

# **The Effects of Cooperative Learning Techniques on Thai Secondary School Students' Reading Comprehension**

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## **Abstracts**

This study examined the effect of cooperative learning on reading comprehension and sought to explore participants' attitudes toward the CL method. Ninety Thai EFL secondary students were divided into the control group ( $n=30$ ) and the experimental group ( $n=60$ ). Their age ranged between 13 and 14 years old. They had studied English for more than seven years, and none of them had studied English in an English-speaking country. Three research instruments were employed to collect the data: a reading comprehension test, a questionnaire, and a semi-structured interview.

The quantitative data were analyzed using *t*-test, standard deviation, mean, and percentage. The results showed that the CL method could lead to gains in reading comprehension among Thai secondary school students. Participants in the group control scored 10.76 at T1 and 10.90 at T2. However, it must be noted that, in the current study, the CL and control groups had significantly different levels of reading comprehension before the investigation, which limits the conclusions of this study. And the overall means of the self-ratings from the attitude questionnaire was 3.45. Nevertheless, the qualitative findings supported the benefits of the CL method and the positive attitudes toward the CL approach. Overall, the current results support the benefits of cooperative learning on reading comprehension, and CL also developed secondary students' attitudes toward reading comprehension.

**Keywords:** Cooperative Learning; Reading Comprehension; Teamwork

## **Introduction**

Reading comprehension, the creation of meaning from texts provides the basis for a substantial amount of learning for young children during their school years (Brunstein, & Kieschke, 2009 : 272–286). Moreover, reading comprehension lays the foundation for the acquisition of knowledge in different subjects taught at elementary and secondary schools and constitutes an essential prerequisite for lifelong learning in adulthood (Alvermann & Earle, 2003 : 12-30). Over the decades, a good deal of educational research on reading comprehension has been concerned with the development of instructional curricula designed to promote the early acquisition of reading skills in elementary schools. One significant viewpoint of this research is that secondary-level students should be prevented from prolonged lack of skilled reading.

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However, it was documented that a large portion of the English Proficiency Index (EF EPI) revealed that Thailand was 89th of 100 countries. Moreover, the National Institute of Educational Testing Service (NIETS) of the Ministry of Education, 2020: 421), operating the Ordinary National Educational Test (O-NET) in the English language, found that 9th-grade students' overall English test performance was below 50 percent, equivalent to 33.75. These findings have indicated that the English proficiency levels of Thais are below the international average of literacy skills in the English language, with a nonage of considerably below age-appropriate levels, especially in the field of reading.

The cooperative learning (CL) approach is the widely-known pedagogical method designed to improve students' reading comprehension skills is a cooperative learning (CL) approach (Jalilifar, 2010 : 96-108). According to (Slavin, 1982 : 149-157), CL is an instructional approach in which students of all levels of performance work together in a small group towards a shared goal which incorporates instructional techniques, such as Student Team-Achievement Divisions (STAD), Cooperative Integrated Reading and Composition (CIRC), Jigsaw, Team- Game-Tournaments (TGT), Learning Together, Team-Assisted Individualization (TAI), Group Investigation (G.I.), and group discussion. As such, CL contains the theories of cognitive development, behavioural, and social interdependence (Johnson, Johnson, & Smith, 1998 : 231). The cooperative learning was chosen because of their many benefits, methods and strategies to use in classroom for enhance many skills.

Research has shown that CL is an essential tool to help students learn comprehension strategies while encouraging positive interactions among peers. For example, Marzban & Akbarnejad (2012) investigated the effect of cooperative reading strategies on improving the reading comprehension of Iranian university students. Sixty male university students were randomly assigned to the experimental group using cooperative reading strategies and the control group using a traditional method of instructions. Their result showed that cooperative reading strategies were effective in improving reading comprehension among students. Another study examined the effect of cooperative learning in university learners, suggesting that the cooperative learning group of participants outperformed the control group (Pan & Wu, 2013 : 13-27). Indeed, cooperative reading strategies were effective in improving the reading comprehension of Iranian university students. Research also showed that students had a positive attitude toward cooperative learning, which, in turn, increased learner motivation (Liao, 2014 : 128-140.).

