ENHANCING THAI EFL UNIVERSITY STUDENTS' READING COMPREHENSION THROUGH A FLIPPED COOPERATIVE CLASSROOM

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Abstract

Reading skills are important not only for academic achievement but also for professional development. However, some Thai EFL university students have been found to have relatively low reading comprehension ability, even with those majoring in English. Major causes include lack of reading strategies, improper instructional method, and learning environment. Although providing reading strategies has commonly been used to improve reading comprehension, it is usually effective when providing suitable environments for learning and practicing. Therefore, an alternative instructional method needs to be used in order to provide enhancing learning environments for the maximum learning outcomes. In this study, a Flipped Cooperative Classroom Model (FCCM) is introduced. With this instructional approach, course inputs are learned through online before classroom, and the classroom time is used for more individual

practice and group activities. Moreover, both online and classroom learning modes are supported by cooperative activities which help improve reading ability through the group learning process. The objective of this study was to investigate the effectiveness of the FCCM model. The study was implemented with a group of Thai EFL university English-majored students at Nakhon Ratchasima Rajabhat University, through a Reading Comprehension course. The effectiveness of the model was assessed by comparing reading comprehension between the experimental group, learning through the FCCM instructions, and the control group, who learned with conventional classroom. Opinions of students learning with the FCCM method were also investigated. The results showed significant improvement in reading comprehension of the experimental group in comparison to the other group, as well as positive opinions about learning experiences with FCCM.

Keywords

Reading Comprehension, Flipped Classroom, Cooperative Learning

1. Introduction

Reading is one of the essential language skills students need to master, not only for academic achievement but also for their professional development. For reading, there have always been spaces for improvement for students at the university level. For one reason, students need to read learning materials from a variety of sources, especially those available on the Internet. For another, they have to come over tests and examinations which contain a section on reading comprehension during their years of study as to pass their subjects. Like all other skills, students must have some levels of reading ability in order to pass their courses and to enter their career.

Despite efforts to improve students' reading skills in particular and English language proficiency, Thai students have been found to be at low levels by many researchers (Puangmaliwan, 2005; Chomchaiya & Dunworth, 2008; Uraiman, 2011; Chomchaiya, 2014; Kasemsap & Lee, 2015; Hayikaleng, et al (2016); and Sawangsamutchai & Rattanavich, 2016). With Nakhon Ratchasima Rajabhat University, Puangmaliwan (2005) found that in semester 2 and 3 of the academic year 2003, over 50 percent of English-majored students scored lower than half in their comprehension tests in their English for Study Skills course. This is one of many examples illustrating that even the English-majored students did have low reading comprehension ability.

As for identifying causes of the problems, some studies have investigated factors contributing to the low levels of EFL reading comprehension, particularly for Thai students, mostly involved the learners' lack reading skills or strategies, the instructional methods, and the classroom environment (Strauss, 2008; Siriphanich and Laohawiriyanon, 2010; Tamrackitkun, 2010; Boonyapakob, et. al., 2012; Todd, 2012; and Kongkerd, 2013).

In response to the lack of reading strategies, instructors may change their reading instructions to focus on providing students with sufficient strategies to facilitate them while interacting with the text (Durkin, 1993; Lehr and Osborne, 2006). Moreover, appropriate instructional methods need to be used for delivery reading strategies in the way that promote students' learning environment. Shuhui (2016) suggested that cooperative learning can be applied to a flipped classroom. Hence, the researcher considered changing the instructional method from lecture-based to a flipped classroom and incorporating cooperative learning into learning activities. Additionally, a learning management system was also used for supporting the course implementation, for better learning environment, course monitoring, and effective use of instructional time.

The term "flipped classroom" has a relatively broad definition so that it can lend itself to a variety of learning platforms and activities for both modes of learning – outside and inside classroom. From the literature, to achieve the maximum potential of a flipped classroom in solving problems regarding the students' low reading ability, cooperative learning should also be used in both the classroom and the online modes of learning. This can be achieved by using technology that supports both online learning materials and communication platform. Two models which contain these elements have been introduced by Liu and Liu (2016) and Erbil & Kocabas (2016), known as the FCM model and C-FLIP, respectively. Although each of these models works efficiently, they still have different strengths and weaknesses. Therefore, the researcher considered develop a new model, based on the strengths of both, by adding the cooperative part from the C-FLIP model, and specifying technology used in the Educational Technology part of the FCM model. This new model is called "Flipped Cooperative Classroom" (FCCM Model).

The FCCM Model consists of three main parts: flipped classroom, cooperative learning, and educational technology. All the three parts contain elements which are related to each other to support one another in order to improve learning environment in the two learning modes of

Pre-class Online and In-class Face-to-Face (F2F). The final result of the model is the improved learning outcome, which is the students' reading comprehension in this case. The overall flow of the model are: (1) FCC uses Educational Technology to facilitate Flipped Classroom; (2) and uses Cooperative Learning to enrich Flipped Classroom; (3) to improve Learning Environment of both Pre-class Online and In-class F2F modes of learning, which enhances Reading Comprehension.

