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Chayaratheee, S. and Waugh, R. Muban Chombueng Rajabhat University, Thailand and Edith Cowan University, Australia. Teaching English as a Foreign Language to Grade 6 Students in Thailand: Cooperative Learning versus Thai Communicative Method

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Key words: English as a foreign (second) language, Grade 6 students, Thailand, Rasch measurement, English comprehension, attitude and behaviour, cooperative learning, Thai Communicative English teaching method, ANOVA

ABSTRACT

This study compared a cooperative learning method of teaching English to Prathom (grade) 6 secondary students in Thailand and a communicative method. Rasch-generated linear scales were created to measure reading comprehension (based on 28 items with 300 students) and attitude and behaviour to learning EFL (based on 24 items with 300 students). The data for both scales had a good fit to a Rasch measurement model, good separation of measures compared to the errors, good targeting, and the response categories were answered consistently and logically, so that valid inferences could be drawn. Ninety students from three secondary schools in Ratchaburi, Thailand, were assigned randomly to an experimental group (N=48) taught using a cooperative learning method and a control group (N=48) taught by a Thai communicative method. Pretest and posttest measures were administered and mean differences were tested for significance using ANOVA (SPSS). It was found that: (1) students improved their English reading comprehension under the cooperative learning method significantly more than under the Thai communicative method; (2) Students improved their attitude and behaviour towards learning EFL significantly more under the cooperative learning method than under the Thai communicative method of teaching.

INTRODUCTION

English as a Foreign Language in Thailand

Since Thai law requires all students to learn both Thai and English – with English as a foreign language – the question of how to best teach English as a foreign language is very important. Do students learn English better, for example, when they are taught using a cooperative approach compared to the Thai Communicative approach? The research reported here tests this question with a sample of Prathom 6 students in Thailand.

Since 1996, English has been a compulsory subject in the Thai school system, mainly taught by the communicative approach. Wongsathorn et al. (1996), using a UNESCO survey framework to established national economic, social, and educational profiles for Language Learning and teaching in Thailand suggested that improvements were needed quickly. The main problems in teaching reading in Thailand would seem to stem from inappropriate methodology and a lack of teaching skills (Secondary School Education Report, 1981-1985, p. 40). Studies have shown that many teachers are not skilful in relation to teaching methodology (Noisaengsri, 1992; Chittawat,

1995). Most the teachers start their classes with a vocabulary item, or grammatical structure presentation, and then let the students read aloud, repeating the sentences, or a paragraph from the text. Frequently, students are required to read and translate sentence-by-sentence in-chorus, or individually, a strategy that students find boring. This traditional approach to English teaching leads to the development of negative attitudes towards learning English in some students, as there is insufficient active participation and incentive in learning with this method of teaching.

Students have little chance to think through their own ideas about the text (Norasawat, 1993; Chinthammitr, 1993). Stark (2001, p. 11) cited John Hinds of Thammasat University who found that Thai students had problems with sequencing and argumentation. Stark (2001) decided to test his students and found that 90% of them preferred auditory, or kinesthetic styles, in learning English, while only 10% chose visual. This set the criteria for future thinking, sequencing, and hypothetical analysis in learning and teaching English. He solved this problem by dividing the students in pairs, one being the questioner who asks the other his or her opinion of a topic. The questioner listens carefully to the details of the story that he or she hears from the other. This means that, when Thai people learn a language, they learn it better through listening and taking part in activity, rather than using their eyes. In reading instruction, therefore, as many audio and kinaesthetic techniques as possible should be used to match the learning styles of the learners. Thus developing thinking skills and using visual stimuli (pictures, charts, diagrams) through an activities based approach may lead to better and quicker achievement in English. In this way, students can help each other to develop thinking skills through interaction between them. Successful learning in class can involve an interaction of the learner with someone else (Tinzmann et al. 1990); that is, it can involve cooperative learning. This study applied Stark's (2001) cooperative learning method to the reading assignments used by the primary students.

Cooperative learning was expected to have a positive effect on student achievement, where the approach included both positive interdependence and individual responsibility (Whittaker 1996, Zisk 1996). This is because, while working together in groups, students help and support each other's efforts and they interact, leading to positive attitudes in learning.

