Feature Article

Student Attitudes of Cooperative Learning in EFL Classrooms

Tomoko Hashimoto

Meiji University, Graduate Student

Previous research shows that cooperative learning (CL) has positive effects in classrooms. However, there has been limited research conducted comparing the two types of CL: informal (short-term) and formal (long-term). Furthermore, little has been investigated on student attitudes for each. This study takes a qualitative approach to investigate differences and similarities in student attitudes toward CL according to the type they experienced. Students from two EFL university classes participated in the study. One class of students engaged in informal CL (n = 30) and the other, in formal CL (n = 30). After a treatment period of six weeks, a questionnaire was handed out to measure student attitudes regarding their learning experiences. Results obtained showed that student attitudes seem to be affected in different ways according to the type of CL they experience.

The benefits of cooperative learning (CL) in classrooms have been discussed in previous research (Isoda, 2012; Jacobs, Power, & Loh, 2002; Johnson, Johnson, & Holubec, 1993; Johnson & Johnson, 1999), and English language classrooms are not an exception (Asakasa, Kanamaru, Plaza, & Shiramizu, 2016; Jacobs & Kimura, 2013). According to Johnson, Johnson, & Holubec (1993), CL is "the instructional use of small groups so that students work together to maximize their own and each other's learning" (p. 9). Sekita and Yasunaga (2005) defined it as an educational method where students work together to learn and acquire material. The goal is for students to comprehend the importance of working with each other, to personalize what they have learned, and to sharpen their interpersonal skills.

Johnson, Johnson, and Smith (1991) delineated CL into three types: informal, formal, and cooperative base groups. In informal CL, a class period is

divided into short segments. In between each segment, ad-hoc groups conduct group activities which last for a few minutes each (Johnson, Johnson, & Smith, 1991). In formal CL, students stay together for one class period to a few weeks to work on a longer project (Johnson et al., 1991). In cooperative base groups, groups stay together for at least a year and support each other on various issues. Whereas the main aims of informal and formal CL involve academic improvement, cooperative base groups aim to improve academic as well as personal issues (Johnson et al., 1991). Despite the important role of personal issues, this study only investigates informal and formal CL. Table 1 summarizes the differences between informal and formal CL.

CL does not occur simply by putting students in groups and having them work on a task. Johnson and Johnson (1999) introduced five principles of CL which differentiate CL from regular group work, where a number of individuals are simply put in a group and given an assignment to work on. The five principles are positive interdependence, face-to-face promotive interaction, individual accountability, interpersonal and small group skills, and group processing. Positive interdependence means that individuals are dependent on one another for the group to succeed (Johnson & Johnson, 2009; Johnson et al., 1993). Face-to-face promotive interaction involves individuals being present and actively involved in the group. Individual accountability is the idea that each group member realizes the contribution they must make in relation to the group target (Davis, 1999). Interpersonal and small group skills are the social skills needed in order to function effectively as a group (Johnson & Johnson, 2009; Johnson et al., 1993). Lastly, group processing occurs when the group reflects on which member actions were helpful and not helpful and decides on what needs to be changed (Johnson & Johnson, 2009). These five principles need to be present in order for group work to be CL (Johnson & Johnson, 2009; Johnson et al., 1993).

Table 1

Difference Between Informal and Formal CL

	Informal	Formal
Number of individuals	2-3 per group	2-4 per group
Duration	1 class	1-several classes
Purpose	To fill in any gaps in knowledge that individuals may have about class material.	To achieve shared learning objectives and complete jointly specific tasks & assignments, etc.
Description	Once every 10-15 minutes, students are put into ad-hoc groups & are asked to go over info. they have covered in class, answer questions, etc.	Students are in the same group until task completion. Teacher's role is to uncover material with the students, not cover material for the students.(Johnson et al., 1991).
Procedure	1. Teacher asks students to conduct an introductory focused discussion. 2. Teachers encourage turn to your partner discussions intermittently throughout class period. 3. Teachers initiate a closure focused discussion to summarize what students have learned and integrate this into a broader framework.	1. Teacher makes pre-instructional decisions. 2. Teacher announces task and goes over cooperative learning principles. 3. Teacher monitors groups & intervenes when necessary. 4. Teacher prompts group self-evaluation and processing.