Recognizing the benefits of a flipped classroom method of teaching reading, together with its relative limits in the use in the field of EFL reading comprehension, the researcher sees the potential of using a flipped classroom with cooperative learning activities and the supports of LMS in solving the problems with low reading comprehension by improving learning environment for EFL students at NRRU. It is, therefore, worthwhile to investigate its effectiveness when implementing the FCCM with this particular group of students, especially when compared with the conventional classroom approach.
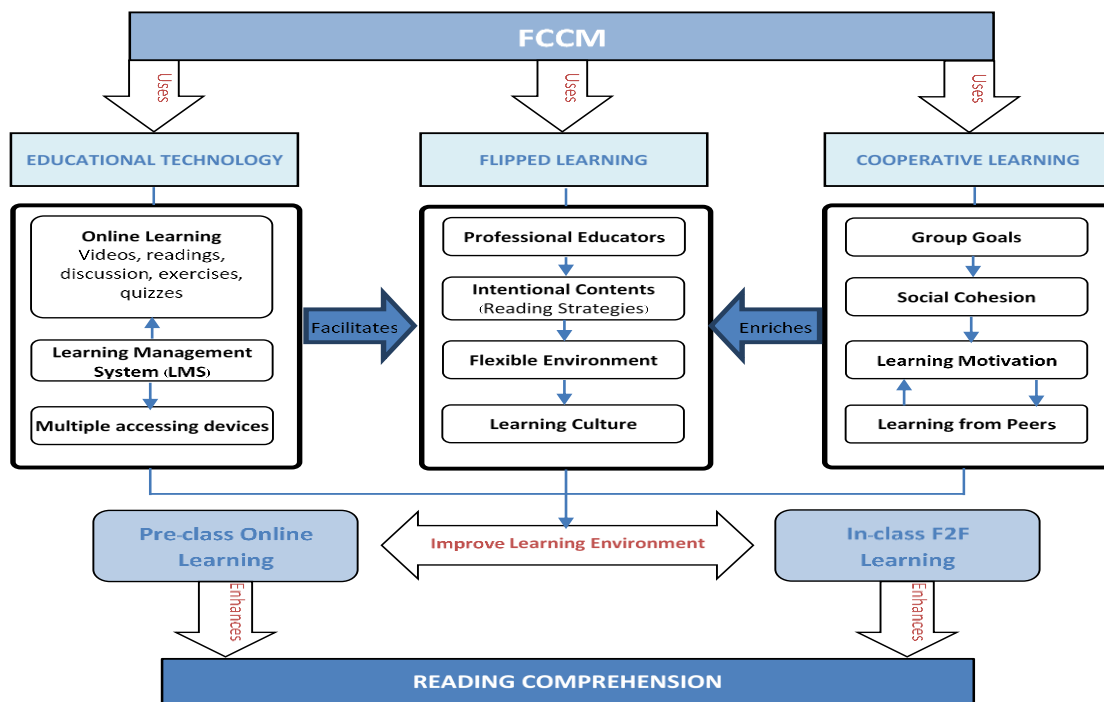

Figure 1: *The Flipped Cooperative Classroom Model (FCC Model)*

This study attempts to answer the following research questions:

1. What effects does FCCM have on students' reading comprehension?

2. What are the differences between reading comprehension of students learning with the FCCM instruction and those learning with conventional instruction?

3. What are the students 'opinions about the FCCM?

2. Research Methodology

This section presents study design, population and samples, and construction of the instruments.

2.1 Study design

This study employed the quasi-experimental design. There were two groups of samples: the control group (CG) and the experimental group (EG). The pre-test was applied to both groups at the beginning of the experiment. Then, treatments, the FCCM and the conventional classroom, were applied to EG and CG, respectively. After treatment, the post-test was administrated to both groups. Additionally, the EG was asked to respond to questionnaire and interviews. Data from the tests, and questionnaire were then analyzed.

2.2 Population and Samples

The population of this study were 220 the first year undergraduate English major students at Nakhon Ratchasima Rajabhat University in the second semester of the academic year 2017. The study samples were two intact classes of English-majored students, consisting of 37 and 34 students. Both classes were purposively selected for this study based on the availability basis. The first group was randomly assigned a control group (CG), and the second was set as the experimental group (EG).

2.3 The Construction of Research Instruments

There were five research instruments for this study: lesson plans (for conventional classroom and FCCM), FCCM Lessons, pre-test/post-test, questionnaire, and semi-structured interview.