Up to this point, there has been very little research about cooperative learning in English reading comprehension in Thailand (Intalapraserit 1991, Chokchuichoo 1994), but there has been some such research in teaching mathematics and science classes (Rattanakornkul 1993, Whatsongnorn 1993). Towards filling this gap, the current research investigates the effect of cooperative learning on English reading comprehension at the primary level in Thailand. The design aims to compare the effects on English reading comprehension of teaching by two different methods; the Thai communicative method and a cooperative learning method. There are three important aspects. The first important aspect is to measure reading comprehension on a linear scale. This has not been done before in Thailand and leads to better measurement of achievement in EFL. The second is to measure attitude and behaviour to reading comprehension taught by a cooperative learning method using a Rasch measurement model. This creates a linear, interval-level scale in which the difficulties of attitude and behaviour items are calibrated on the same scale. This has not been done before in Thailand and could lead to a better measurement and understanding of how students learn. The third is to test a model of attitude and behaviour towards reading comprehension taught by a cooperative learning method and try to explain how students learn English as a foreign language. This could improve on the current models and explanations.

Cooperative Learning

Cooperative learning is an instructional technique in which students are divided into small, mixed groups working together to complete instructional activities (see Littlewood 2000, Olsen and Kagan 1992). A cooperative learning method, as outlined by Maltby et al. (1995, p. 411), was adapted into five steps for use in the present study. One, the objectives for the lesson were specified in Thai and English. Two, students were divided into groups of four for each learning team. Each team contained a mixture of English ability and gender. Three, a new reading text was introduced and students worked freely in their groups to offer different answers to the problems, brainstorming, and sharing ideas, in order to improve their understanding. They continued to work until each group member feels that he/she understands the concepts involved in the exercise, through questioning

each other in pairs. Four, the students' achievement is checked for understanding by testing, using task work (such as cloze exercises) for the individuals separately and for the team. Rewards are given on a team basis, based on team achievement. Five, the team with the highest score is given a reward, or the team's work is displayed on a bulletin board.

Thai Communicative Teaching Method

The Thai communicative teaching method is the normal teaching style used in the Thai classrooms for teaching EFL in primary schools and was adapted from behaviourist principles of an earlier time for individual and class work. Although the latest English syllabus for Thai primary students includes an emphasis on the teaching of meaning rather than form, trainee teachers in the Rajabhat Universities are still advised to use the 3P procedure (Presentation, Practice, Production), as the basic framework for their lessons.

Presentation. Teachers present new words, phrases and some expressions from some written work, to the students in Thai and English.

Practice. Students practise by repeating the new words and expressions in class unison, after the teacher, two or three times, and then individually. Then they read the whole passage by themselves. Teachers ask questions about the passage, and in this way students practise answering the questions orally to the teacher.

Production. Students engage in writing answers to the reading comprehension exercises.

LINEAR SCALE OF READING COMPREHENSION

Rasch measurement is currently the only known method by which researchers can create linear scales in reading comprehension (Wright 1999, Waugh 2006) and it was used in the current study. Using a sample of 300 Prathom 6 students in the Ratchaburi Province and 60 reading comprehension items, data were analysed with a Rasch measurement model (Rasch 1960/1980). The computer program was RUMM (Andrich, Sheridan and Luo 2003) and the actual Rasch model used was the Partial Credit Model of Rasch (Masters 1997). A linear scale of reading comprehension was created using 32 items (see Table 1) and the rest of the items (28) were discarded. The linear scale was reliable and uni-dimensional, and there was good item and person fit to the measurement model. The targeting was good (that is, the items were about the right difficulty for the ability levels of the Thai students). The Separation Index (0.73) was good. That is, the errors were small compared to the separation of measures along the scale. In a good scale, the measures should be well separated in comparison to the errors (which should be much smaller). It would have been better to have more students with higher and lower English language abilities to create an even better scale. Nevertheless, all other aspects of the data fitted well with the measurement model. The reading comprehension items were based on understanding the main facts, sequencing the order of ideas, and understanding the meaning from pictures in a particular communication. The full items are composed of text and diagrams and are described in Chayarathee (2004). The difficulties of the items are given in Table 1.