Note: Adapted from Johnson et al., 1991.

Previous studies on CL in Japan

The modern use of CL is said to have started in 1966, with roots in social interdependence theory (Johnson & Johnson, 2009; Johnson, Johnson, & Smith, 2014). However, if one focuses on Japan, it is only recently that empirical studies on CL in second language acquisition, namely, English education, have started to be conducted. Empirical studies at various levels of study such as elementary, secondary, and higher education can be found. For example, Erikawa (2012)

introduced 14 practical reports of CL by different researchers at various age groups, concluding that CL is a way for students to communicate candidly in their English studies. Isoda (2012) conducted an applied CL writing activity in his English writing class. Findings suggested significant growth in students' TOEIC writing test scores. A qualitative study conducted by Ohba (2015) involved giving his students a communication task based on the principles of CL in English. He used text mining to analyze open question responses in English. Results showed that individuals in the CL group were more motivated to learn English through the task than those in other groups. Lastly, Makino (2013) conducted a mixed-methods study on CL by administering an English speaking activity in her classroom. Her participants were university students who had a strong dislike for English. Analysis showed that her students thought CL speaking activities helped them improve their English speaking skills.

The empirical research conducted on CL in Japan so far had either only looked at one type of CL or had conducted several types together and analyzed results comprehensively. While this may be worthwhile, studies which compare the effects of different types of CL should also be fruitful as such studies can help practicing teachers of English construct lessons suited for their particular students and curriculum. For example, in a classroom composed of students from various high schools and geographical locations in Japan, teachers may want to withhold conducting formal CL for a while until students feel more comfortable to share their inner thoughts with one another, as this type of CL lasts longer and requires group members to know each other at a deeper level. Therefore, in a classroom such as this, informal CL, where time per interaction is shorter, may be preferable.

In this study, differences in student attitude towards informal and formal CL were investigated. The reason for focusing on attitude is because while attitude toward a target language is a vital factor in acquiring a second language (Dörnyei, 2001; Oxford & Ehrman, 1992), student attitude toward CL has been rarely investigated. Attitude is a relatively stable and broad evaluation of people and things which are often thought of as coming from specific emotions, beliefs, and past experiences linked to these objects (Attitude, n.d.). From this definition,

it can be inferred that there are differences in attitude between individuals. Finally, Lincoln and Guba (1985) stated that whereas a quantitative researcher assumes that "there is a single, tangible reality 'out there'" (p. 37), a qualitative researcher assumes that "there are multiple constructed realities" (p. 37). Thus, a qualitative approach was taken for this study in order to shed more light on the idiosyncrasies of attitude in CL. This study aims to answer the following: Is the type of CL experienced by students related to their attitudes toward CL?

Methods

Participants and lessons

Two beginner-level EFL classes at a private university in Tokyo participated in the study. Both classes were each composed of 30 students, 24 females and 6 males in the Department of Early Childhood Education. All participants were between the ages of 18 and 19 years old and had recently graduated from high school. Students in both English classes were randomly selected at the beginning of the year. The English level of the students in all four skills was presumed to be beginner level according to a quiz conducted at the start of the course and through evaluating classroom activities. There was no significant difference in quiz scores between the two classes indicating that their English abilities were likely to be similar. Students were non-English majors, and the course was mandatory for graduation. None of the students took English lessons outside of school. All had received six years of compulsory English education as part of their secondary school curricula prior to entering university.

Lessons were 90 minutes each and held once a week. Content was English for specific purposes in early childhood education in the four skills (reading, writing, listening, and speaking). Lessons were held in the university CALL (computer assisted language learning) classroom, and teaching materials included textbooks, picture books, and audiovisual educational material.