2.3.1 Lesson Plans

Conventional and FCCM lesson plans were constructed based on the instructor-created materials for the Reading Comprehension course. For conventional lesson plans, all instructional activities were set within the in-class time and they were mainly teacher-dominant. On the other hand, activities in the FCCM lessons took place in the pre-class and in-class time. Additionally, the FCCM instructional activities were based mainly on cooperative learning and student/learner centered.

Table 1: Comparison between conventional and FCCM lesson plans

Conventional	FCCM
In-class Session (Face-to-face, 3 hours) - Lesson introduction - Teacher directed instruction - Individual quiz on the lesson	Pre-class Session (Delivered online on LMS, accessed through PC browsers and mobile app, for at least 6 hours) - Watching videos, reading lesson contents, doing online exercises, attending cooperative group chat, making group summary of lesson, and doing self-assessment quizzes
After-class Session (at least 6 hours) - Student practice on their own (by doing homework, assignments) and submit to the instructor.	In-class Session (Face-to-face, 3 hours) - Pre-class discussion, cooperative learning activities, group/Individual practice, individual quiz on the lesson, and group project work

The in-class session of the FCCM, the lessons were organized into steps following cooperative methods suggested by Johnson and Johnson (2004). The overall content validity of the conventional plans and the FCCM lesson plans was at the 'Suitable' levels, with the mean score of 3.76 (S.D. = 0.62) and 3.86 (S.D. = 0.72), respectively.

2.3.2 Flipped Cooperative Classroom (FCCM) Lessons

The flipped cooperative classroom lessons were created in an online course hosted in the Moodle learning management system run by the instructor (http://alls.gnomio.com), covering a 12-week period. Learning activities included studying the unit contents through watching lesson videos, reading the content pages, and doing quizzes. After viewing the video, students worked in group to make a summary of the lesson. The overall content validity of the FCCM lessons was at the 'Suitable' level, with the mean score of 3.87 (S.D. = 0.73).

2.3.3 Pre-Test/Post-Test

The pre-test/post-test were used for assessing students' reading comprehension. Each test consisted reading passages and 40 multiple-choice questions. The questions were designed to test students' reading comprehension which can be achieved by employing integrated skills of reading comprehension strategies. The reliability coefficient value between the two tests was 0.889, indicating that the tests are highly correlated.

2.3.4 Questionnaire

The questionnaire was used for collecting quantitative data on students' opinions of the FCCM. Section 1, adapted from Hsieh et al (2016), was about students' perceptions of the flipped cooperative classroom learning experience, covering the items on motivation, engagement, effectiveness, and satisfaction. Section 2 was based on the original Technology

Acceptance Model developed by Davis (1989) and Davis, et al. (1989), containing elements of the perceived ease of use, attitude toward use, and behavioral intension, and the additional of two elements of system characteristics and material characteristics modified by Huang, et al (2011). The overall content validity of the questionnaire was at the 'Suitable' level, with the mean score of 0.76 (S.D. = 0.52).

2.3.5 Semi-Structured Interview

The semi-structured interview guided questions were written to elicit students' opinions on some particular points related to learning with FCCM. A set of questions was set as a guideline for interviewing and used in different orders depending on students' responses. Questions were assessed by the experts for appropriateness. The overall validity of the interview questions was at the 'Suitable' level, with the mean of 0.78 (S.D. = 0.43).

3. Results

This section presents results on reading comprehension and Students' Opinions about FCCM.

3.1 Results on Reading Comprehension

Results on reading comprehension answer the first two research questions, covering reading comprehension of FCCM students and the comparison between two study groups

3.1.1 Reading comprehension of FCCM students

The following results are in relation to Research Question 1: *What effects does FCCM have on students' reading comprehension?*

Results from the study showed that *students improved their reading comprehension after learning with FCCM*. Students' reading comprehension was measured in the form of scores in the pre-test and post-test. The results are shown in Table 2.

Table 2: *Paired t-Test of pre-test and post-test scores of the Experimental Group*

Variables	Mean	S.D.	t value	p-value
Pre-test (N=34)	18.03	5.47	6.259	< 0.01
Post-test (N=34)	26.29	6.09		

Table 2 shows that the experimental group scored higher in the post-test than in the pre-test. Post-test score (X = 26.29, S.D. = 6.09) was higher than the pre-test score (X = 18.03, S.D. = 5.47) at the .01 significance level. The Cohen's effect size was 'very large' ($d = 1.43$),

suggested a very high practical significance (Ellis, 2009). This means that the experimental group improved their reading comprehension after learning through the FCCM lessons.

3.1.2 Comparison of reading comprehension of students learning with FCCM and with the conventional classroom

Results in this section address the following Research Question: *What are the differences between reading comprehension of students learning with the FCCM and those learning with the conventional classroom?*

Table 3 shows the score of the control group (X = 18.70, S.D. = 4.89) and the experimental group (X = 18.03, S.D. = 5.53). The mean score of the control group was slightly higher than that of the experimental group, but the scores were not different at the .05 level. This shows that the two groups were not different in terms of their reading comprehension before taking the course.

