

The Effects of Cooperative Learning on Students' Learning Achievement

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Abstract

This study was conducted in a Hong Kong secondary school classroom with a number of 29 students, aiming to investigate how the effects of cooperative learning contribute to students' learning achievement in classroom. Three steps-Planning, Implementation and Evaluation were adopted in this action research. Quantitative data were collected, including self-evaluation, peer evaluation and questionnaire, as well as class observation. Statistics analysis was used for evaluating the obtained data. Results positively showed that cooperative learning did motivate students' learning and promote their class achievement. This finding highlighted the importance of cooperative learning and its positive effects on students' learning achievement.

Keywords

Cooperative learning; Students' learning; Achievement.

1. Introduction

This study was implemented in a Hong Kong secondary school Grade 1A class, consisting of 29 students. Students from 1A class have a higher-level learning performance than the rest same grade classes in this school. During our first visit to this school, we observed that the students performed passively in class, showing a low learning motivation. Based on such observation, in order to enhance students' learning achievement, we made some interventions in our teaching practice the second time in this school. We adopted the cooperative learning strategy combining with activities. We believe this strategy will benefit both the students and the teacher in the learning and teaching process. Therefore, this study attempts to examine the effects of cooperative learning on students' learning achievement.

2. Literature Review

"Cooperative learning is an organizational structure in which a group of students pursue academic goals through collaborative efforts. Students work together in small group, draw on each other's strengths, and assist each other in completing a task" (Hilke, 1990, p.8). "Researchers have found an increase in academic achievement when cooperative learning is used at both the elementary and secondary levels" (Hilke, 1990, p.25). There are many advantages in cooperative learning at different levels. Studies such as Gomleksiz (2007) and Johnson and Johnson (1994) show that cooperative learning is more effective than competitive or independent learning in improving academic performance and promoting positive interpersonal relationships. Pablo (et al., 2015) also shares the opinion that cooperative learning helps stimulate higher academic achievements and promote higher-level reasoning and critical thinking skills, as well as interpersonal and social skills, and provides greater intrinsic motivation to learn. Cooperative learning is an instructional strategy wherein students are required to share responsibility within groups to meet group goals. "Each person is responsible for his own learning and for assisting others" (Hilke, 1990, p.8).

3. Research Question

According to Locke (1996), learning motivation is the main driving force to stimulate English language learning, and it is the driving force to maintain long-term and dull learning process. Gardner and Lambert (1959) believe that learning motivation encourages individuals to learn more, improve individual cognition and maintain learning activities so as to improve their academic performance. Hedge (2000) thinks that learning motivation is very important in classroom learning. How can the cooperative learning strategy affect students' motivation and their achievement in classroom?

4. Intervention

Based on our class observation during our first visit to the school, we found that students were arranged in a row seating. According to Rosenfield (et al., 1985), row seating was not a favorable arrangement to improve student off-task behaviors and to increase interpersonal relationship. The class teacher asked the students to do a lot of reading drills and then invited students to check the answers. To a great extent, it made students feel bored and lose their learning motivation. We also noticed that many students were absent-minded when they were doing the reading exercise, especially the students in the back row. In view of this situation, considering the students are junior grade, we adopted Jigsaw cooperative learning strategy combining with games in the teaching practice. As mentioned by Phillips (1993, p.79), "classroom games in foreign language teaching help students to see learning English enjoyable and rewarding. Playing games in the classroom develops the ability to cooperate, to compete without being aggressive, and to be a good loser." We believe that cooperative learning combining with game learning can stimulate students' motivation, enhance their classroom participation, promote positive intergroup relations and communication skills and improve their thinking, interaction and problem-solving skills, as well take care of learner diversity among students.

4.1. Arrangement of Seats

We implemented the cluster seating arrangement where the students are seated in pairs, so they can have easy access or social interaction with their partner. Simmons (et al., 2015) holds the view that cluster seating has found to be effective in student collaborative learning and increasing of off-task behaviors. Rosenfield (et al., 1985) in their research found that cluster seating had a positive effect on social interaction and active participation in class discussions.

4.2. Topic

We chose the topic of food in the unit six from their textbook. There are two reasons for choosing this topic. The first reason is to keep up with the progress of their class, and the second reason is that the topic is related to their daily life so everyone might be interested in it and active in discussion.