In the literature, cooperative learning techniques facilitate secondary school students' reading comprehension (Ghaith & Malak, 2004 : 105-115; Gillies & Ashman, 2000 : 19-27). Specifically, CL techniques allowed students to work in small groups, which provided learners with opportunities to communicate with peers. Such activities, including Jigsaw, Team-Assisted Individualization (TAI), increased group members' communication and reduced learning anxiety, thus encouraging reading comprehension development. For example, one study investigated the difference in 63 students' reading comprehension ability using Student-Teacher Actively Reading Text (START) and TAI models (Slavin, 2008 : 149-157). The findings indicated both START and TAI were effective in improving students' reading comprehension; however, TAI was significantly lower than START (Sihombing & Katemba, 2019 : 32-43).

In the Thai context, the (Department of Curriculum and Instruction Development, 2010 : 12) argued that the cooperative learning approach promotes student-student interactions through working in small groups to reach their shared goal and maximize their learning achievements. Indeed, CL emphasizes cooperation in helping each other to acquire knowledge

and increases opportunities to construct or transform the knowledge among students actively. Numerous studies have also shown that cooperative learning produced higher achievement and more positive relationships among students (Jatupan & Sanukul, 2017 : 524-533 ; Murtono, 2015 : 79 ; Scaglion, 1992 : 245-253 ; Yotayut, 2012 : 29). However, these studies mainly focus on the effects of CL and its relationships among university students. For example, (Jatupan & Sanukul, 2017 : 524-533) investigated the benefits of CL and the satisfaction level in Pharmacy students and found that CL supported learning conditions. Still, it was doubtful whether learning achievement was fostered.

To the best of the researcher's knowledge, a few studies in Thailand have been done on high school students. One study compared the achievement of the science of year-3 students between the implementation of the cooperative learning-based approach and conventional methods (Yotayut, 2012 : 29). The findings suggested that the cooperative learning-based approach significantly outperformed the conventional one. Another study investigated the effect of word spelling skills using the CL and found that the word spelling achievement of students was significantly higher (Thippawan, 2002 : 65). Students also showed a positive attitude to the CL technique. Accordingly, the current study seeks to examine whether the CL method focusing on Think-Pair-Share (TPS) in the present study effectively promotes students' English reading comprehension in secondary education. According to National Institute of Educational Teaching Service (Public Organization) averaged Ordinary National Education test (O-NET) scores of 2018-2020 of 29.81 in Language for Communication and 26.81 in Language and Culture which the results of Thais students at lower secondary school level. Obviously, O-NET results was used to reflect the school accountability and quality of students' education.

The small-group discussion method is one type of CL activities. It involves a series of meetings between the teacher and students or amongst students under the teacher's direction and guidance that allows for a free exchange of ideas on a particular topic (Garcia, 1989 : 69-93). In addition, it can be said that small group discussion helps participate freely and actively. It includes special activities or formats that help interest and engage people. Furthermore, when conducted prudently, the small group discussion method provides for the actual experience of speaking, vicarious experience of observing a group mate, and boosts one's perception of one's ability. Hence, the small group discussion method/approach where English is used as a medium of communication/discussion may be a vehicle to improve reading comprehension.

## **Research Objectives**

The present study determined whether cooperative learning (CL) effectively promotes Thai secondary school students' overall reading comprehension performance by using small-group discussion tasks and activities. It also sought to explore participants' attitudes toward a small-group discussion. As such, two research questions were formulated, as follows:

1. Do Thai secondary school students improve their English reading comprehension through cooperative learning?
2. What are Thai secondary school students' attitudes toward cooperative learning?

## Research Methodology

### 1. Participants and setting

The participants in this study included 90 students in Thai secondary in 8th grade. All the participants were Thai, and their age was between 13 and 14 years old. This participants were selected by purposive sampling. Basically, the participants had studied English for more than seven years, and none of them had studied English in an English-speaking country. Based on the national curriculum, the participants regularly received an average of four hours of English instruction per week. In addition, all participants had been enrolled in English as a foreign language (EFL) classes for at least seven years as compulsory subjects.

The socioeconomic background of their family was relatively low since most of their parents were farmers, and a few of them were government officers. The number of students was limited; therefore, the convenience sampling technique was used to separate participants into two groups. Indeed, one intact class was in the control group, and the other was assigned to the experimental group. It was assumed that both groups of participants are homogenous, and their language proficiency was similar. However, the experimental group received the cooperative teaching approach, a group work discussion, whereas the control group received a grammar-translation approach, a traditional teaching approach at a secondary school. Overall, the current study lasted for ten weeks.

