Reading comprehension, and attitude and behaviour, of students taught ESL by cooperative learning in Prathom (Grade)6 classrooms in Thailand

Sutaporn Chayarathee

Edith Cowan University

Follow this and additional works at: https://ro.ecu.edu.au/theses

Part of the Bilingual, Multilingual, and Multicultural Education Commons

Recommended Citation
Chayarathee, S. (2003). Reading comprehension, and attitude and behaviour, of students taught ESL by cooperative learning in Prathom (Grade)6 classrooms in Thailand. https://ro.ecu.edu.au/theses/1329

This Thesis is posted at Research Online.
https://ro.ecu.edu.au/theses/1329
READING COMPREHENSION, AND ATTITUDE AND BEHAVIOUR, OF STUDENTS TAUGHT ESL BY COOPERATIVE LEARNING IN PRATHOM (GRADE) 6 CLASSROOMS IN THAILAND

by

Sutaporn Chayarathee
B.Ed., M.Ed.

A Thesis Submitted in Partial Fulfilment of the Requirements for the Award of Doctor of Philosophy in the Faculty of Community Services, Education and Social Sciences at Edith Cowan University.

EDITH COWAN UNIVERSITY LIBRARY

Date of submission : August, 2003
Use of Thesis

This copy is the property of Edith Cowan University. However, the literary rights of the author must also be respected. If any passage from this thesis is quoted or closely paraphrased in a paper or written work prepared by the user, the source of the passage must be acknowledged in the work. If the user desires to publish a paper or written work containing passages copied, or closely paraphrased from this thesis, which passages would in total constitute an infringing copy for the purpose of the Copyright Act, he or she must first obtain the written permission of the author to do so.
ABSTRACT

A system-wide educational change has been implemented in primary, secondary and tertiary education in Thailand. One major aspect of the change was the requirement for all students from grade I onwards to study English as a second language (ESL). The change requires new methods of teaching and learning, such as cooperative learning, to be introduced in Thai ESL classrooms. This study aims to determine if cooperative learning improves English reading comprehension, and attitude and behaviour to learning ESL, compared to a Thai communicative methodology.

The study was conducted in three phases. Phase 1 involved creating a linear scale of English reading comprehension and, separately, a joint scale of attitude and behaviour. Phase 2 involved an experiment group taught by cooperative learning and a control group taught by a Thai communicative group method. Phase 3 involved the trainee teachers keeping journal records of their attitude and behaviour towards cooperative learning.

Reading comprehension was measured in three aspects: understanding the main facts, sequencing the order of ideas, and understanding the meaning from pictures. Data from 300 Prathom (grade) 6 students were analysed with a Rasch computer program to create a linear scale with 28 items from an initial group of 60 items. The data were shown to be valid and reliable, and to support the model behind the reading comprehension questions.

Attitude and behaviour towards the ESL classroom were measured on the same scale from two aspects: teaching and learning activities, and classroom interaction tasks. Data from 300 Prathom 6 students were analysed with a Rasch computer program to create a linear scale with 24 items from an initial group of 60 items. The data were shown to be valid and reliable, and to support the model behind the attitude and behaviour questionnaire.

In phase 2 of the study, the experiment involved 96 students from three primary schools in Ratchaburi, Thailand. The students from each school were randomly assigned to an experimental group and a control group. The experimental group was taught by using cooperative learning and the control group was taught by the Thai communicative method. Great care was taken to ensure that students were treated the same in all respects, except the method of learning, in both the experimental and control groups. Pretest and posttest measures were administered and significant differences tested using ANOVA (SPSS).
The four main findings from the experiment (phase 2) were that:

1. Students improved their English reading comprehension under both the cooperative learning and Thai communicative group methods of teaching;

2. Students improved their English reading comprehension under the cooperative learning method significantly more than under the Thai communicative group method;

3. Students improved their attitude and behaviour towards learning English as a second language under both the cooperative learning and Thai communicative group methods of teaching; and

4. Students improved their attitude and behaviour towards learning English as a second language significantly more under the cooperative learning method than under the Thai communicative group method of teaching.

In phase 3, the trainee teachers recommended implementation in teacher training of the results of this study in teaching cooperative learning methods in Thailand. The findings have implications for English teachers, administrators, teacher educators and for future research in Thailand.
ACKNOWLEDGEMENTS

This study would not have been possible without the support of many people. I acknowledge the support and encouragement from my two supervisors who have been central to the completion of this thesis. I sincerely thank Dr. Russell Waugh, who has given much knowledge, expertise in Rasch analysis and for his support, and Dr. Margaret Bowering, who has given much for guidance, critical comment, and expertise in TESOL. I appreciate them both very much.