4.3. Teaching Material

We utilized the Graphics Interchange Format (GIF) animations and pictures to give students a visual presentation on words learning. According to Altintas (et al., 2017, p.1113), "GIF animation is a kind of picture, which is created by displaying a sequence of frames, composed of several pictures where we see these pictures in sequence. Animation presentation was found to provide understanding of information and to facilitate learning." Pictures definitely draw students' attention and arouse their interest of leaning easily. In the study of Maruya (et al., 2016), it was found that using a visual stimulus has a significant effect on learning. Shi (2011) describes that the more intuitive and visualized content, the more lasting attention on learning, and a better learning result. Zhuang (2011) points out that pictures are authentic and objective

which are easy to build language contexts and bring about hours of pleasure for both learning and teaching. According to Chomsky (1988, p.181), the importance of activating the motivation of a learner is, "ninety-nine percent of teaching is making the students feel interested in the material."

4.4. Grouping

During our class observation, we found that when the teacher assigned reading tasks to students and required them to finish within a group, students could quickly form their own group. They had the inertial thinking sitting in a fixed position, which showed that there must be a fixed study group in the class. In our teaching practice, we used poker to group, stipulating people who hold the same number to form a group. Students were randomly assigned to seven groups, four for each group. Because there were 29 people on the day, one of the student who got King could choose to join one of the groups. We believe that this way of grouping can give students a sense of freshness and mystery so that their interest could be aroused, because no one can predict who they will be with, and this way of grouping can also enable them to make new partners and enhance their interpersonal relationship.

4.5. Activity

Based on our class observation, we found that the teacher did not design activities except boring reading exercise, so students showed a very low learning motivation and performed passively in class discussion. Considering this situation, we designed two activities in our teaching practice, role play and Jigsaw combining with game element. According to Harmer (2007), game creates a bridge between learning and doing. Kim (1995) states that classroom games create a meaningful context, which can help teachers achieve good classroom dynamics in language teaching, energize a dull lesson and encourage students to cooperate and communicate.

4.6. Award

The Jigsaw activity we used in our teaching practice was a group work and a competing activity between groups, because the first group who finish and get the right answer will receive a prize as encouragement, which is a way of using external stimulus. According to Arnold (2000, p.14), "extrinsic motivation comes from the desire to get a reward or avoid punishment, the focus is on something external to the learning activity itself." "Typical extrinsic rewards are money, prizes, grades, and even certain types of positive feedback" (Brown, 2002, p.156).

5. Data Collection

To make sure that our findings will attain a high degree of trustworthiness, we collected four kinds of data from both our observation and the students.

5.1. Classroom Observation

Our classroom observation mainly focused on students' class performance. The observation was used to compare students' performance before and after intervention.

5.2. Self-evaluation Form

Crooks (1988) points out that evaluation can provide students with knowledge of results and help students monitor their own learning progress, and influence students' continuous motivation. We asked students to fill in this worksheet mainly to understand their mastery of knowledge and further to examine whether our teaching method has achieved the expected teaching results.

5.3. Peer-evaluation Form

“A vast majority of research on peer-evaluation has found it to be more reliable than self-evaluation” (Ho, 2014, p.28). The peer-evaluation form was used to investigate the effectiveness of after intervention cooperative learning strategy.

5.4. Questionnaire

The questionnaire consisted of yes or no question, open-minded question and multiple choice, which was used to measure the effectiveness of the intervention.

6. Data Analysis

6.1. Classroom Observation

Compared with our previous observation, after intervention, we found that students were more active in class participation and showed a more enthusiastic learning motivation than in the previous class. Before intervention, only several students in the front seats gave response to teacher’s question. After intervention, the whole class, especially the students sitting in the back, could actively get involved in the class discussion and group work.

6.2. Self-evaluation Form

The total number of the class is 29. From Figure 1, we can see that our intervention had a satisfying result on individuals, especially learning through role play, more than half of the students did well and showed a strong interest in learning.