### 2. Research instruments

#### 2.1 Reading comprehension test

A reading comprehension test was used to assess participants' reading comprehension both before and after the experiment. The reading comprehension test comprised four sections presented in the form of multiple-choice, gap-filling, true/false and matching formats. Each of the sections contained 15 test items with a total of 60 items. The content validity of the test items was evaluated by three experts in the field of language testing. The experts asked to rate each item, whether it was congruent with the objectives and the literal level of comprehension by utilizing the evaluation constructed by the researcher. The reading comprehension test was developed based on the topics or themes relevant to the national curriculum. Moreover, the test items were validated and piloted before the main study, with a different group of participants, none of whom were excluded from the main study.

#### 2.2 Questionnaire

The questionnaire used in the current study to assess Thai high school students' attitudes toward cooperative learning technique. The questionnaire involved participants' attitudes toward the cooperative learning technique with small group discussion designed using a five-point Likert scale. The questionnaire was developed and validated before the main study with five experts in the field of English language teaching. The participants were asked to tick (/) the number that was the most suitable to them:

Strongly disagree	1 point
Disagree	2 points
Neutral	3 points
Agree	4 points
Strongly agree	5 points

The questionnaire was designed in both English and Thai. Still, the Thai version was distributed to participants to ensure that the respondents understood the items in the questionnaire.

### 2.3 Interview

A total of 12 participants was purposively selected for the interview based on their reading comprehension test scores. Indeed the interview was employed to explore the participants' reading comprehension strategies and attitudes toward cooperative learning, which refers to the small-group discussion activity in this study. The interview was conducted in Thai, the participants' mother tongue to minimize the language barriers. The content of the interview questions was by at least five experts in the field of language learning.

### 3. Data collection procedure

All participants were requested to sign a consent form before the main study. Permission from the school was obtained before the study. The reading comprehension test was given to all participants one week before the study and one week later the experiment. The questionnaire was given to all participants at two different times, the week before and after the study. Before the test and the questionnaire were administered, the instructions and a few illustrations of both test and questionnaire were provided to all participants in their native Thai language.

#### 3.1 Selecting the topics for small-group discussion

The topics selected for Read-and-Share Discussion (RSD) activities that under the umbrella of cooperative learning were selected based on the Basic Education Core Curriculum B.E.2551 (A.D.2008), which consisted of animals, environments, foods, beverages, health, technology, climates, and educations. It noted that students' prior knowledge. Each of the reading texts was assumed to include a range of 200 words to 250 words, and Range Program checked the readability of the texts. The Range program was used to check and facilitate the reading process and ensure that the input was comprehensible.

#### 3.2 Teaching procedure

1. Teacher provided a title which was discussed. Teacher as a facilitator prepared the material that was discussed and given to students before the class began. Introducing a consent package before participating in the study for them to understand their role.

2. Teacher guided students in forming small group discussion under umbrella of cooperative learning. Teacher helped students choose the members of the group. Students was divided into several group based on small group discussion method rules with three to five students within a group. The teacher made the heterogeneous group includes the characteristics of intelligence, learning motivation, gender, or different ethnic backgrounds.

3. Teacher gave the material and students in each group predict it. Teacher not only provided the material, but also helped students to explain what they did such as after getting the material each student in group had to prediction by looking at the title of the text first to know what the text about. After they got what the text about, they could discuss their information or knowledge that related with the text.

4. The students discussed a topic in their group and teacher moved around the class. After they finished in discussion, to make sure that their prediction in true or not they read the text together.

5. Then, each group discussed about their discussion result to another group. After getting the discussion between members of the text the representative of each

group discusses the result of their discussion to another group. The other members in the group debated, clarify gave opinion, and criticized the result of discussion from another group.

6. The teacher explained about the material. Teacher helped students to explain in details what they have learned and the teacher may give corrections if any.

7. Finally, each student tried to answer the questions that had been prepared in the text. After discussion between group and teacher, each student tried to answer the questions individually based on the tasks that had been provided by the teacher. It was better for the teacher to arrange the class to form the group, gave them instruction of how to start learning until the class ends.

