The Implementation of Flipped Classroom Instruction to Enhance English Reading Comprehension Skills of Grade 9 Students

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Abstract

This study aims to examine and compare students' English reading comprehension abilities before and after instruction, as well as to investigate their attitudes toward English reading comprehension instruction using the flipped classroom approach. The participants were 30 ninth-grade students from Nong Bua Pittayakarn School in Nong Bua Lamphu Province, under the jurisdiction of the Secondary Educational Service Area Office Loei-Nong Bua Lamphu, during the first semester of the 2024 academic year. The participants were selected through cluster sampling. The research employed a quasi-experimental one-group pretest-posttest design. The research instruments included 12 instructional lesson plans, a reading comprehension test, and an attitude questionnaire on English reading comprehension instruction using the flipped classroom approach. The intervention was conducted over 12 weeks, with two hours of instruction per week, totaling 24 hours. Data analysis was performed using descriptive statistics, including mean, percentage, standard deviation, paired-sample t-tests, and dependent t-tests. The findings of the study can be summarized as follows: 1) The students' mean score in English reading comprehension before instruction was 15.63, equivalent to 39.08%, while their mean score after instruction was 30.07, equivalent to 75.18%. A statistical analysis of the mean score differences revealed that students' post-instruction reading comprehension ability exceeded the 70% criterion and was significantly higher than their pre-instruction ability. 2) The students' attitudes toward English reading comprehension instruction using the flipped classroom approach were at a positive level.

Background of the Study

English is the most widely spoken language worldwide, serving as a key tool for global communication and access to knowledge. Gunderson, Silva and Chen (2010) state that English plays a significant role in facilitating access to knowledge. Similarly, Thailand recognizes the importance of English and emphasize teaching it in four key skills: listening, speaking, reading, and writing, with reading being considered particularly crucial in the modern era (Ministry of Education, 2008). Reading is an essential skill that plays a significant role in our lives. It fosters wisdom and creativity, helps in self-development, and enables individuals to adapt to society peacefully. Additionally, reading can relieve stress caused by work and daily activities. Therefore, reading is not just about the ability to read but also about applying the knowledge gained to everyday life.

Reading books has a significant impact on a child's development and serves as a crucial foundation for lifelong learning. The earlier children are encouraged to become familiar with books and reading, the more likely they are to develop positively and be well-prepared for learning. Reading also enhances thinking skills

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and stimulates imagination. However, many students struggle with reading comprehension due to ineffective instructional methods. According to the Academic Department Ministry of Education (2002) Thai students face additional challenges such as limited English vocabulary and insufficient exposure to extracurricular reading practice. Similarly, in Nongbuapittayakarn School which is located in Nong Bua Lam Phu. There are 3,602 students facing challenges in reading comprehension. In the 2023 academic year, grade 9 students scored an average of 32.36 %in the English O-NET which is significantly below the national standard of 50 .%Similarly, their overall English evaluation score was 32.50%, reflecting performance below the intended standard (Nongbuapittayakarn School, 2023)

According to the literature reviews, numerous effective strategies have been identified to enhance students' English reading comprehension, including the flipped classroom approach. Bergmann & Sams (2012) describe it as a method where traditional in-class lectures are replaced with interactive activities, while lecture content is assigned as homework. Pyzdrowski and Shambaugh (2014) highlight that this approach restructures conventional teaching by prioritizing active, in-class engagement. Furthermore, Walker, Tan and Koh (2020) emphasize that it empowers students through self-directed learning and improved instructional materials, enabling them to build knowledge independently.

Due to the above-mentioned issues, the researcher would like to use the flipped classroom approach to enhance students' proficiency in English reading comprehension. Then compare the English reading comprehension ability of Mathayomsuksa 3 students before and after studying English reading comprehension using the flipped classroom approach and investigate students' attitudes toward teaching English reading comprehension. Furthermore, the researcher aims to gain effective examples of lesson plans and to provide guidelines for English teachers to develop their abilities in using the flipped classroom approach.