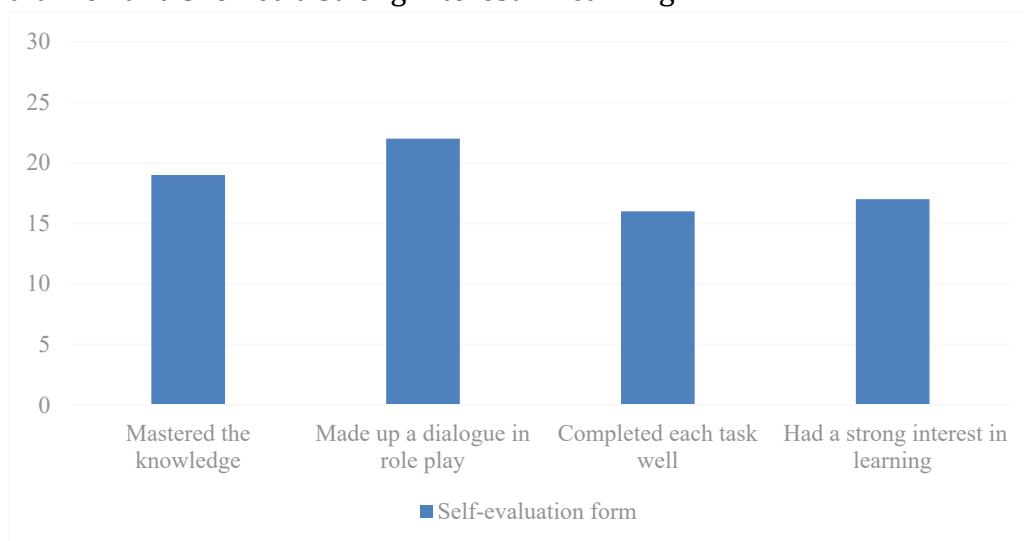


Figure 1. Self-Evaluation Form

6.3. Peer-evaluation Form

We only got 26 peer-evaluation forms in total. From Figure 2, we can see that the effect after intervention on cooperative learning showed a positive result. Almost all students agreed that peers did help group work.

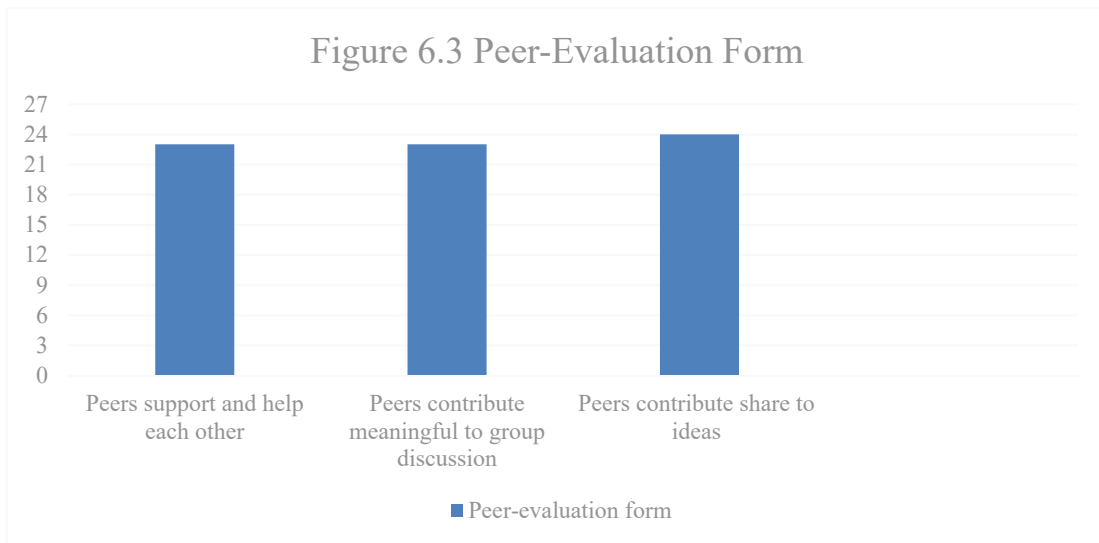
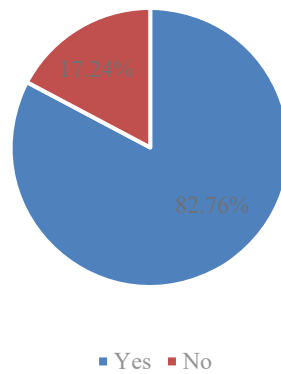


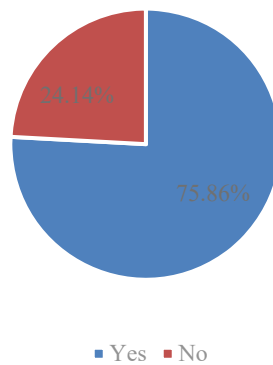
Figure 2. Peer-Evaluation Form

6.4. Questionnaire

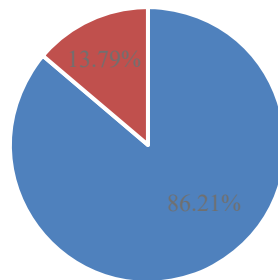
6.4.1 Do you think sitting with a partner next to you can help you learn better?