#### 4. Data analysis

Descriptive and inferential statistics was used to analyze the quantitative data. The means, standard deviations, percentage, t-test statistics were employed to report the study's findings. The data from the interview was analyzed by content analysis. Intercoder reliability was used to avoid bi

### Research Conceptual Framework

The cooperative learning (CL) approach is a teaching approach in which learners of various abilities, skills and backgrounds work together in small groups to attain a common goal and group learning activity organized in order that learning is dependent on the socially structured exchange of information between learners in groups and in that each learner is held accountable for his or her own learning and is motivated to increase the learning of others.

### Research Results

1. Do Thai secondary school students improve their English reading comprehension through cooperative learning?

The current study investigated the effect of cooperative learning on lower secondary school students' reading comprehension in a Thai EFL context. The quantitative data were collected from a reading comprehension test administered before (T1) and after (T2) the experiment. Table 1 demonstrates overall performance scores on reading comprehension tests among secondary school participants.

**Table 1** Students' performance scores on reading comprehension test

Group	Time	Mean (60)	%	SD	t-value	sig
Experimental N = 60	T1	15.20	25.33	3.502	2.671	0.01
	T2	16.73	27.88	3.329		
Control N = 30	T1	10.76	17.93	5.103	1.000	0.32
	T2	10.90	18.16	5.215		

The pre-test (T1) mean score of secondary school participants in the experimental group was 15.20 and the post-test score (T2) was 16.73. A dependent-samples *t*-test revealed that this difference between pre and post-test performance was statistically significant.

Participants in the group control scored 10.76 at T1 and 10.90 at T2. This difference was not statistically significant. As shown in Table 4.2, an independent-samples *t*-test was also performed to determine if there were any differences in reading comprehension performance between the control and experimental groups. The data analysis revealed a significant difference between the experimental group and the control group at T1 and T2. However, the significant difference between the groups at T2 may not be at all related to the intervention. This is because the significant difference between the groups at T1 already exists. indicate the real effect of cooperative learning. These results are shown in Figure 1.

Table 2 Reading comprehension performance between experimental and control groups

Groups	Time	Mean	SD	<i>t</i> -value	Sig
Control	T1	10.77	5.104	4.281	0.001
Experimental		15.20	3.502		
Control	T2	10.90	5.215	5.584	0.000
Experimental		16.73	3.329		