Table 3: *Independent sample t-Test of pre-test scores and post-test scores between the control group and experimental group*

Variables	Mean	S.D.	t value	p-value
Pre-test				
Control Group (N=317)	18.70	4.89	0.545	> 0.05
Experimental Group (N=34)	18.03	5.53		
Post-test				
Control Group (N=37)	20.43	3.72	4.933	< 0.01
Experimental Group (N=34)	26.29	6.10		

After learning through the lessons, post-test scores were compared. With the mean of 26.29 (S.D. = 6.10), statistics shows that the post-test score of the experimental group was statistically higher than the mean score of 20.43 (S.D. = 3.72) of the control group, at the .01 significance level. The Cohen's effect size was 'large' (d = 1.19), suggested a high practical significance (Ellis, 2009). This indicates that the experimental group had better reading comprehension than the control group after learning through the FCCM lessons.

3.2 Results on Students' Opinions about Flipped Cooperative Classroom

This section presents the results in relation to the Research Question 3: *What are the students' opinions about the flipped cooperative classroom?*

3.2.1 Quantitative results of students' opinions about FCCM

The quantitative result section presents two parts of quantitative results of students' opinions: overall opinions and opinions on the FCCM learning system.

A. Overall opinions about FCCM

Figure 1 shows that most students (57.5 percent) had positive opinions about FCCM as responded on the overall agreement. The figure also shows that the percentages of agreements were relatively high on all the items when compared to the disagreement. The highest percentage of agreement (73.1) was on Item 9, where students agree with that "they like learning with the method used in this course compared to other lecture-based course".
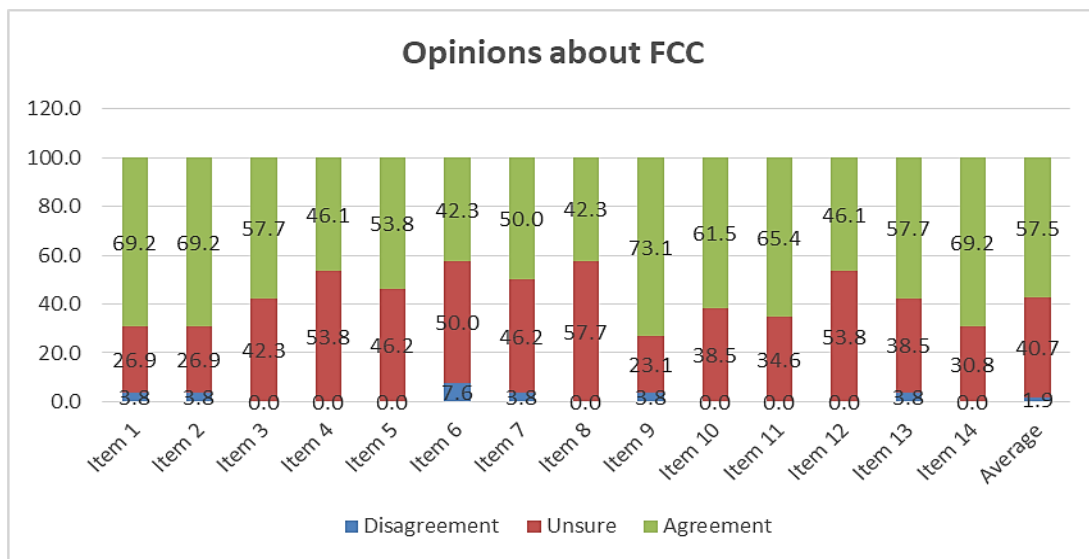

Figure 1: *Percentage of agreement of opinions about FCCM*

B. Opinions about FCCM online learning system

Students agreed with most features of online learning system (system characteristics, material characteristics, ease of use, and usefulness). Figure 1 shows relatively high percentages of positive agreement at all the six issues, ranges from 50.0 to 77.9 percent. The issue with the highest percentage of positive agreement was on perceived ease of use (77.9 percent). On the overall, students have positive opinions on the system in all issues.

Up to this point, quantitative results from the questionnaire have revealed students' opinions about FCCM with the online learning system. High percentages of students responded positive agreement on both parts. In general, students rated at the 'agree' level on most statements of the questionnaire.

3.2.2 Qualitative results on opinions about FCCM

There were six major themes of students' opinions about FCCM.

1) Advantages of FCCM. For this theme, students gave reasons in five areas. Among the five reasons, four respondents addressed the advantage of FCCM helping them ***prepare before class***. Other reasons included the use of online learning through mobile devices, students becoming more responsible and unity, and the easy way for translation.