Purposes of Study

1. to study and compare the English reading comprehension ability of Mathayomsuksa 3 students before and after learning through the flipped classroom approach.

2. to examine students' attitudes toward teaching English reading comprehension using the flipped classroom approach.

Hypotheses of the Study

1. The students' English reading comprehension ability using the flipped classroom approach will be higher than the set criterion of 70 percent.

2. The students' English reading comprehension ability of Mathayomsuksa 3 students after studying English reading comprehension using the flipped classroom approach will be higher than before.

Scope of the Study

1. Variables

1.1 Independent variable

The independent variable was teaching English reading comprehension using the flipped classroom approach.

1.2 Dependent variables

The dependent variables included:

1.2.1 English reading comprehension ability,

          1.2.2 attitude towards teaching English reading comprehension using the flipped classroom approach.

Research Methodology

This study was experimental research with a one-group pretest-posttest design.

1. Population and Sample

1.1 Population

The population in this study was 615 students in grade 9, 17 classrooms at Nongbuapittayakarn School, Nongbualamphu Province, under the Secondary Educational Service Area Office Loei–Nongbualamphu, who were studying in the first semester of 2024 academic year.

1.2 Sample

The sample for this study consisted of 30 students of grade 9/12 who were enrolled in English (E23101) in the first semester of the 2024 academic year at Nongbuapittayakarn School, Nongbualamphu, under the Secondary Educational Service Area Office Loei–Nongbualamphu. The students were obtained by cluster random sampling.

2. Instrumentation

Three research instruments were utilized to carry out this study as follows:

The process of creating a lesson plan for teaching English reading comprehension ability could be explained in the following stages as follows:

2.1 Lesson plans

2.1.1 Examine the criteria and standards outlined in the English Curriculum of 2008 to guide the development of instructional materials.

2.1.2 Select from a variety of student textbooks and educational resources material connected to teaching English reading comprehension that complies with the Basic Curriculum of 2008 and was appropriate for the student's proficiency level.

2.1.3 Design the 12 lesson plans following the standards in each topic.

2.1.4 Submit the modified lesson plans to three specialists in the field of English teaching for them to assess the accuracy and orientation between the objectives and learning activities. The experts reviewed the lesson plans based on the teaching procedures established by the researcher. The ratings provided by the three experts were categorized into three levels. (Saiyos & Saiyos, 2000)

+1 means sure that this component of a lesson plan is correct and relevant to other components.

0 means unsure that this component of a lesson plan is somewhat correct and relevant to other components.

-1 means sure that this component of a lesson plan is incorrect and irrelevant to other components.

2.1.5 Revise the lesson plans based on the three experts' recommendations.

2.1.6 Conduct a pilot study with 42 grade 9 students who were not part of the sample group, during the first semester of the 2024 academic year at Nongbuapittayakarn School.

2.1.7 Modify the lesson plans according to the insights gathered from the pilot study, and then put them into action within the 12 weeks teaching experimental program.

2.2 An English reading comprehension test

The researcher designed the English reading comprehension test to evaluate students' proficiency in the language.

2.2.1 Pretest/Posttest

2.2.1.1 Review the evaluations and assessments for the English reading comprehension test then analyze the English reading course's content and quality of learners.

2.2.1.2 Create 60 items for the English reading comprehension test.

2.2.1.3 Submit the created test to a thesis advisor to verify its accuracy and the coherence of the exam's objectives and items.

2.2.1.4 Test was revised in accordance with the thesis advisor's suggestions, and then three experts reviewed them for validity in terms of content, language, and question accuracy. The criteria are as follows (Saiyos & Saiyos, 2000):

+1 means sure that the test item is correct and appropriate to objectives.

0 means unsure that the test item is somewhat correct and appropriate to objectives.

-1 means sure that the test item is incorrect and inappropriate to objectives. After that, the collect scores from the three experts were analyzed for the Index of Item Objective Congruence (IOC) which was 1.00 for all items.

