suggestions could be proposed to provide reference for Japanese language education.

3.3. Experimental Environment Construction and Questionnaire Content

Hardware environment: computers, network devices, servers, etc. Software environment: learning management system, network video communication software, etc.

The pre and post evaluation of the control group in the college Japanese collaborative learning experiment can be conducted from many aspects, such as the improvement of language skills such as listening, speaking, reading and writing, changes in students' learning motivation, self-confidence, cooperation spirit, and the effect of curriculum design. For language skills such as listening, speaking, reading, and writing, language testing tools can be used for evaluation, such as The Japanese Language Proficiency Test, Japanese Test of Japanese as Foreign Language, etc. Comparing the test scores of the control group at the beginning and end of the semester, it can be seen whether their respective language skills have improved, and how effective the improvement measures are. In addition, questionnaires can be used to understand students' attitudes and opinions towards collaborative learning, including whether they think collaborative learning is more conducive to improving language skills (Q1), whether they are willing to cooperate with others in cooperative learning (Q2), whether they feel more successful in learning (Q3), whether it has a positive effect on improving their listening, speaking, reading and writing skills (Q4), whether it enables them to better understand the Japanese language (Q5), and whether they have learned more Japanese language knowledge (Q6). The specific evaluation method needs to be selected and determined based on the experimental design and evaluation purpose.

4. Evaluation of Experimental and Survey Results on Japanese Language Learning

4.1. Results of the Pre Test and Post Test of Writing Scores in the Experimental and Control Classes

According to statistics, Table 1 is obtained. The pretest results showed that there was no significant difference in Japanese proficiency between the two classes before the experiment began. The average of Japanese in the experimental class was 83.1, with a standard deviation of 6.81. The average score of Japanese in the control class was 82.2, with a standard deviation of 7.42. The average score difference between the two classes was less than one point. Looking at the analysis of the post test results of the experiment, it could be seen that the average scores of the experimental class and the control class were 95.4 and 88.5, respectively, with a difference of 6.9 points. After the experimental results, there was a very significant difference in Japanese proficiency between the two classes.

Table 1: The Results of Pre-Test and Post-Test of Experimental Class and Control Class

	Before experiment		After experiment	
	Average	Standard deviation	Average	Standard deviation
Experimental class	83.1	6.81	95.4	13.8
Control class	82.2	7.42	88.5	18.3