Note: \**p*-value is significant at  $\alpha=0.05$

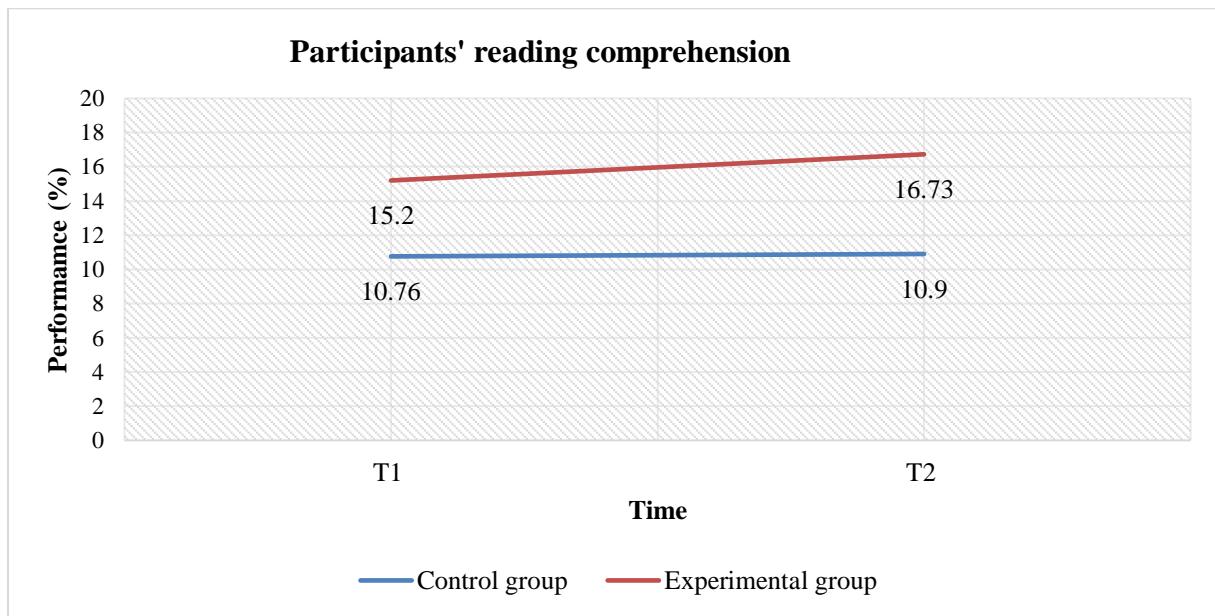


Figure 1 Participants' reading comprehension performance

The results showed the experimental participants' reading comprehension performance was improved after the intervention, while the *t*-test versus post-test performance in the control group was not significant. Reading comprehension was significantly enhanced from pre- to post-test in the experimental group but not in the control group. Overall, these findings indicate that cooperative learning facilitates Thai secondary school participants' reading comprehension.

2. What are Thai secondary school students' attitudes toward cooperative learning?

2.1 Quantitative findings - Questionnaire

Students were asked to rate a 25-item questionnaire to measure their reading comprehension attitudinal variables. The Likert scale ranged from 'strongly disagree' (1 point), 'disagree' (2 points), 'not sure' (3 points), 'agree' (4 points), to 'strongly agree' (5 points). Table 3 shows the questionnaire scores for various statements on the reading comprehension questionnaire. A higher score indicates a positive attitude toward cooperative learning. Questions marked with an asterix were negatively scored.

Table 3: Students' attitudes toward cooperative learning on reading comprehension

<b>Statements</b>	<b>Questionnaire</b>	
	<b>Mean</b>	<b>S.D.</b>
1. When we work together, I can share my ideas with my group.	3.70	0.90
2. When I work with other students, the work is divided equally.	3.78	0.84
3. *One student usually makes the decisions in the group.	2.40	1.09
4. Group members can explain what I do not understand.	3.90	0.89
5. I also learn when I explain the assignment to my group members.	3.30	0.88
6. When I work in a group, I do better quality work.	3.60	0.82
7. When we work together, I achieve more content and information.	3.92	0.85
8. When we work together, it enhances work habits.	3.27	0.77
9. When we work together, I can arrange my work.	3.45	0.83
10. When we work together, I can understand the content easily.	3.48	0.77
11. I enjoy content when I work with other members of my group.	3.57	1.07
12. My group members respect my opinions.	3.25	0.91
13. I understand all members of my group.	3.87	0.98
14. I feel I am part of what is going on in the group.	3.67	0.87
15. I like to help other group members to enhance their knowledge.	3.72	0.78
16. Cooperative learning can improve my attitude towards work.	3.55	0.89
17. Group activity enhances good working relationships among members of a group.	3.75	0.83
18. *Group activity does not differ from work alone.	2.85	0.95
19. *Group activity wastes time because other members are telling other work content; it created lousy work.	2.93	1.17
20. It takes less time to complete the assignment when I work with others.	3.35	1.07
21. *I become frustrated when my group members do not understand the material.	2.90	1.06
22. *In a group activity, only one or two students are important, not all members.	2.92	1.21
23. Group activity is mutual profit.	3.92	0.90

24. *In a group activity, group members do not care about my comments.	3.67	1.00
25. When I work in a group, I get the grade I deserve.	3.63	1.00
<b>Total</b>	<b>3.45</b>	<b>0.35</b>

As shown in Table 3, the overall means of the self-ratings from the attitude questionnaire was 3.45. This suggests that attitude towards cooperative learning tasks was positive after the cooperative learning intervention. Specifically, participants reported that cooperative learning activities benefited language learning, especially their reading comprehension. However, Thai secondary school participants also agreed that cooperative learning could lead to frustration if group members could not understand the materials and that a single group member could influence the group decision.

## 2.2 Quantitative findings - Semi-structured interview

The qualitative findings from the semi-structured interview were also analysed to better understand participants' attitudes toward the effect of cooperative learning on reading comprehension. This Semi-structured interview was developed by Nimar Farsaneh (2014) The qualitative data obtained from the semi-structured interview were coded into descriptive themes based on the cooperative learning concept. As a result, three themes were identified: 1) team, 2) cognition, 3) enjoyment. As shown in Table 4, overall, students felt that cooperative learning strengthened their reading comprehension and the role of the team.