2.2.1.5 Revise the test according to the experts' advice and submit to the thesis advisor for rechecking it. Following that, pilot study was conducted with 42 non-sample students. Then 40 test items were chosen after that. The pilot study's items difficulty values were 0.46-0.70 and discrimination was 0.20-0.66. The reliability of the test was 0.89.

2.2.1.6 Use the final form of the test with the sample.

2.3 The attitude questionnaire for studying students' attitudes toward teaching English reading comprehension using the flipped classroom approach.

2.3.1 Study the various theories that explore the role of attitudes in assessing and evaluating English curriculum.

2.3.2 Create 25 items for a questionnaire about the student's attitude towards the material, using a five-point Likert scale with the options strongly agree, agree, unsure, disagree, and strongly disagree. (Best & Kahn, 2006).

2.3.3 Choose 20 questions from the attitude questionnaire which all items have an Index of Item Objective Congruence (IOC) score of 1.00.

2.3.4 Give the attitude questionnaire to the sample after the teaching program. Then the students read each question and answer the questions based on five-point Likert scale.

3. Data Collection

The researcher's purposes in conducting the study were to study and compare the English reading comprehension ability of grade 9 students before and learning through the flipped classroom approach and to examine students' attitudes toward teaching English reading comprehension using the flipped classroom approach. As a result, the researcher carried out data collection during the academic year 2024 first semester. The details were as follows:

3.1 Before engaging in the flipped classroom, the students complete a 40-item English reading comprehension test for an hour.

3.2 For a total of 24 hours over 12 weeks, the teaching was carried out in accordance with the 12 lesson plans.

3.3 The 40-item posttest, which was the same test as the pretest, was given to students after the entire teaching process utilizing the flipped classroom approach was finished.

3.4 The attitude questionnaire was used to investigate the students' attitude towards teaching English using the flipped classroom approach.

4. Data Analysis

Using appropriate statistics for each constructed research tool, the data gathered from those tools were examined as follows:

4.1 The process of data analysis

The following three steps were implemented to analyze the data:

4.1.1 The researcher analyzed the data to study the teaching English reading comprehension of grade 9 students using Mean ($\bar{X}$), percentage, and Standard Deviation (S.D.).

4.1.2 The researcher analyzed the data to study and compare the English reading comprehension ability of Mathayomsuksa 3 students before and after studying English reading comprehension using the flipped classroom approach using t-test for Dependent Samples.

4.1.3 The researcher analyzed the data to explain the students' English reading comprehension ability using the flipped classroom approach was significantly different at the .01 level. The post-test score was significantly higher than the set criterion of 70 percent using One-sample t-test.

4.1.4 The researcher analyzed the data to study the students' attitude towards teaching English reading comprehension using the flipped classroom approach Mean ($\bar{X}$), Standard Deviation (S.D.).

4.2 The Statistics Used in the Study

The statistics were used to analyze the information from the student attitude questionnaire and the English reading comprehension test as follows:

4.2.1 The basic statistics used to analyze the data included:

4.2.1.1 The entire class utilized percentage to evaluate how well the English reading comprehension test worked.

4.2.1.2 Mean ($\bar{X}$) and Standard Deviation (S.D.) were used for analyzing the scores of the pretest, posttest, and the students' attitudes.

4.2.2 The statistics used to analyze hypotheses

4.2.2.1 The first hypothesis compared the students' pretest scores with the criterion of 70 percent using One-sample t-test, analyzed by using SPSS program.

4.2.2.2 The second hypothesis compare between the students' pretest and post-test scores using t-test for Dependent Samples, analyzed by using SPSS program.