Table 1
The difficulties of the final 32 items for English reading comprehension.

Item number	Item difficulty	Item description
1	-0.12	Understanding meaning from pictures.
2	+0.62	Understanding the main facts.
3	-0.23	Sequencing the order of ideas.
4	+0.25	Understanding the main facts.
5	-0.20	Understanding the main facts.
6	-0.39	Understanding meaning from pictures.
7	+0.06	Understanding meaning from pictures.
8	-0.27	Understanding meaning from pictures.
9	+0.15	Understanding the main facts.
10	-0.04	Understanding the main facts.
11	+0.01	Sequencing the order of ideas.
12	+0.18	Sequencing the order of ideas.
13	-0.35	Sequencing the order of ideas.
14	-0.32	Sequencing the order of ideas.
15	-0.21	Understanding the main facts.
16	-0.22	Sequencing the order of ideas.
17	-0.04	Understanding the main facts.
18	-0.36	Understanding meaning from pictures.
19	-0.45	Understanding meaning from pictures.
20	+0.42	Understanding the main facts.
21	-0.24	Understanding meaning from pictures.
22	-0.10	Understanding the main facts.
23	+0.26	Understanding the main facts.
24	+0.08	Understanding the main facts.
25	-0.24	Sequencing the order of ideas.
26	-0.40	Sequencing the order of ideas.
27	+0.01	Understanding meaning from pictures.
28	-0.08	Sequencing the order of ideas.
29	+0.05	Understanding meaning from pictures.
30	+1.25	Sequencing the order of ideas.
31	-0.10	Understanding the vocabulary.
32	+1.04	Understanding the main facts.

Note

1. The full items involve diagrams and text (see Chayarathee 2004)
2. Item difficulties are calibrated in logits (the log odds of answering positively) on the same linear scale as the student measures.

LINEAR SCALE OF ATTITUDE AND BEHAVIOUR

Rasch measurement (Rasch 1960/1980) is currently the only known method by which researchers can create linear scales measuring attitude and behaviour (Wright 1999, Waugh 2006) and it was used in the current study. Using a sample of 300 Prathom 6 students in the Ratchaburi Province, a questionnaire of students' self-reported attitude and behaviour was created with 32 items (see Table 2). Each item was answered from two perspectives: an attitude (ideal expectation) and behaviour (what really happened) and this meant that, effectively, there were 64 items (32 times 2). The computer program was RUMM (Andrich, Sheridan and Luo 2003) and the actual Rasch measurement model used was the Partial Credit Model of Rasch (Masters 1997). A linear scale of attitude and behaviour was created using 20 items answered in two perspectives (effectively 40 items) and the rest (24) were discarded. The linear scale was reliable (Separation Index = 0.92) and uni-dimensional: it had good item and person fit to the measurement model, the targeting was good (that is, the items were about the right difficulty for the ability levels of the students), and there

was good separation of measures along the scale compared to the errors (that is, the errors were small compared to the separation of measures). This means that valid inferences can be made from the scale data.

Table 2
Difficulties of the 40 items for the attitude and behaviour measure

Item number	Item description	My ideal Expectation	This is what really happened

Tasks for group work			
1-2	I like to listen to my friends' ideas about what we read.	- 0.65	-0.11
3-4	I like to do activities in groups.	-0.57	+0.25
5-6	I can understand better when I do activities with friends.	-0.12	+0.14
7-8	My group finishes the work on time.	+0.11	+0.73
9-10	I can make notes to summarize the group's ideas.	+0.18	+0.49
11-12	I like to lead my friends in doing activities.	+0.45	+0.59
Tasks for meaning			
13-14	I like learning vocabulary from pictures	-0.65	-0.35
15-16	I can guess the meaning of the words from pictures.	-0.56	-0.23
Tasks for reading comprehension.			
17-18	I like to solve the problems/puzzles in reading assignments.	-0.01	-0.14
19-20	I can put the story into the correct order.	+0.35	+0.57
21-22	I can complete cloze exercises with the correct words.	+0.38	+0.49
23-24	I can find the correct answers to the reading questions.	+0.38	+0.50
Student/student relationships			
25-26	I learn more when I study in small groups.	-0.59	-0.71
27-28	I can have more opportunity to participate in activities among friends.	-0.37	-0.46
29-30	I like to talk or study in groups.	+0.03	+0.10
Student/teacher relationships			
31-32	I learn a lot from the teacher.	-0.34	-0.24
33-34	I like my English teacher.	-0.15	-0.21
35-36	I can discuss my hobbies and my future plans with my teacher.	-0.03	+0.12
37-38	I like the way my teacher teaches me English reading.	+0.09	+0.21
39-40	I can talk to my teacher informally about my reading assignment.	+0.15	+0.14