Research process

The study took place from April to June of the students' first year of university. Although students were aware that they were taking part in an experiment, there

appeared to be no evidence of cross-talk between classes. This might have been because it was explained to them at the beginning of the course that different classes may conduct various activities, but by the end of the year, all classes would have covered the same material and conducted identical activities. My role was both teacher of the classes and researcher for the study.

Prior to any intervention, an informed consent form was distributed and explained to the students. Students were told that participation was strictly voluntary and would have no effect on their grades. All students who agreed to take part in the study were asked to sign and submit the informed consent form. Everyone agreed to take part in the research.

Next, informal CL was conducted on one class, and formal CL on another. After six weeks of intervention for both classes, a free descriptive questionnaire was handed out to students to measure their attitudes on CL. These are explained in more detail below.

In addition to the informed consent form, students signed a consent on the five principles of CL. These were also explained in detail to students prior to the CL activities, and a question and answer session was held to answer any inquiries they may have had about the principles. Upon ensuring that students had a clear understanding of what each principle entailed, they were asked to sign two copies of the consent on the five principles of CL. One copy of the signed agreement was handed in, and the other was kept so they could go over the principles at any time if needed. All students signed the agreement. The five principles were periodically reviewed with the students to make sure they remembered these when participating in group work. Data concerning student attitude was collected via a descriptive questionnaire.

Descriptive questionnaire

The free descriptive questionnaire consisted of the following question and was a long-form written type, "Freely describe your experience and what you learned in conducting CL." Both the questionnaire and student comments were written in Japanese, as the purpose was to know about student attitude and not to measure their English abilities. This data was analyzed using User Local (https://

textmining.userlocal.jp), an on-line text mining system which deconstructs texts written in Japanese. In order to maintain authenticity of the comments as much as possible, the data were analyzed in Japanese, then translated into English. In all, 2,075 Japanese characters for informal CL ($M = 69.17$, $SD = 19.09$) and 3,152 Japanese characters for formal CL ($M = 116.74$, $SD = 21.28$) were assessed. The discrepancy in numbers between the types of CL indicate that students wrote more comments for formal CL than informal CL. Translation was initially conducted by myself and then double checked by a Japanese-English bilingual to ensure reliability.

Analysis

Data for informal and formal CL were analyzed separately to see whether the five principles of CL could be detected from student comments. Comments were tagged according to class (C) and ID in class (student numbers 1-30). Students in class 1 (C1) took part in informal CL, and class 2 (C2) participated in formal CL. An example of how a comment was tagged is as follows: C1-2 would indicate a comment made by the second student on the class list in the informal CL class.

Once it was confirmed that the classes participated in CL, data generated from User Local were analyzed. This was conducted in two ways: frequency of appearance, which only considers how often a certain word is seen, and word clouds, which analyze words and phrases according to frequency of appearance and relevance.

Frequency of appearance was analyzed according to rules of characterization. The words were separated into five categories: words appearing only in informal CL, words often appearing in informal CL, words appearing often in informal and formal CL, words often appearing in formal CL, and words appearing only in formal CL.

Relevance was analyzed by investigating word clouds. The more relevant a word is, the higher the score it has, and the bigger it is shown in word clouds. Words that do not appear as often in normal texts but can be seen many times in the text being analyzed are given a high score. The general logic used behind the scoring system is TF-IDF (term frequency – inverse document frequency)

statistical analysis (User Local, n.d.). For this study, words were categorized into stages by the researcher according to how big they were in word clouds: stage 1 included words with the highest scores, stage 6 included those with the lowest scores. Stage 1-6 words ranged from *otagai-happyou*, *gakushuu-taihen*, *kyoudou-otagai*, *aite-anki*, *iroiro-kureru*, and *ooi-yasui*, respectively.