4.3 Criteria in Data Interpretation

The criteria for analyzing the results of the student's attitudes toward teaching English reading comprehension using the flipped classroom approach were studied in order to draw the following conclusions and interpret the data (Saiyos & Saiyos, 2000). Interpretation of score was shown as follows:

The average scores 4.50-5.00	means	Very good
The average scores 3.50-4.49	means	Good
The average scores 2.50-3.49	means	Fair
The average scores 1.50-2.49	means	Poor

The average scores 0.50-1.49   means   Very poor

Results

The purposes of this research were to study and compare the English reading comprehension ability of grade 9 students before and after learning through the flipped classroom approach and to examine students' attitudes toward teaching English reading comprehension using the flipped classroom approach. The findings of data analysis of the study as follows:

1. Results of the study and comparison of the English reading comprehension ability of grade 9 students before and after learning through the flipped classroom approach

2. Results of a study of students' attitudes toward teaching English reading comprehension using the flipped classroom approach

Results of the Study and Comparison of Scores on English Reading Comprehension Ability Before and After Studying English Reading Comprehension Using the Flipped Classroom Approach

1. The results of the students' English reading comprehension ability of grade 9 students at Nongbuapittayakarn School before and after studying English reading comprehension using the flipped classroom approach are displayed in Table 1.

Table 1   Mean, Standard Deviation and Percent of English Reading Comprehension Ability Before and After Studying English Reading Comprehension Using the Flipped Classroom Approach of grade 9 Students at Nongbuapittayakarn School. (Cont'd)

number	pretest		posttest	
	Score (40 scores)	percent	Score (40 scores)	percent
$\bar{X}$	15.63	39.08	30.07	75.18
S.D.	3.90	-	3.00	-

From Table 1, it was found that the students' pretest mean score on English reading comprehension ability was 15.63 or 39.08 percent and the posttest mean score was 30.07 or 75.18 percent.

A comparison of scores on English reading comprehension ability after studying English reading comprehension using the flipped classroom approach of grade 9 students with the set criterion of 70 percent using a one-sample t-test is presented in Table 2.

Table 2 Mean, Standard Deviation, Percent and a Comparison of the Students' English Reading Comprehension Ability After Studying English Reading Comprehension Using the Flipped Classroom Approach and a Set Criterion of 70 Percent

Test	n	$\overline{\mathrm{X}}$	S.D.	70 percent	t
posttest	30	30.07	3.00	28	3.82**
** p ≤ .01					

Table 2 Shows that the students' posttest mean score on English reading comprehension ability was 30.07. The results can be explained that the students' English reading comprehension ability after studying English reading comprehension using the flipped classroom approach was significantly different at the .01 level. The post-test score was significantly higher than the set criterion of 70 percent.

2. The results of the comparison of scores for English reading comprehension ability before and after studying English reading comprehension using the flipped classroom approach of grade 9 students using t-test for Dependent Samples is shown in Table 3.

Table 3 Mean, Standard Deviation, Percent and a Comparison of Pretest and Posttest Mean Scores of the students' English Reading Comprehension Ability Before and After Studying English Reading Comprehension Using the Flipped Classroom Approach

Test	n	$\overline{\mathrm{X}}$	S.D.	70 percent	t
pretest	30	15.63	3.90	39.08	20.10**
posttest	30	30.07	3.00	75.18	
** p ≤ .01					

Table 3 Shows that the students' pretest mean score on English reading comprehension ability was 15.63 or 39.08 percent and the posttest was 30.07 or 75.18 percent. The results indicated that the students' English reading comprehension ability before and after studying English reading comprehension using the flipped classroom approach was significantly higher than the prior one at the .01 level. Results of an Investigation of Students' Attitude towards Teaching English Reading Comprehension Using the Flipped Classroom Approach

Results of a Studying of Students' Attitude towards Teaching English Reading Comprehension Using the Flipped Classroom Approach

The researcher explained students' attitude towards teaching English reading comprehension using the flipped classroom approach by the student's attitude questionnaire which consists of 20 items to study the attitude towards teaching English reading comprehension using the flipped classroom approach. The attitude questionnaire utilized a five-point Likert's rating scale. The questionnaire was administered after completing the teaching program.

Table 4 Mean, Standard Deviation and Investigation of Students' Attitude towards Teaching English Reading Comprehension Ability Using the Flipped Classroom Approach of grade 9 Students

questionnaire	n	$\overline{X}$	S.D.	interpretation
students' attitude towards teaching English reading comprehension using the flipped classroom approach	30	4.21	0.30	Good

Table 4 illustrates that the mean of students' attitude towards teaching English reading comprehension using the flipped classroom approach was at 4.21. It indicates that students' attitude towards teaching English reading comprehension using the flipped classroom approach was at a good level.