Preparing before class was the most mentioned reason which reflected students' positive opinions about FCCM. One student stated that "...*That is, we can learn online before learning with the teacher. Something like that. The teacher explains more and we understand better (G9, S2).*"
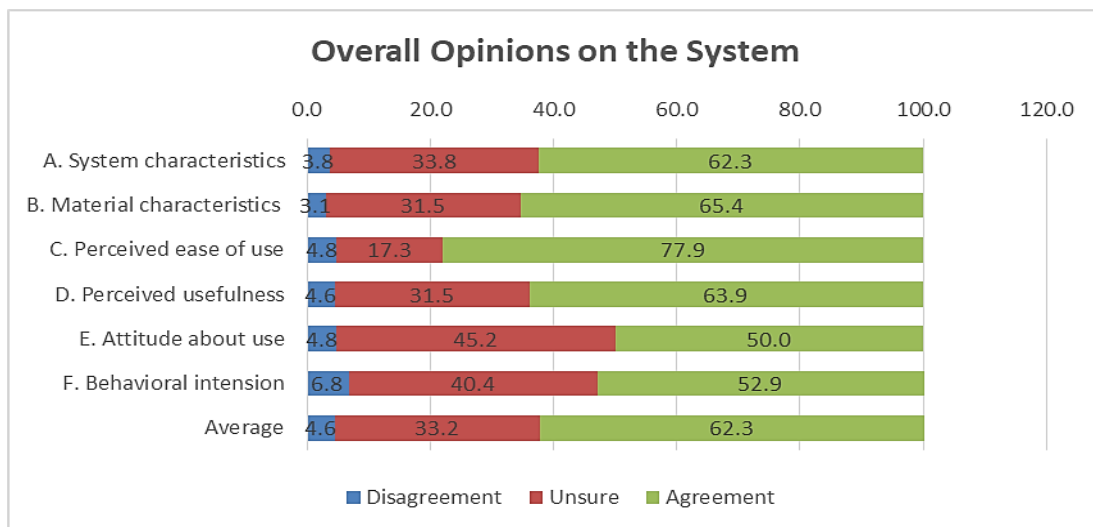

Figure 2: *Overall agreement levels on the system*

On the overall, positive opinions concerned the advantage of FCCM in helping students prepare before class. This seems to mark the main purpose of a flipped classroom as opposed to conventional instructional method.

2) Convenient online learning system. With regard to the learning platform, ***convenience*** received the highest positive responses from students. Two second highest issues were related to online exercises and online learning materials. In general, learning with Moodle was convenient for assignment submission, instant marking, easy carrying mobile phone, and not having to come to class. In particular, online exercises were convenient in terms of their ease of use, multiple attempting, and self-checking. Online learning materials provided convenient learning resource which were available right on the mobile phone, as in contrast to using books.

Convenience due to the online exercises can be seen in this response: "*I think exercises are OK because I can practice for myself." (G9, S2)*, and *"Exercises are also OK. Can be done many times." (G8, S1)*. The following was stated by another student: "*I like when I do exercises. It's good that there are answer keys [instant marking]. I know which is correct and which is wrong. I like that." (G2, S1)*.

3) FCCM learning outcomes. Based on their responses, FCCM improved their learning outcomes by: *group discussion and sharing, repeated learning, translation, and preparing before class*. The first two were the most frequently reported responses. Group discussion and sharing improved their learning outcome by discussing with group members, sharing knowledge, summaries, information, vocabularies, and comments. The following statement illustrates the point: *"My reading get better. Better than before. Yes, because we give one lesson to one of use to do the summary. Then we discuss whether it's OK." (G8, S1)*

4) Flexible learning environment. This theme emerged from the interviews when students reported many ways that FCCM provided flexible learning environment, including the followings: providing environment for learning anywhere; providing online learning which is better than learning from books; providing instant learning with mobile phones; being able to translate while doing exercises; providing students with freedom in learning; making multiple viewing of videos; and providing non-pressure learning environment. For example, *"Because it [the course] is already in the phone. The app can go anywhere. We don't have to carry books everywhere." (G4, S3)*.

5) FCCM enhanced students' learning culture. Students pointed out that FCCM affected their learning culture in many ways. Individual reading and making individual summary present the two most mentioned responses which mark their positive opinions. Individual learning was also regarded as positive opinion which resulted from learning with FCCM in general, exemplified as follows: "*This [learning with FCCM] helps improve our independent learning" (G8, S1)*.

6) Negative opinions about learning with FCCM. Students stated that using a mobile phone for learning did not give the feeling of learning but playing, and that they were used to using books than online resources. For the use of online learning system, students claimed about problems with using the group chat function: *"[Learning with mobile phone] doesn't seem like learning." (G1, S1)*.

Additional to negative opinions, students gave two major suggestions for improvement that chat function should be improved and Thai language should also be added into lessons.