Outline of research

Table 2 provides an outline of the research. It shows what was conducted from lessons 1 to 8 in the informal and formal CL classes. For both classes, at lesson 1, the consent to participate in study, the consent on the five principles of CL, and an English quiz were administered. During lessons 2 to 7, one class engaged in informal CL and the other in formal CL.

The informal CL consisted of a two-minute introductory focused discussion and a three-minute introduction on material. This was followed by 15 minutes of teacher-led instruction. After this, four minutes were allocated for a turn-to-your partner discussion. The teacher-led instruction and turn-to-your partner discussion routine was conducted four times, followed by a two-minute closure

Table 2

Outline of Informal and Formal CL Class by Lesson

Lesson	Informal CL	Formal CL
1	Consent to participate in study	Consent to participate in study
	Consent on the five principles of cooperative learning English quiz	Consent on the five principles of cooperative learning English quiz
2	Informal CL	Formal CL
3	Informal CL	Formal CL
4	Informal CL	Formal CL
5	Informal CL	Formal CL
6	Informal CL	Formal CL
7	Informal CL	Formal CL

focused discussion and three-minute wrap-up session.

Formal CL consisted of 20 minutes of project work per class. Other than that, teacher-led instruction was administered for 66 minutes. The total time that students engaged in informal and formal CL was calculated to be 20 minutes per class. The formal CL consisted of a task to create a dialogue in pairs and to present this in front of the class. Although a video camera could not be set up due to administrative restrictions, a timer was used to keep track of time.

At the end of the CL period (lesson 8), students were asked whether or not they felt that the five principles of CL were met in their group work, to which three students in the formal CL group replied negatively. Thus, data for these three students were omitted. A descriptive questionnaire was filled out by the remaining students after the study period to investigate student attitudes toward CL. Students in the formal CL class also made presentations prior to answering the questionnaire.

Results and Discussion

Table 3 shows the total number of comments made for each of the five principles. In informal CL, positive interdependence could be perceived from comments such as "because I am not working by myself, I realized that I study more in order not to cause any trouble for my partner (C1-24)." Face-to-face promotive interaction was seen through comments such as "I realized that if one person is absent, no work can be done, so I needed to make sure to come to class (C1-27)." The statement, "I've started to understand what areas I need to study more of to be able to help others (C1-2)" signified the presence of individual accountability. Several students indicated that they had learned interpersonal and small group skills. An example of a remark made from a student is, "I learned how to cooperate with someone who has different opinions from myself (C1-28)." Group processing allowed students to positively reflect on their task through statements such as "This time around, I kept on learning from my partner since my English skills are not that good. I felt bad. If I have a chance to do this again, I would like to contribute more (C1-19)."

Next, data for formal CL were analyzed. The comment "I would not have

Table 3
Total Number of Comments Made in Informal and Formal CL

	Informal CL	Formal CL
Positive interdependence	30	35
Face-to-face promotive interaction	10	20
Individual accountability	21	22
Interpersonal and small group skills	20	20
Group processing	9	8

been able to do the presentation by myself. I did not know that working with another person could empower you so much (C2-21)" is an example which reveals this student realized positive interdependence. The presence of face-to-face promotive interaction was seen through comments such as "I was absent often, so I ended up putting a lot of burden on my partner. If I do another project like this, I will make sure to come to class (C2-1)." Individual accountability was noticed in a statement, "I realized how difficult it is to create a dialogue from scratch and so little English I knew. I will work harder to improve my English skills (C2-18)." Interpersonal and small group skills were present in comments such as "I learned communication skills (C2-21)." Group processing could be seen through the comment, "our group ended up finishing our presentation early, so I regretted not having practiced a couple of times beforehand using a timer (C2-17)."