Note

1. Item difficulties are calibrated in logits (the log odds of answering positively) on the same linear scale as the student measures of reading comprehension. These are the units of a linear scale.

Reading Comprehension measure

The research question can now be answered: Do the students improve their English reading comprehension as a result of being taught using a cooperative learning approach compared with being taught using the Thai communicative method?

The Rasch generated linear scales were used as the measures in the experiment to answer these questions. Ninety-six students from three secondary schools in Ratchaburi, Thailand, were assigned randomly to an experimental group (N=48) taught English as a foreign language using a cooperative learning approach and a control group (N=48) taught by the Thai communicative method. A strong effort was made to treat both the experimental group and the control group the same, except for the different teaching method. That is, classes were arranged at the same time of the day, class times were the same, course content was the same, the same homework was given and teachers were monitored so that they kept to the given teaching method. Meetings with teachers were arranged from time to time to ensure that the controls were being implemented and so everything that could reasonably be done to ensure fair comparisons between the control and experimental groups were done for 16, 50 minute periods of the experiment. Pretest and posttest measures were administered and differences were tested for significance using ANOVA (SPSS, Pallant 2001).

Interaction Effects

The interaction effect did reach significance ($F=22.96$, $df=1,94$, $p=0.000$) and the partial eta squared was 0.20 which, according to Cohen's rules (1988), is a moderate to large effect. This means that the experimental group achieved significantly better results in reading comprehension than the control group and, therefore, that the cooperative learning method is better than the Thai communicative method of teaching English as a second language (see Figure 1).

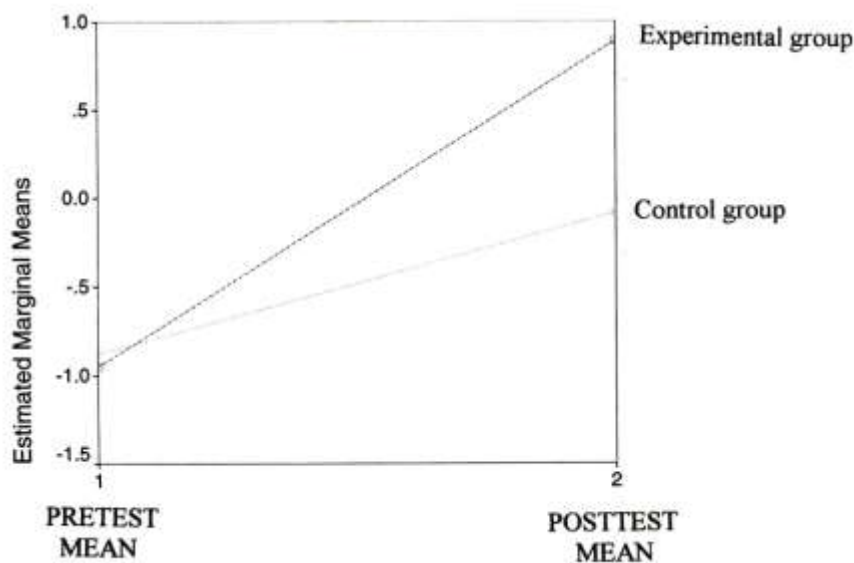


Figure 1: Graph of reading comprehension means (pretest/posttest v experimental/control groups).