In summary, students' opinions about FCCM were mostly positive. Quantitative results showed that students responded to the questionnaires with the overall positive opinions that they preferred learning with FCCM to conventional lecture-based courses. They also had positive opinions about the online learning system, especially with the system's ease of use. Qualitative results revealed positive opinions regarding advantages of FCCM, online learning system, learning outcomes, flexible learning environment, and learning culture. Results also reported some negative opinions about learning with FCCM, with recommendations for improvement.

4. Discussion

Discussions are on the students' improved reading comprehension and students' opinions about learning with FCCM.

4.1 Discussion on Students' Improved Reading Comprehension

This section discusses researcher findings on the improved reading comprehension on two issues: FCCM helped students prepare before class and FCCM's cooperative learning enhances students in both pre-class and in-class learning modes.

4.1.1 FCCM helped students learn before class

In this study, the FCCM was developed to specifically improve the out-of-class or pre-class mode of learning with the emphasis on maximizing the effectiveness of students' learning by utilizing two main features: online learning system and cooperative learning. This two features were integrated to the FCCM model to enhance and enrich the four key elements of the flipped classroom: Professional educator, Intentional contents, Flexible environment, and Learning culture (Flipped Learning Network, 2014). Therefore, how FCCM improved reading comprehension will be discussed for how these elements are improved and enriched.

1) FCCM provided intentional contents through online learning. For the current study, each unit of the online (out-of-class) lessons provided contents on reading strategies in the forms of videos and web pages. These materials were intended to serve individual learning opportunity, where each student learned through any device such as computer, tablet, or mobile phone, at his/her own time, pace, and place (Flipped Learning Network, 2014).

The focus of the intentional contents of this study was on providing reading strategies to the students. With regards to L2 reading, strategic instructions are essential to assist student's ability to comprehend texts, due to the complexity of the processes within the human information processing (Phakiti, 2006). Through these conscious metacognitive control and monitoring, the reader process knowledge of various kinds (Domain-general/world or topical, domain-specific, procedural knowledge, and conditional knowledge) which are stored within the long-term memory known as knowledge of self and beliefs and other from the (Gass, 2003). In this study, seven strategies were intentionally provided for students, and the way they learn how to use these strategies was enhanced by the specially designed flipped classroom instructional model of FCCM.

2) FCCM supported learning culture. In a conventional classroom, students may be active or passive depending on instructional activities; however, in a flipped classroom, learning culture changed markedly in the way that students become active learners preparing before class time. With FCCM, learning culture receives supports from both the online learning. Students learned to prepare before class instead of inside classroom. They were responsible for their own learning: watching, reading, and doing exercises. With online learning, students watched and re-watched videos, read lessons passages, translated with online translation, read more on other websites to get better understanding. They evaluated their understanding by doing and re-doing exercises. Moreover, they did these not only for their own learning, but also for their group members' learning (Hamdan and McKnight, 2013).

3) FCCM provided flexible learning environment for pre-class preparation. Mobile learning in the FCCM model created flexible learning environment. Learning anywhere, anytime is an example of convenient learning environment. Students could view lesson content through watching online videos and readings in their convenient time, at their own pace. This was consistent with Seedoyal-Seereekissoon (2018) who found that students enjoyed the flipped classroom as they were able to watch the videos 'several times' and they learnt 'innovatively'. Doing exercises or taking quizzes was convenient with self-marking and multiple-attempt feature. Moreover, submitting assignments was done conveniently through online, without having to make the hard copies and submitting in class. Convenience could also mean not having to buy and carry heavy books and still learn the class lessons.

4) FCCM assisted instructor to facilitate students' pre-class preparation with learning management system. In a flipped classroom, professional educator takes the roles of facilitate students' learning by observing students learning and giving feedbacks. In classroom, instructor could do these tasks directly. On the other hand, instructors could also observe students learning through the LMS. Instructor could even give feedbacks to students directly via online communication. Moreover, in some activities especially exercises, the LMS facilitated instructor on giving feedbacks using the automatic scoring feature of the online exercises or quizzes. The use of an LMS in a flipped classroom, therefore, enhanced professional educator.

4.1.2 FCCM's cooperative learning enhanced students in both pre-class and in-class learning modes

In this study, students reported from that cooperative group activities helped them learn better and improved their reading comprehension. Two main reasons given by the students are: group work forced them to learn and prepare before class, and they learned from each other by contributing what each one had learnt during group discussions. Under the cooperative work where group goals are based on learning of all group members, the group becomes socially coherence and students are motivated to learn, to engage group members to learn, and to help group members learn. This creates environments where students learn from peer tutoring, modeling, practice, assessment and correction, as well as cognitive elaboration, which finally enhance students' learning (Slavin, 2015). In other words, students perceived cooperative work in the FCCM learning activities as useful for the reasons that it forced them to be prepared and to learn from each other.