Comments indicated that CL, not merely individuals working in groups, seemed to have been experienced by students in both classes. It is interesting to note that for both informal and formal CL comments, the two principles that were mentioned the most were positive interdependence and individual accountability. For positive interdependence, informal CL yielded 30 comments, compared to 35 comments for formal CL. There were 21 comments for informal CL and 22 for formal CL on individual accountability. This is not surprising, as these results are in line with previous research which pointed out that the two

principles of CL which are the most widely accepted are positive interdependence and individual accountability (Jacobs & Ball, 1996; Kato, Bolstad, & Watari, 2015; McCafferty, Jacobs, & Iddings, 2006). Also, there is traditionally a *giri* culture in Japan, where people often feel socially obliged to others. This could have been present in this study as well, causing students to work hard so as to not disappoint their group member. Another result of this study is that the number of comments made for interpersonal and small group skills were the same as individual accountability (there were 20 comments for both informal and formal CL). This could also be explained by the *giri* mentioned above, or by the fact that students may have been sensitive to interpersonal issues. This was the students' first semester in university, and social relationships could have still been in their developmental stage.

Next, frequency of appearance was analyzed. A word which only appeared in informal CL comments was "pronunciation" (*hatsuon*) (five times). "Difficult" (*taihen*) (7 times) and "reassuring" (*kokorozuyoi*) (6 times) were seen exclusively in formal CL comments. These results could possibly be explained by the separate aims of the two types of CL. The goal of informal CL is to "ensure that students cognitively process and rehearse the material being taught" (Johnson, et al., 2014, p. 12), whereas formal CL aims "to achieve shared learning goals and complete jointly specific tasks and assignments"(Johnson, et al., 2014, p. 11).

Although there were words seen exclusively for each CL type, there were also some which were similar. For example, one idea which frequently appeared for both types of CL was "fun" (*tanoshii*) and variations of "enjoy". In formal CL comments, "fun" (*tanoshii*) appeared 10 times, and variations of "enjoy" (*yoi, ii*) appeared 14 times. In informal CL comments, "fun" (*tanoshii*) was seen 5 times, and variations of "enjoy" (*yoi*) 12 times.
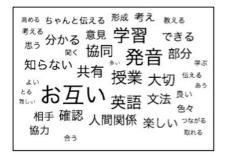
When simply comparing frequency of appearance, it may seem that student appreciation of formal CL may have been higher than informal CL. However, when these values are compared according percentage in total Japanese characters that were written, it can be found that the difference between the two types of CL is minimal. For example, "fun" was seen 0.32% of the time in formal CL comments and 0.25% of the time in informal CL comments. Thus, although

frequency of appearance successfully shows the differences and similarities of words that students used to describe each CL experience, the results cannot be over-interpreted.

Results of the generated word clouds are shown in Figure 1 (The appendix includes a list of the words used in the word clouds for both the informal and formal CL and English translations for each). As mentioned previously, word clouds visualize words according to frequency and relevance. Words are given a score, which rates them according to importance in the text.

A word seen in stage 1 for informal CL was "each other" (*otagai*) (score: 30.43. Numbers shown in parentheses after the words below are the scores for each), and for formal CL this was "presentation" (*happyou*) (34.59). In stage 2, "learning" (*gakushuu*) appeared in both CL types, but whereas informal CL showed a specific English skill, "pronunciation" (*hatsuon*) (21.86), formal CL exhibited "English" (17.56) and "difficult" (*taihen*) (17.95). In terms of number of words in the stage, stage 3 showed twice as many in informal CL than in formal CL. Examples of words in this stage for informal CL were "cooperation" (*kyoudou*) (11.56), "do not know" (*shiranai*) (10.74), "interpersonal relationship" (*ningenkankei*) (12.59) and "understand" (*wakaru*) (10.83). Formal CL words were "cooperation" (*kyoudou*) (16.84), "nervous" (*kinchou*) (10.38), "group" (*guruupu*) (11.01), "communication" (*comyunikeishon*) (11.57) and "each other" (*otagai*) (10.28).

In stage 4, there were over twice as many words for formal CL than informal

Informal CL   Formal CL

Figure 1. Word clouds of descriptive data for informal and formal CL.