6.4.2 Do you like the topic?

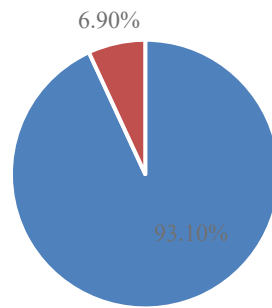


6.4.3 Do you like the class activities?



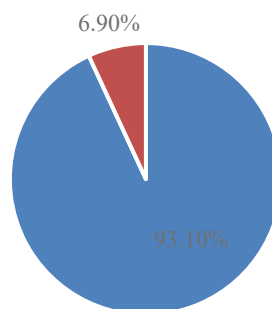
■ Yes ■ No

6.4.4 Do you like the way of grouping?



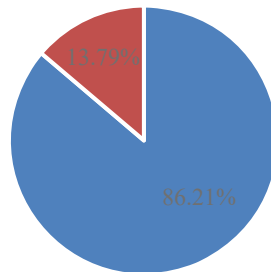
■ Yes ■ No

6.4.5 Do you agree that you can achieve more when you work with other students than you work alone?



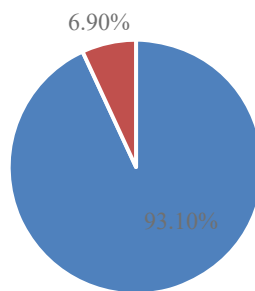
■ Yes ■ No

6.4.6 Do you agree that group activities can make the learning experience easier?



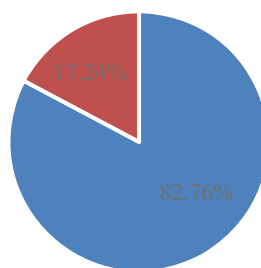
■ Yes ■ No

6.4.7 Do you agree that your work is better organized when you are in a group?



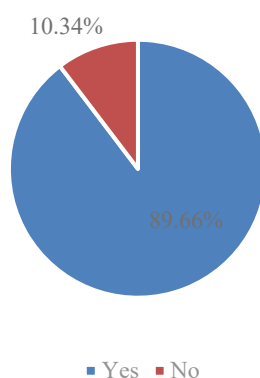
■ Yes ■ No

6.4.8 When working with other students, does it enhance your class participation?

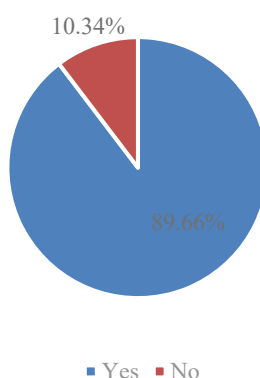


■ Yes ■ No

6.4.9 Do you think that compete with other groups can motivate your learning?



6.4.10 Do you want your teachers to use more group activities?



7. Findings

Based on the data analysis, we found that there was a significant improvement in students' class participation. The data collected from formative assessment and questionnaire showed a positive feedback about the intervention. Most of the students agreed that cooperating with peers can ease the task so that they can achieve more and have active participation in class discussion. In addition, they also felt their task well-organized in group work which greatly enhanced their learning motivation. Through cooperation, students' communication skills and interpersonal relationships have also been improved, which is why nearly ninety percent of the students want their teachers to continue using cooperative learning in the future. Another finding is that competition can as well enhance students' learning motivation, which in other words shows that activity has an important impact on creating a pleasant learning environment. Besides, teaching material plays a major role in the whole teaching process. Interesting teaching materials attract students' attention and arouse their learning motivation. Incorporating all these aspects in a cooperative work can result in students' effective learning outcomes and stimulate their learning motivations

8. Conclusion

8.1. Limitation

Despite some successful findings in this study, the following limitations are still worth taking into consideration. Firstly, the experiment was conducted on a small scale of students in a very short time, making the data collected unable to reflect the real learning situation of other students well. Secondly, there is a drawback in random poker grouping. A group may appear students who are all high ability or low ability gathering in one group, which may not effectively achieve learning outcomes. Thirdly, in the long run, using extrinsic motivation as stimulus is not practical for students' development. Liu (2015, p.13) also claims that extrinsic motivation "will not be helpful for students to work on developing a love of knowledge."