4.2. Evaluation of Survey Results

As shown in Figure 1, a total of 100 students participated in this survey. Among them, the proportion of different grades (freshmen, sophomores, and graduates) was 50%, 30%, and 20% respectively; the proportion of students with different academic achievements was 40% for excellent students, 50% for average students, and 10% for poor students.
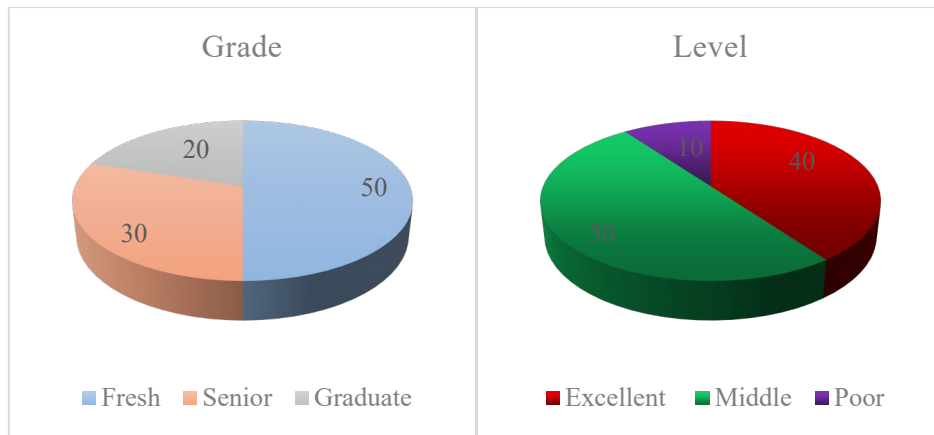
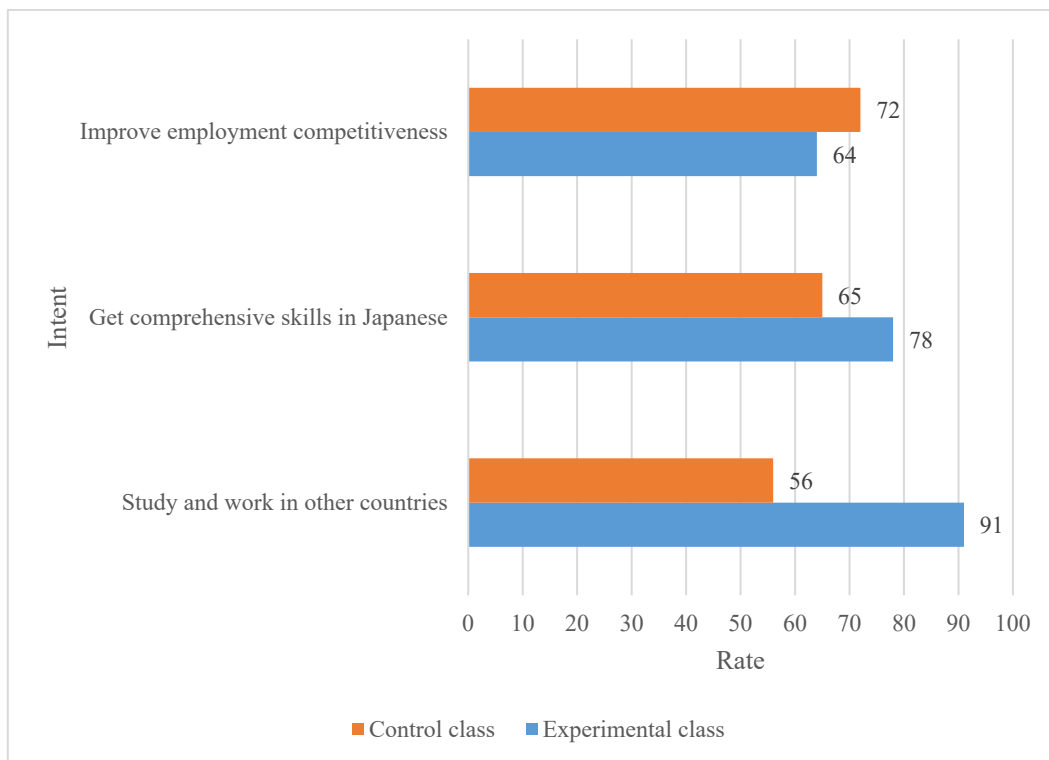*Figure 1: Basic Information of the Students.*

Figure 2: Learning Motivation and Goals of Both Groups.

As shown in Figure 2, in the experimental class, 91% of students stated that their main motivation for choosing to learn Japanese was to study in other countries or work, and 78% of students expressed their desire to acquire comprehensive skills in Japanese listening, speaking, reading, and writing. 64% of students believed that learning Japanese was beneficial for improving their job competitiveness. In the control class, only 56% of students believed that the purpose of learning Japanese was to go to other countries. 65% of people wanted to acquire Japanese skills, and 72% of students hoped to improve their employment competitiveness through Japanese.