Posttest/Pretest, Experimental/Control Group Results

Table 3: Statistics for the reading comprehension measure

	Experimental group (N=48)		Control group (N=48)	
Pretest	\bar{X}	= -0.95	\bar{X}	= -0.88
	SD	= 0.63	SD	= 0.49
	CI	= 0.68	CI	= 0.25
	SE	= 0.09	SE	= 0.07
Posttest	\bar{X}	= 0.89	\bar{X}	= 1.08
	SD	= 0.74	SD	= 0.56
	CI	= 1.10	CI	= 0.08
	SE	= 0.11	SE	= 0.08

Note

- \bar{X} is the mean and SD is the standard deviation in logits
- CI is the 95% confidence level and SE is the standard error

At the beginning of the experiment, the students in the experimental group were not significantly better than those in the control group in regards to reading comprehension in English ($F = 0.40$, $df = 1, 94$, $p = 0.53$), but they were significantly better at the end ($F = 53.23$, $df = 1, 94$, $p < 0.001$). This supports the view that the cooperative learning method was better than the Thai communicative method for teaching students English as a foreign language.

For English reading comprehension, the students in the experimental group performed significantly better on the posttest than the pretest ($F = 53.25$, $df = 1,94$, $p < 0.001$). This means that the reading comprehension of the students learning under the cooperative learning approach was significantly better at the end of the experiment than at the beginning. The effect size, eta squared, equals 0.65 and, under Cohen's (1988) rules, this is a large effect. For English reading comprehension, the students in the control group did significantly better on the posttest than the pretest ($F = 51.33$, $df = 1,94$, $p < 0.001$). This means that the reading comprehension of the students learning under the traditional teaching method was significantly better at the end of the teaching than at the beginning. Eta squared is 0.38, a large effect size (Cohen 1988).

ATTITUDE AND BEHAVIOUR MEASURE

Research question two can now be answered: Do the students improve their attitude and behaviour as a result of being taught English using a cooperative learning method compared with being taught using the Thai communicative method?

Interaction effects

The interaction effect did reach significance easily ($F=1427.8$, $df=1,94$, $p=0.000$) and the partial eta squared was 0.94 which, according to Cohen's rules (1988), is a very large effect. This means that the experimental group exhibited significantly better attitudes and behaviour than the control group and, therefore, that the cooperative learning method encouraged students to show better attitudes to learning and exhibit better behaviour in the English classroom than in the classrooms where the Thai communicative method of teaching English was used.

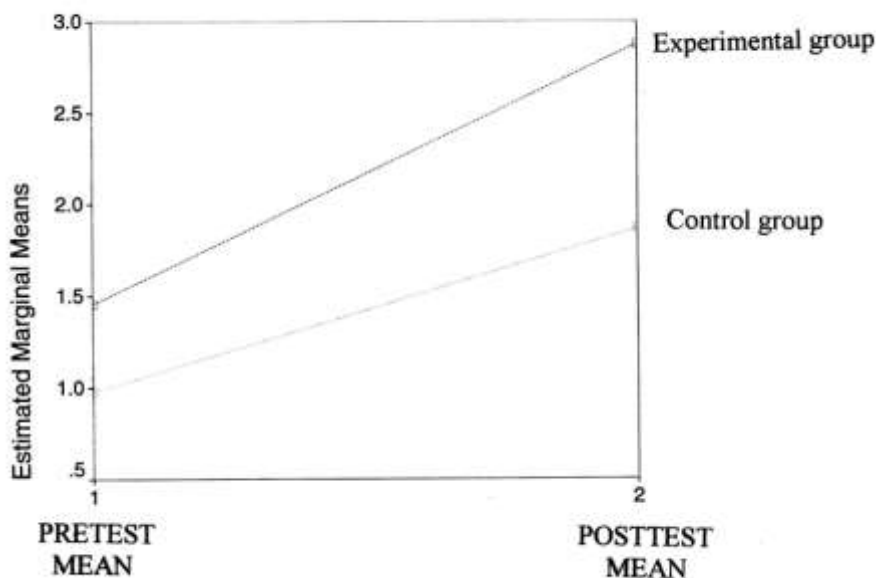


Figure 2: Graph of pretest/posttest, experimental/control group, means for attitude and behaviour Posttest/Pretest, Experimental/Control Group Results.