Table 4: Extracts from the semi-structured interviews

Participants	Participants' attitudes
Student 1	“Everyone helps each other. It was better than doing it by herself.”
Student 2	“Some tasks were done by myself because other members cannot translate and lazy to try to tell the meaning.”
Student 3	“It was good because small group discussion makes harmony and enjoyment with the task.”
Student 4	“Cooperative learning increases the knowledge and comprehension.”
Student 5	“Some in a group do not have the participation, but others are very cooperative in their investigation.”
Student 6	“I think it is a better approach because this activity can search for new words and increasing my reading comprehension knowledge.”
Student 7	“Sometimes, members in group delay to distribute the task thus the time is run out.”
Student 8	“I like it very much because everyone in the group can tell opinion about the task.”
Student 9	“It is better because group activity makes good management.” “This approach can manage group activity in which all members in the group know the role of cooperative learning.”
Student 10	“I have the opportunity to teach friends in my group; hence it makes a good experience for me.”

	“I can comprehend the task from my group member.”
Student 11	“This approach makes everyone do the duty, and it puts the harmony.”
Student 12	“Sharing knowledge with friends is a good thing to do. It makes me remember some content that is hard to remember.”

## Discussion

### 1. Thai secondary school students' reading comprehension

The current study investigated the effect of cooperative learning (CL) on lower secondary school students' reading comprehension in a Thai EFL context. The quantitative data analysis revealed that, following cooperative learning (CL), it was obtained from the reading comprehension test administered at two different times, before and after the experiment. The results showed that the secondary school students' reading comprehension increased following CL. This result clearly demonstrates that CL facilitates reading comprehension gains among Thai secondary school participants. This is likely because CL involves students working in teams to achieve shared learning goals. Each member in the group is held responsible for completing their share of the work and mastering the material to be studied. This could be described as “CL techniques allowed students to work in small groups, which provided learners with opportunities to communicate with peers” (Ghaith & Malak, 2004 : 105-115) following Basic Elements of Cooperative Learning in Group processing : by reflecting on the learning process the effectiveness of contribution of the members in the group improves. Moreover, CL is also a group studying activity where learning is dependent on the socially constructed exchange of information between group members. That is, while some of the group work may be parcelled out and complete individually, some must be complete interactively, with group members providing one another with feedback, challenging reasons, making collective conclusions and teaching and supporting each other. The current findings align with previous studies showing that CL promotes reading comprehension (Felder & Brent, 2007 : 34-53 ; Johnson & Johnson, 2008 : 29-30 ; Lavasani, Afzali, & Afzali, 2011 : 1802-1805 ; Marashi & Dibah, 2013 : 545-556).

Reading comprehension is improved because CL provides environments that encourage learners to communicate and express their ideas in the target language. For instance, before the treatment, some students did not know how to get in group and talk with each other to understand the reading. However, after implementing the cooperative learning, the students knew the method, as indicated by significantly improved scores. CL activities, such as Small Group Discussion, also allow group members to learn to share ideas by listening to each other and assisting each other to solve a problem. Learners are provided with the opportunity to apply reasoning and various tools to tackle problems using several one-on-one interactions within a group. Such activities ensure high involvement and participation of every group member, thereby increasing their reading comprehension. Indeed, previous studies have also reported that Small Group Discussion enhances social interactions and skills (Gollnick & Chinn, 2009: 110-117 ; Johnson et al., 2014 : 1156; Nunnery, Chappell, & Arnold, 2013 : 34-48).

The face-to-face interactions among students in CL may also facilitate reading comprehension. These interactions allow participants to discuss and explain assignment topics with each other. This fosters positive interdependence as participants feel that they are 'in the same boat' or 'together' and that each member's attempt will help the entire group. Using teamwork skills, participants learn both the subject matter and interpersonal skills, such as

communication, leadership, conflict management and teamwork. During the activity, participants also employ reciprocal questioning to complete the task. Each team member is therefore responsible for creating an atmosphere of achievement. Overall, the current study provides evidence to support previous claims regarding the benefits of CL (Nunnery, Chappell, & Arnold, 2013 : 34-48).