As shown in Figure 3, this paper could find that through the pre and post experiments of traditional Japanese learning groups and collaborative learning Japanese groups, the survey results of changes in learning achievements, learning efficiency and learning satisfaction were obtained. Among them, the experimental group using network resources and technology for collaborative learning improved learning efficiency by 45% and learning satisfaction by 36%. The learning efficiency of traditional Japanese teaching methods increased by 8% and satisfaction increased by 10% after a period of habit.
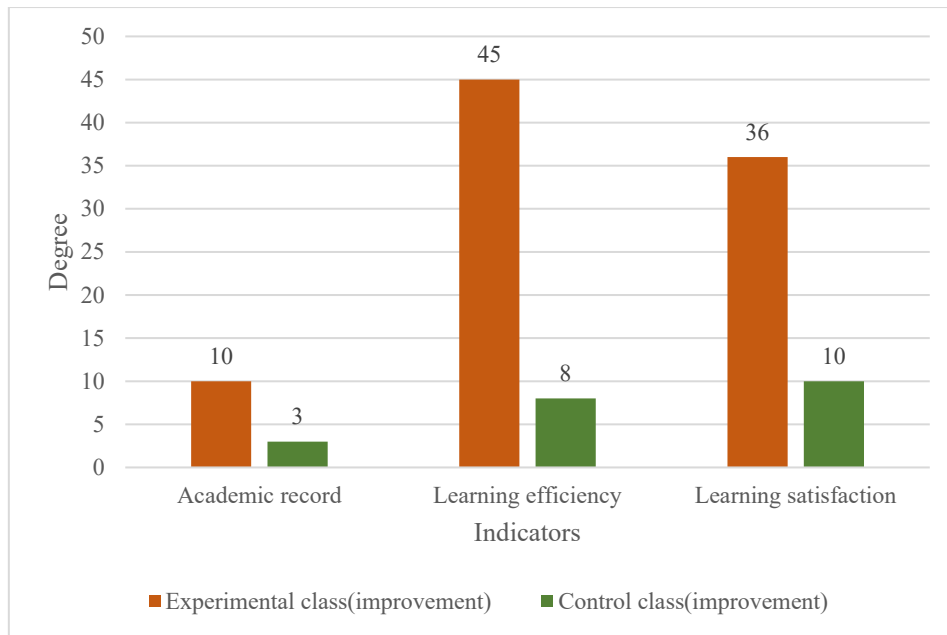
Figure 3: Improvement academic Performance, Learning Efficiency and Learning Satisfaction.
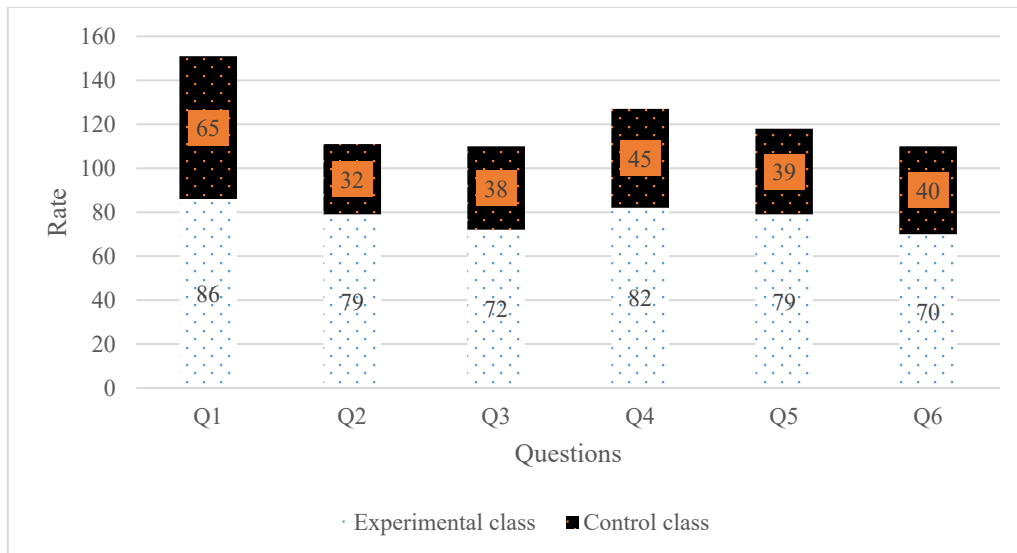

Figure 4: The Role of Collaborative Learning.

As shown in Figure 4, 86% of the students in the experimental group believed that collaborative learning was more conducive to improving language skills. 79% of the students were willing to cooperate with others in cooperative learning, and 72% of the students felt more successful in learning. 79% of the students felt that collaborative learning enabled them to better understand the Japanese language, and 70% of the students said they learned more Japanese language knowledge. The survey of relevant data in the control group was small, and only a few students recognized the role of collaborative learning. Through the results of the above questionnaire survey, this collaborative learning model could be further improved and enhanced, and its application effect could be improved.

5. Conclusions

Collaborative learning also plays a significant role in improving students' interest in learning, actively participating in the classroom, and improving their learning ability and efficiency. Most students think that this collaborative learning mode is very suitable for themselves, which is conducive to communication and mutual help. Some people think that this mode is too dependent on the network environment, and is vulnerable to external factors such as network conditions. To sum up, the collaborative learning mode of college Japanese under the network environment has obvious effects in

improving students' listening, speaking, reading and writing skills, and can stimulate students' learning interest and participation, but it needs to pay attention to the impact of network conditions. The purpose of using questionnaire surveys and practical methods is to collect students' evaluations and improvement directions for this model, while also making a scientific evaluation of the classroom teaching process and effectiveness of this model. Through the analysis of the questionnaire data and practical experience, this paper aimed to find a suitable implementation method of collaborative learning, and provided strong support for the implementation and promotion of the collaborative learning model of college Japanese.

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