The results of the experiment for attitude and behaviour are given in Table 4.

Table 4: Statistics for the attitude and behaviour measure

	Experimental group (N=48)		Control group (N=48)	
Pretest	\bar{X}	= 1.46	\bar{X}	= 0.98
	SD	= 0.54	SD	= 0.33
	CI	= 2.65	CI	= 1.72
	SE	= 0.07	SE	= 0.05
Posttest	\bar{X}	= 2.87	\bar{X}	= 1.87
	SD	= 0.78	SD	= 0.50
	CI	= 3.10	CI	= 2.01
	SE	= 0.11	SE	= 0.07

Note

1. \bar{X} is the mean and SD is the standard deviation in logits
2. CI is the 95% confidence level and SE is the standard error

At the beginning of the experiment, the students in the experimental group were significantly better than those in the control group in regards to attitude and behaviour in the English classroom ($F = 27.48$, $df = 1, 94$, $p = 0.001$), and they were significantly better at the end ($F = 56.85$, $df = 1, 94$, $p < 0.001$). Eta squared was 0.52 and this is a large effect size (Cohen 1988). This supports the view that students' attitude and behaviour in the English classroom was significantly better during teaching under the cooperative learning method than it was under the Thai communicative English teaching method.

The attitude and behaviour of the students in the experimental group was significantly better on the posttest than the pretest ($F = 56.85$, $df = 1, 94$, $p < 0.001$). This means that the reading comprehension of the students learning under the cooperative learning approach was significantly better at the end of the experiment than at the beginning. The effect size, eta squared, equals 0.52 and, under Cohen's (1988) rules, this is a large effect.

The attitude and behaviour of the students in the control group was significantly better in the posttest compared to the pretest ($t = 10.18$, $df = 94$, $p > 0.001$). This means that the attitude and behaviour of the students learning under the traditional teaching method was significantly better at the end of the teaching than at the beginning, but the attitude and behaviour in the experimental group improved even more (see the interaction effect results previously given).

DISCUSSION

This study was driven by the question about how best to teach English as a foreign language to students in schools in Thailand. Is teaching based on a cooperative learning method better than teaching based on a Thai communicative method? There has been wide debate on this question in western countries with a view that cooperative learning is very useful. Now that all students in Thailand have to learn both Thai and English, it is an important question for Thai educators.

The present research results supported a view of reading, based on the importance of real life situations, to learning English as a foreign language (Dixon and Nessell 1983, Krashen and Terrell 1983). Small group activities that stimulate thinking and interaction between peers working in small groups seems to improve learning and attitude and behaviour in the classroom (Stark 2001, Millis 1996). Another aspect supporting this research is giving students responsibility in their learning. When they were given set roles, they developed critical thinking skills, they helped each other, and improved their knowledge (Wheeler 1990, Millis 1996). The use of a variety of learning activities in small group discussion provided what is called scaffolding to the students to help them understand and learn better (Nikita 2003, p.2-9). It is recommended that English reading comprehension in

Thai classrooms should be based on three aspects of cooperative learning: cooperative learning, tasks and activities, and roles.

The lesson plans for the experimental group used in this study involved students in meaningful activities that emphasized tasks, activities, and roles. Emphasizing group roles seemed to create participation and responsibility leading to discussion (Robert 2000) and interactive behaviour. Cooperative learning, involving pair work and group work, seemed to help develop visual and cognitive skills in the Thai students.

One important theory about learning and cognitive development is Vygotsky's theory which focuses on the importance of peer interaction, the grounding of learning experiences in the real world of experience of children, and the need for teachers to take account of individual differences when structuring learning experiences for students. In the present study, Thai students worked on activities with peers, interacting with others, sharing ideas and experiences, solving problems and becoming interdependent with other students. This supported the views of McInerney and McInerney (1994) about classroom learning.