8.2. Implication

Due to the limited time and participants, further researches are needed to investigate the effectiveness of cooperative learning on a larger sample in a longer period time of experiment on how to promote students' learning motivation, especially for high achievers who are hard to benefit from peers in cooperative work.

Our research finding showed that cooperative learning enhanced students' learning motivation and class achievement because we incorporated class activities in it. Therefore, we recommend teachers to incorporate activities in cooperative learning so that students can actively get involved in learning process. Meanwhile, teachers should pay more attention to the design of teaching materials. "Learning will be permanent if the material used has visual and educational characteristics that are relevant to the topic" (Altintas, et al., 2017, p.1118).

Though cooperative learning can be a very effective instrument in improving students' learning, it might also encourage the students to be too dependent on their peers. Therefore, for students' long-term development, teachers should try to enhance students' intrinsic motivation. "Research indicates that intrinsic orientations have a deep influence on learning, particularly for long-term retention" (Liu, 2015, p.13). "Our language learners will generally have a better chance of success with the development of intrinsic forms of motivation" (Brown, 1994, p.39).

References

- [1] Altintas, E., Iigun, S., & Kucuk, S. (2017). Evaluation of use of Graphics Interchange Format (GIF) animations in mathematics education. *Educational Research and Reviews*, 12(23), 1112-1119.
- [2] Arnold, J. (2000). *Affect in Language Learning*. Beijing: People's Education Press.
- [3] Brown, H. (1994). *Teaching by Principles: Interactive language teaching methodology*. NY: Prentice-Hall Regents.
- [4] Brown, H. (2002). *Principles of language learning and teaching*. Beijing: Foreign Language Teaching and Research Press.
- [5] Chomsky, N. (1988). *Language and problems of knowledge*. Cambridge: MIT Press.
- [6] Crooks, T. J. (1988). The impact of classroom evaluation practices on students. *Review of educational research*, 58(4), 438-481.
- [7] Gardner, R. C., & Lambert, W. E. (1959). Motivational variables in second-language acquisition. *Canadian Journal of Psychology*, 13(4), 266.
- [8] Gomleksiz, M. N. (2007). Effectiveness of Cooperative Learning (Jigsaw II) Method in Teaching English as a Foreign Language to Engineering Students (Case of Firat University, Turkey). *European Journal of Engineering Education*, 32(5), 613-625.
- [9] Harmer, J. (2007). *How to teach English*. Harlow: Pearson Longman.

- [10] Hedge, T. (2000). *Teaching and learning in the English classroom*. Oxford: Oxford University Press.
- [11] Hilke, E. (1990). *Cooperative learning*. Indiana: Phi Delta Kappa Education Foundation.
- [12] Ho, P. W. (2014). *The effects of peer-evaluation on self-evaluation skills in the music classroom*. Michigan: ProQuest LLC.
- [13] Johnson, David W., & Johnson, Roger T. (1994). *Learning together and alone: Cooperative, competitive, and individualistic learning*. Boston: Allyn and Bacon.
- [14] Kim, L. S. (1995). Creative games for the language class. *English Teaching Forum*, 33(1), 35-36.
- [15] Liu, M. (2015). *The application of classroom games in the teaching of Middle School English words*. Chengdu: Sichuan Normal University.
- [16] Locke, E. A. (1996). Motivation through conscious goal setting. *Applied and preventive psychology*, 5(2), 117-124.
- [17] Maruya, T., Tano, S. I., & Hashiyama, T. (2016, July). Preliminary quantitative evaluation of effect of learning from text, illustrations, and animations on understanding. *International Conference on Human-Computer Interaction*, 249-254.
- [18] Pablo, M., & Gallardo, E. J. (2015). Teaching to training teachers through cooperative learning. *Procedia-Social and behavioral sciences*, 180, 401-406.
- [19] Phillips, S. (1993). *Young learners*. Oxford University Press.
- [20] Rosenfield, P., Lambert, N. M., & Black, A. (1985). Desk arrangement effects on pupil classroom behavior. *Journal of Educational Psychology*, 77(1), 101.
- [21] Simmons, K., Carpenter, L., Crenshaw, S., & Hinton, V. M. (2015). Exploration of classroom seating arrangement and student behavior in a second grade classroom. *Georgia Educational Researcher*, 12(1), 51.
- [22] Shi, L. (2011). *The Theory of Learning*. Beijing: People's Education Press.
- [23] Zhuang, J. (2011). *The application of images in primary school English Teaching*. Chengdu: Sichuan Normal University.