CL. Examples of stage 4 words for informal CL were "partner" (*aite*) (6.92), "collaboration" (*kyouryoku*) (7.14), "fun" (*tanoshii*) (9.98), "can" (*dekiru*) (9.89) and "idea" (*kangae*) (7.53). For formal CL, these were "English sentence" (*eibun*) (7.72), "improvise" (*adoribu*) (7.36), "fun" (*tanoshii*) (6.48), "collaboration" (*kyouryoku*) (9.95) and "memorizing" (*anki*) (6.96). Some stage 5 words for informal CL were "various" (*iroiro*) (5.93), "think" (*omou*) (5.12), "properly tell" (*chanto tsutaeru*) (5.98), and "formation" (*keisei*) (5.68). Words in the same stage for formal CL were "troublesome" (*mendoukusai*) (4.81), "reassuring" (*kokorozuyoi*) (3.73), "be able to" (*dekiru*) (5.97), and "receive" (*kureru*) (3.61).

As mentioned before, when considering each word according to its percentage in total number of Japanese characters, the difference between words in each stage is probably not that significant. However, similar to the results of frequency of appearance, students who took part in informal and formal CL seem to have used more dissimilar words than related ones when describing their experience. Thus, there is a possibility that different types of CL may provide students not only with different experiences but also with various practical knowledge.

Conclusion

This study points to the possibility that student attitudes toward CL might have been influenced in different ways according to the type of CL they experienced. The findings suggest that teachers might want to consider implementing different types of CL into their classrooms in order for students to acquire different experiences and practical knowledge.

This study is meaningful as a pilot study to examine the effects that different types of CL have on student attitudes. However, it has its limitations. One is that it did not collect data on student attitude after each CL lesson. This kind of information would have provided more detailed information on which students engaged in CL and which ones did not per lesson. A second limitation involves not taking data on student attitude toward CL prior to intervention. Had this been done, student attitude before intervention could have been investigated, which would have shown how student attitude transitions as a result of engaging

in different types of CL. Finally, it might have been better to analyze words in phrases instead of individually. When conducting analysis, it is important to consider context in which words are used, because doing so may reveal more profound results. These three limitations should be kept in mind in the event that a similar study to this one is conducted in the future.

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Author bio

Tomoko Hashimoto *is a graduate student at Meiji University. She teaches part-time at Hosen College of Childhood Education. She believes in the importance of linking theory to practice and is especially interested in the psychological aspects of language learning. hondat1.th@gmail.com*

Appendix

Words Appearing in Word Clouds for Informal and Formal
CL from Stages 1 through 5

	Informal CL		Formal CL	
Stage 1	お互い	each other	発表	presentation
Stage 2	学習	learning	学習	learning
	発音	pronunciation	大変	difficult
			英語	English
Stage 3	授業	class	協同	cooperation
	文法	grammar	緊張	nervous
	英語	English	グループ	group
	共有	share	コミュニケーション	communication
	協同	cooperation	お互い	each other
	知らない	do not know		
	大切	important		
	部分	part		
	人間関係	interpersonal relationship		
	分かる	understand		
	確認	confirm		
Stage 4	相手	partner	英文	English sentence
	協力	collaboration	アドリブ	improvise
	楽しい	fun	グループ	group
	できる	can	大切	important

	Informal CL		Formal CL	
	意見	opinion	楽しい	fun
	考え	idea	協力	collaboration
			相手	partner
			思う	think
			今回	this time
			暗記	memorizing
			経験	experience
			台本	script
			良い	enjoyable
			意見	opinion
			できる	can
			苦手	weak point
Stage 5	色々	various	面倒くさい	troublesome
	良い	enjoyable	心強い	reassuring
	思う	think	出来る	be able to
	ちゃんと伝える	properly tell	よい	enjoy
	形成	formation	すごい	great
			くれる	receive