Learning through cooperative learning has been found to be an effective method. Ally (2008) claimed that "working with other learners gives learners real-life experiences of working in a group and allows them to use their metacognitive skills" (p. 31). Moreover, students can use other learners' strength, and learn from others. By assigning group work based on the expertise level and learning style of individual group members, individual team members can benefit from one another's strengths. This form of cooperative learning helps facilitate constructivist learning of the learners according to many constructivists such as Hooper & Hannafin (1991), Johnson & Johnson (1996), and Palloff & Pratt (1999).

With regard to reading, Jacob et al. (1996) reported in their study that second language learners had opportunities to improve their academic skills when they are cooperatively studying

on reading texts. Bolukbas, et al (2011) found that there were differences in reading comprehension between students learning with cooperative method and those learning through traditional method. Additionally, cooperative learning encourages students to interact, ask and answer questions, solve problems, and make decisions (Stahl, 1995). Cooperative learning activities may also be useful in teaching reading because it improves academic skills of students in language arts such as synthesizing, generalizing, summarizing, drawing conclusions, and determining relevant and irrelevant ideas.

Some previous studies have revealed significant improvement in students' reading comprehension. For example, Karimi and Hamzavi (2017) and Huang and Hong (2016) found that EFL learners improved their reading comprehension after learning with a flipped model of instruction. The improvement of students' reading comprehension from these studies was claimed to be the result of students' learning through pre-class video material and the classroom reflection, discussions, and practice. Hence, the effectiveness of the flipped classroom instructions claimed by these studies was largely due to the well-structured pre-class and in-class instructions together with collaborative reading activities.

4.2 Students' Opinions about Learning with FCCM

In terms of learning achievement, FCCM has been found to improve students' reading comprehension. In terms of learning affective, FCCM has been viewed by students in relatively positive ways. Results from the study reveals various reasons for these positive opinions, as well as some negative ones.

4.2.1 Positive Opinions

Students had positive opinions about the FCCM in three areas: convenience in learning, online translation, and realistic learning environment.

A. Convenience in Learning

Convenient learning appeared to receive the most positive feedbacks from students learning with FCCM. Two main issues which were mentioned about convenience were related to accessing lesson through mobile devices and system stability.

1) Convenience in accessing the lesson through mobile devices. Using the FCCM online learning system was convenient because students could get access to the lessons on their mobile devices, at anytime and anywhere. In fact, this may be due to the fact that the FCCM model was intentionally designed to include the Moodle Mobile as the main learning tool for the students to

access the online classroom. The use of mobile-based learning has been found not only to motivate students, but improve students' learning achievement (Chaiprasurt & Esichaikul, 2013). Learning through mobile devices was different from learning with books. For example, students responded in the interview that not having to carry heavy books to class everyday was convenient for them to study.

2) Convenience due to system stability. Provided with Internet signal, using Moodle LMS was convenient because the system was relatively stable. As a result, viewing videos, reading pages, doing exercises, taking quizzes, or submitting assignments could be done easily. These results were supported by the study of Lewandowski & Arochena (2011), who found that students using a Moodle-based mobile learning system generally saw the system as very useful, especially the appropriate functionality of the system. For these reasons, convenience in the use of the online learning platform can be said to be one of the key features that makes the FCCM effective.

These means of convenience have been the results of the use of an LMS to facilitate online learning. The results from this study were in line with previous studies. For example, the study of Al-Harbi and Alshumaimeri (2016) showed that students' attitudes towards using the flipped classroom strategy in the EFL class were positive based on students' responses to a questionnaire and semi-structured interviews. The results were similar to Enfield (2013) which found that students expressed most of the comments about the flipped course in very positive. Several students stated that they learned much better, and it appeared that students benefitted from the flipped.

B. Online Translation

One of the major advantages of learning with FCCM over conventional classroom in which students showed positive opinions was *the ability to use online translation* while reading and learning. Students mentioned that because the lesson contents were available in a text format, they could copy lesson texts and paste into an online translation website. Being able to get quick translation of what are being read is important to EFL students because it helps them overcome restrictions of having to remember vocabularies and looking up words in the dictionaries, which not only interrupts the reading process and slows down their reading speed, but also reduces reading comprehension (Liamsakul, 1998). As Thai L2 readers have been found

generally reluctant to read English because of their negative early reading experiences (Strauss, 2008), quicker translation becomes their new positive experiences on L2 reading.

C. Realistic Learning Environment

Another reason was that *FCCM provided realistic learning environment.* Students mentioned that instead of having to come to class to study, learning through the online part could be the same. That is, students could watch videos and read content pages in order to understand the lessons. They could do exercises to check their understanding with instant scoring and feedbacks, just like having a teacher to check the exercises for them. On this view point, realistic learning environment is the ability to learn online in the same way as learning in class, which is also beneficial for students.