Dixon and Nessel (1983) and Krashen and Terrell (1983) described a good way to acquire second language competence. They suggested that students should practice language in situations derived from group activities, such as discussion of pictures and doing things the students themselves choose. Generally, they concentrate better on their classwork when they interact with other students than when a teacher does most of the talking. That is, when they assume some responsibility for their learning, under controlled conditions, they seem to be better able to focus their attention on learning. This was supported by Ellis (1997) who found that students prefer activities that they feel competent to complete them rather than those in which they feel less competent. The other important thing of which a teacher must also be aware is comprehensible input (Krashen 1989). The texts chosen for the students should not be too easy or too difficult for them to understand. The present research seemed to support these views.

The conceptual model of learning EFL used in the present study was based on foreign language acquisition theory, cooperative learning and reading theory. The tasks in the reading texts, including vocabulary, were selected from everyday life experiences that could actually happen and were not too difficult for students, taking into account their age and reading level. Students interacted with each other in the given tasks and activities to improve their English. This proposed model of learning EFL was directly linked to the content and texts used in the classroom, the way it was taught, and the measurement of reading achievement. In all the reading lessons, task work, activities, and group responsibility were used by the students to support each other and to help in the learning process. The six reading texts were selected from everyday activities, including understanding the main idea (Pim's family and their occupations, The Special Bird, and the Floating Market), sequencing the order (Potato Cake), and understanding the meaning using pictures (Personal Feeling, Potato Cake, and Sickesses). The reading texts, aims, and language structure, including the exercises, were the same in the experimental and the control group. Exercises require students to complete a variety of activities, including short answer, true-false questions, ordering of pictures and sentences labelling charts and pictures, completing crosswords and matching questions and sentences. The reading lessons taught to the experimental group and the control group are based on the English Syllabus Design (Ministry of Education, 1996, pp.2-15) and, as such, both illustrate a communicative approach.

The traditional method of teaching English reading is used by most teachers in Thailand. At Muban Chombeung Rajabhat University, it is the recommended practice for trainee teachers, with some recent modifications such as stressing learner-centred activities. The teaching procedure involves five parts. One, the teacher presents vocabulary items and necessary expressions in the text to students in both Thai and English. Two, students practice, by repeating the words and sentences after the teacher, together as a whole class, then in groups, and individually. Three, students may then read the whole passage silently or aloud, and have a group discussion to answer a set of given questions orally. Four, students then practice reading and vocabulary work in pairs, and discuss in groups to find the main idea, supporting ideas and sequencing order. Five, students do

the production exercises by reading the text and completing the reading comprehension exercises individually. Second language readers obtain meaning from the texts by actively using both lower and higher level skills to decode the smaller elements and construct the meaning and, by relating what they read to what they already know, they are able to understand the main ideas, sequence the order and obtain detailed information.

The present study used current world's best measurement practice to make the measures of reading comprehension and of attitude and behaviour (that is, Rasch measurement, see Waugh 2005). Linear scales were created in standard units (logits) for both measures with good fits to the measurement model. Measures were calibrated on the same scale as the item difficulties. The experiment to compare reading comprehension, and attitude and behaviour, was conducted under standard and strict guidelines to ensure that any outcome comparisons are valid. Everything that could be reasonably done to ensure comparability between the classes taught by the two methods was done. Given all these aspects, we can be reasonably sure that the inferences drawn from the measures of the experiment are valid. There are four main inferences. One, students improved their reading comprehension in English as a foreign language under both the cooperative learning method and Thai communicative method of teaching. Two, students improved their reading comprehension in English as a foreign language under the cooperative learning method significantly more than under the Thai communicative teaching method. Three, students improved their attitude and behaviour towards learning English as a foreign language under the cooperative learning method significantly more than under the Thai communicative method. Four, students did improve their attitude and behaviour towards learning English as a foreign language under the Thai communicative teaching method.

The outcomes from the experiment means that educators in Thailand should seriously consider teaching secondary school students English using the cooperative learning method. The evidence is that students learn English better, enjoy the cooperative learning method better, and have better classroom attitudes and behaviour, than when taught using the Thai communicative method. The results also mean that the Rajabhat Universities should seriously consider training their teachers using the cooperative learning method and phase out the traditional teaching method for English as foreign language.

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