Discussion

This study was experimental research with a one group pretest-posttest design. This research aimed to study and compare students' English reading comprehension ability before and after studying English reading comprehension using the flipped classroom approach. The results of the study can be discussed as follows:

1. The results of the study of English reading comprehension ability of grade 9 students at Nongbuapittayakarn School before and after learning through the flipped classroom approach showed that the students' pretest and posttest mean scores were 15.63 or 39.08 percent and 30.07 or 75.18 percent respectively. The results revealed that the posttest mean score was higher than the set criterion of 70 percent which was in accordance with the first hypothesis.

The study revealed that employing the flipped classroom approach was highly effective in improving students' English reading comprehension. The pretest results showed that the students initially had a low level of reading ability, mainly due to limited language knowledge, inadequate reading strategies, and insufficient reading practice outside of class. After implementing the flipped classroom approach as outlined by Bergmann and Sams (2012) over a 12-week period, students showed significant improvement in their reading comprehension. The flipped classroom approach proves to be highly effective in enhancing students' English reading comprehension skills by integrating outside-class reading assignments with engaging in-class activities.

2. The results of the comparison of the students' scores on English reading comprehension before and after learning through the flipped classroom approach indicates that the students' reading comprehension ability was significantly different at the .01 level. The post-test mean score was higher than that of the pretest which was in accordance with the second hypothesis. This may be due to the following reasons: The flipped classroom approach is an instructional method that fosters learner-centered activities both inside and outside the classroom. Students engage actively by reading individually before class and collaborating on readings

during class. As Mehring (2015) defines that the flipped classroom approach is a student-centered learning activity that supports understanding the influences, motivations, challenges, and advantages of integrating technology with this instructional method. It also assists teachers in creating student-centered courses by sharing the experiences of students who have participated in a flipped course. To enhance the effectiveness of the flipped classroom approach, incorporating group discussions can be highly beneficial. These activities allow students of varying abilities to collaborate within groups, making the learning process more accessible and understandable.

The findings associated with Hasanah and Arifani (2018) conducted research on the use of the flipped classroom approach for teaching reading in an ESP (English for Specific Purposes) class. The study aimed to evaluate the impact of incorporating video-based materials shared via Telegram on ESP students' reading comprehension. A quasi-experimental design was employed, involving 49 accounting students in a D1 Equivalent English program as the treatment group and 37 informatics engineering students who received traditional instruction as the control group. The data were analyzed using the Mann-Whitney test and the Wilcoxon signed-rank test. Results from the Mann-Whitney test indicated a significant improvement in the post-test scores of both groups, while the Wilcoxon signed-rank test revealed that the treatment group performed significantly better than the control group. These findings demonstrate that the flipped classroom approach was highly effective in improving ESP students' reading comprehension. The study concluded that implementing the flipped classroom method supports students in becoming autonomous learners and mastering ESP reading materials more effectively.

Chuaysaeng (2021) conducted a study on enhancing English reading comprehension through the flipped classroom approach. The research involved 20 grade 9 students from Bantatprachanukool School in Banphue, Udon Thani, during the second semester of the 2021 academic year under the Office of Udon Thani Primary Education Service Area 4. The findings revealed that the students' posttest scores in English reading comprehension surpassed the benchmark of 70% and showed significant improvement compared to their pretest scores. Additionally, the students demonstrated a positive attitude toward learning English reading comprehension through the flipped classroom approach, rating it at a good level.