## 2. Thai secondary school students' attitudes toward cooperative learning

The qualitative data analysis revealed that Thai participants had a positive attitude towards CL activities after the experiment. The positive attitudes towards CL activities is likely because they promote classroom interactions between students of diverse abilities and backgrounds. As such, learners work together, assisting and interacting with each other to solve learning problems and achieve ultimate goals (Tsai, 1998:1081-1089 ; Wei, 1997 : 1853-1870.; Yu, 1995). Indeed, the positive attitudes towards CL may be due to the reliance on teamwork activities (Kuuk & Arslan, 2020 : 83-96; Lavasani, Afzali & Afzali, 2011 : 1802-1805 ; Marzban & Alinejad, 2013 : 936-942; Priyantin, 2014 : 7-9). In CL activities, the teacher often groups students with different levels of English proficiency and encourages them to work together and benefit from each other by sharing their experiences. For example, Small Group Discussion, one of the CL activities, helps the higher proficient students tutor the weaker ones. Some learners may feel isolated because of their low ability to learn English while completing individual tasks in conventional course instructions. Working in teams may stimulate these students to speak out and feel more comfortable in smaller groups or pairs. This may also give them a sense of self-confidence. Moreover, while supporting the weaker learners, students with higher proficiency levels can feel proud of themselves, developing positive attitudes towards the learning tasks during the course.

Based on the interview results, most participants reported positive attitudes towards implementing CL activities, such as small group discussion. In addition, participants noted that the activities could encourage them to speak English as each group member has the individual responsibility to finish the group tasks. The following excerpts support these findings:

“Cooperative learning increases the knowledge and comprehension.” (Student 4)

“This approach makes everyone do the duty, and it puts the harmony.” (Student 11)

In relation to the negative aspects of CL activities, students reported being annoyed when a group member was lazy and could not understand the materials or task instructions. The qualitative data analysis also showed that the interpersonal learning styles needed to be adapted to group work. In addition, many students lack the required vocabulary and this sometimes made it difficult for them to contribute to the group. These findings are illustrated in the following excerpts:

“Some tasks were done by myself because other members cannot translate and lazy to try to tell the meaning.” (Student 2)

“Some in a group do not have the participation, but others are very cooperative in their investigation.” (Student 5)

“Sometimes, members in group delay to distribute the task thus the time is run out.” (Student 7)

Overall, the current findings revealed that CL methods could help learners to better understand the learning materials, thus promoting reading comprehension among secondary school learners. Specifically, learners could acquire more knowledge and enhance their vocabulary. In addition, the results also showed that the small group discussion under umbrella of

cooperative learning activity helps students to be engaged in learning a target language. These results provide further support for the benefits of the CL method.

### **Conclusion**

This study investigated the influence of CL on Thai secondary school students' reading comprehension and their attitudes towards CL activities. For Research Question 1, the results showed that the CL method could lead to gains in reading comprehension among Thai secondary school students. However, it must be noted that, in the current experiment, the CL and control groups had significantly different levels of reading comprehension before the experiment, which limits the conclusions of this study.

Nevertheless, the present study did show that cooperation or classroom interactions make learning engaging and interactive. In CL activities, students are exposed to a learning environment that supports and encourages personal, academic, and social development. Therefore, CL is a teaching method that may address the diverse needs of students with varying levels of English proficiency in a heterogeneous class. Notably, CL emphasizes active interactions between students of diverse abilities and backgrounds, and allows students to work in teams and engage in classroom activities. Importantly, each student is also given an individual task to accomplish within their group task, which helps to ensure that learners take responsibility in their team. Although some intrapersonal students prefer to work individually, they are encouraged to participate to achieve the team's goals. Moreover, allocating the students to groups or pairs can also help the teacher to effectively manage large classrooms.

Regarding Research Question 2, the current study showed that the teacher could change the students' attitudes towards English language learning in an EFL context by applying CL methods. These positive attitudes can influence and increase students' reading comprehension and motivation to involve more in classes. Positive attitudes may also convince students that learning is valuable.

### **Suggestion**

The small number of participants in the current study may limit the generalizability of these findings to other contexts. In addition, as previously mentioned, the groups differed in their English proficiency before the experiment, which makes it difficult to ascertain whether the CL itself was responsible for better reading comprehension in the experimental group during the post-test. Finally, future studies may benefit from studying the effect of CL over longer time periods.

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