D. Pre-class Preparation

As mentioned earlier, FCCM provided students with realistic learning environment where students could learn the lessons in order to *prepare themselves for necessary knowledge and understanding before coming to class.* Actually, with online learning materials, self-practice exercises, and all other group activities, students may have achieved some of the lesson objectives, and were ready for doing more practice at higher language skills. Having prepared before class the way students do in a flipped learning helps promote creativity and opportunities for higher order learning in the classroom (Doman & Pusey, 2014). In fact, providing learning facilities for students to study before class is one of the four most important elements of a flipped classroom (Brame, 2013), and the results from this study have provided evidence of successful use this instructional method.

4.2.2 Negative Opinions

Despite the positive opinions, some students reported negative learning experiences with FCCM. Firstly, students mentioned that they preferred learning with books to learning from a mobile phone. The main reason given by the students was that, with books, they can write some notes on pages while reading. With a mobile phone, or a computer, mostly they needed to write on separate pieces of paper, making it difficult to read, unlike the way they used to do. With this issue, the researcher suggests instruct students of making hard copy of the lesson reading materials.

Secondly, with the negative opinions about the chat function provided by Moodle, students indicated that the reasons were related to the functionality of the Chat module itself as

well as the concerns about their ways of communication and the feeling of monitored by the admin or the instructors while making group discussions. In response to this problem, the researcher would consider allowing students to use other communication platforms which are completely independent of the control of the instructor and the system admin.

5. Significance of the Study

The significance of this study can affect not only the students, but also the instructors, educators, and the researchers in the field.

Firstly, the implementation of this FCCM proved successful as the students improved their reading comprehension, hence achieving their academic goals. Not only that, the model could provide positive learning experiences, using both the in-class cooperative learning activities and the out-of-class activities with an online-supported learning platform. Therefore, the students were motivated to learn more and become efficient readers and successful learners in the course. Supports from every part of the FCCM would work together to help the students to become better learners and happier readers.

Secondly, this FCCM could benefit the teachers especially in the field of EFL reading comprehension, by providing a proper way to deal with reading comprehension issues within the scope of instructional design. The teaching model can also be applied to other subject areas such as writing, listening, vocabulary, grammar, and other topics. Likewise, the LMS platform can be used with a variety of video contents and quizzes, as well as other instructional uses. In general, flipped classroom with cooperative learning and technological support will be beneficial to both teachers who teach reading as well as teachers of other applicable subjects.

Thirdly, educators may take advantage of the FCCM either from the classroom learning approach or from the use of educational technology. This refers to changes at the policy level where flipped classroom can be one of the teaching methods that can be adapted to a wider context. When technologies are available as the results, the educational policy, the whole curriculum, or even institution will make full use of the flipped cooperative model.

Finally, the current study's results from the investigation of the use of the FCCM could contribute to bridging the research gap concerning reading comprehension of Thai EFL university students. As there are many factors that can influence reading comprehension, the FCCM is one feasible approach for tackling the problem. Therefore, this study can serve as a

useful resource towards improving students' reading comprehension through the use of an effective instructional approach up on which further research can explore.

6. Limitations of the Study

Limitations of this study include the following.

1. The sample size which is relatively small (2 classes), and the samples' field of study (English major) may not be readily generalized into the whole population of the EFL learners.

2. The study level of the samples (first year) may differ from other years of study. Being in the first year, students were new to the university learning environment. They had not been exposed to the teaching and learning methods at the university level. Furthermore, they had not exposed as many courses as the higher year. As the results, the study results might be different if the course was implemented with students of other years.

3. The study duration of 12 weeks might only contribute to the short-term investigation. With this duration of time, improving students' content knowledge might be practical. However, to have the students improve skills in reading, the time of 12 weeks may be considered relatively short.

7. Conclusion

This study was conducted to investigate the effectiveness of using the FCCM instructional method to enhance reading comprehension of Thai EFL university students. The study tools included conventional classroom and FCCM lesson plans, FCCM online lessons, pre-test and post-test, questionnaire, and semi-structure interview. The results showed that there was significant improvement of the reading comprehension of the FCCM students as shown by the reading comprehension pre-post test scores. The reading comprehension of the FCCM students was also found to be significantly higher when compared with the control group learning through the conventional classroom. The questionnaire results indicated that students showed positive responses on learning with the flipped cooperative classroom. Additionally, students had positive opinions on using online learning system in terms of system characteristics, material characteristics, ease of use, and usefulness. These findings were consistent with other previous studies, and they suggest that the FCCM model can be considered a good instructional method to improve students' reading comprehension and promote students' learning experiences.However, this study revealed findings which allow more specific explanation regarding how a flipped

classroom could improve reading comprehension, both for the type of technology used and the cooperative learning employed. Researcher suggests that many other aspects need to be investigated for the effectiveness of how flipped cooperative classroom in various contexts.

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