Sittirach and Sroinan (2022) conducted a study to evaluate and compare the English reading comprehension skills of grade 10 students before and after using the flipped classroom approach. The research also aimed to explore students' attitudes toward learning English reading comprehension through this method. The study involved 30 grade 10 students from Nongwuasopittayakhom School in Udon Thani, selected using cluster random sampling during the first semester of the 2022 academic year. Employing a one-group pretest-posttest design, the researchers utilized 12 lesson plans, an English reading comprehension test, and an attitude questionnaire. Over a 12 weeks period, students received two hours of instruction per week, amounting to 24 hours in total. Data were analyzed using mean scores, percentages, standard deviation, dependent sample t-tests, and one-sample t-tests. The findings revealed that the students' mean pretest score for reading comprehension was 11.47 (28.67%), while their mean posttest score rose significantly to 33.67 (83.83%), surpassing the 70% benchmark. Additionally, students' attitudes toward learning English reading comprehension through the flipped classroom method were rated as highly positive.

3. The result of students' attitude towards teaching English reading comprehension using the flipped classroom approach presents that the mean of students' attitude was at 4.21. It indicates that the students' attitude was at a good level.

The flipped classroom approach to teaching English reading comprehension encourages active student participation by incorporating various learner-centered activities both inside and outside the classroom to

improve their reading skills. Before class, students engage independently with the reading material and supplementary resources like videos and PowerPoint presentations, identifying unfamiliar words, writing main ideas and supporting details, and generating questions for in-class discussions. This preparation allows them to better understand and complete assignments at home. During class, a collaborative and stimulating environment fosters interest in language learning. Students work individually and in groups with mixed abilities, revising and refining their assignments through group discussions and teacher feedback.

In addition, students can take responsibility for assisting one another in completing group work. After class, they can create summaries using tools like mind maps or drawings to visualize the reading material, proudly sharing their work on noticeboards or social media. According to Bergmann and Sams (2012), the flipped classroom approach enhances student interaction, encouraging active learning through various forms of management, such as group discussions. This approach offers students the chance to collaborate, support one another, and develop strong working groups. The results indicated that students' English reading comprehension abilities improved after learning through the flipped classroom approach, primarily due to their interest in the reading process. A positive attitude towards English reading instruction enables students to actively participate, leading to higher achievement in language learning. As Krashen (1981) notes, students' attitudes are closely tied to their success in language learning. Whether positive or negative, these attitudes significantly influence their behavior and learning outcomes. The findings align with Tessa and Lornklang (2021) investigated the use of a flipped classroom approach, incorporating Google Sites, to teach English listening skills to eleventh-grade students. The findings revealed that students held highly favorable views toward learning English through this method. Furthermore, the students' attitudes toward English reading comprehension, when taught using the flipped classroom approach, were also rated positively.

In summary, the flipped classroom approach is an effective teaching method for improving English reading skills, as it supports both individual and group learning. After engaging with English reading comprehension through this approach, students showed significant improvement in their reading abilities. This is because active learning activities encouraged them to enhance their skills and become more independent learners. Moreover, students expressed a positive attitude towards learning English reading comprehension through the flipped classroom method, with their feedback reflecting a high level of satisfaction.

Suggestions

1. Suggestions to apply in the field

In order to use flipped classroom approach to improve English reading comprehension ability of grade 9 students, the researcher proposes the following recommendations as follows:

1.1 The research results indicated that students' posttest scores exceeded the set criterion of 70 percent, and their reading comprehension ability improved significantly compared to their pretest scores. As a result, English teachers should consider using the flipped classroom approach to improve students' reading comprehension ability.

1.2 Based on the research findings, students' attitudes toward using the flipped classroom approach for teaching English reading comprehension revealed that this approach engages their attention both in and out of the classroom. The pre-class activities stimulated their prior knowledge and experiences before attending class, while the in-class activities encouraged collaborative learning, where students supported each other in completing group assignments. As a result, providing alternative materials can help foster active learning and better equip students with prior knowledge for in-class discussions.

2. Suggestions to apply in the future research

        According to the results discussed earlier, some suggestions were proposed for further studies.

        2.1 Researchers should investigate using the flipped classroom approach to develop other English language skills: speaking, listening, and writing.

        2.2 Researchers should apply the flipped classroom approach to other subjects and other students' levels.

        2.3 The researchers should design new activities in the teaching steps of the flipped classroom approach.

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