My grateful thanks are extended to the directors, the regular English teachers and the students of the four schools, Samutsakornburana school, Watchonglom school, Watpikultong school and Wat Don Ta-Lung school, who generously gave their time to participate in the study, the first school through the pilot tests, while the other three for participating in the experiment and being willing participants of a group discussion. Their cooperation and involvement has provided valuable knowledge for this study.

This study would have never been completed without special assistance from the three trainee teachers, Miss Saowaluck Pongsak, Miss Sukumal Pasane and Miss Yachit Larpiawee. I am indebted to them for their assistance during the study.

Special appreciation is expressed to Dr. Steven J. Torok and Mrs. Sanguansri Torok, my dear brother and sister who always give their continual assistance and support during my study.

The great friendly and kind assistance of Miss Siriporn Siriphoka and Mrs. Nanthaporn Puktun my true friends, are deeply appreciated.

Special gratitude and much loving care are expressed to my parents, Captain Suksiri and Mrs. Somporn Chayarathee, for their financial support, understanding and encouragement throughout the doctoral program.

I sincerely thank them all.
DECLARATION

I certify that this thesis does not to the best of my knowledge and belief:

(i) incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education;

(ii) contain any material previously written by another person except where due reference is made in the text; or

(iii) contain any defamatory material.

Signature

Date 9 April 2004
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title page</td>
<td>i</td>
</tr>
<tr>
<td>Use of thesis</td>
<td>ii</td>
</tr>
<tr>
<td>Abstract</td>
<td>iii-iv</td>
</tr>
<tr>
<td>Acknowledgement</td>
<td>v</td>
</tr>
<tr>
<td>Declaration</td>
<td>vi</td>
</tr>
<tr>
<td>Table of contents</td>
<td>vii-x</td>
</tr>
<tr>
<td>List of tables</td>
<td>xl</td>
</tr>
<tr>
<td>List of figures</td>
<td>xii</td>
</tr>
<tr>
<td>List of appendices</td>
<td>xiii</td>
</tr>
</tbody>
</table>

## CHAPTER ONE : INTRODUCTION

Introduction  1
The Thailand education system  1
  - The structure of the education system  1
  - The reforms of 1999  2
  - Teacher training in the Rajabhat Institutes in Thailand  3
English as a second language  4
  - Importance of English language study  4
  - Teaching English reading comprehension  4
Purpose  7
Research Questions  7
Limitations  8
Definition of Terms  9
  - Primary School  9
  - Fundamental English  9
  - English reading comprehension  9
  - Cooperative learning  9
  - Thai communicative teaching method  10
  - English reading comprehension tests  10
  - Attitude and behaviour towards learning ESL  11
  - Attitude and behaviour towards teaching ESL  11
  - Group discussion  11
Structure of the thesis  11

## CHAPTER TWO : LITERATURE REVIEW

Teaching and models of reading  14
  - Whole language approach to Teaching Reading  16
Collaborative Learning  17
  - The theory of collaborative learning  17
  - Related research in Thailand  19
  - The organisation of cooperative learning  20
  - Studies on cooperative learning  26
  - Research about attitude and behaviour towards cooperative learning  29
End comment  32
CHAPTER THREE: MODEL AND THEORETICAL FRAMEWORK
How students learn ESL
  - Model of ESL reading
  - Organisation of cooperative learning
  - Expected links between attitude and behaviour
Hypotheses

CHAPTER FOUR: MEASUREMENT: READING COMPREHENSION, AND ATTITUDES AND BEHAVIOUR
Measurement
  - Introduction
  - Problems with True Score Measurement Theory
  - Rasch measurement and the RUMM computer program
The Reading comprehension test
  - Pilot testing of the reading test
Attitude and behaviour measurement
  - Questionnaire
  - Model of the questionnaire
  - Pilot testing of the questionnaire

CHAPTER FIVE: METHODOLOGY
Introduction
  - Pilot testing (Thai version)
Data Collection and analysis (phase 1)
  - Sample (phase 1)
  - Ethics procedure (phase 1)
  - Data preparation (phase 1)
Data collection and method of analysis (phase 2)
  - The experimental design (phase 2)
  - Sample (phase 2)
  - Procedure (phase 2)
  - Research design
  - Pretests and posttests (phase 2)
  - Controls in the experiment (phase 2)
Data collection and method of analysis (phase 3)
  - Discussion group meetings
  - Discussion group data

CHAPTER SIX: DATA ANALYSIS (PHASE 1) CREATING SCALES TO MEASURE ACHIEVEMENT OF READING COMPREHENSION, AND ATTITUDES AND BEHAVIOURS TOWARDS READING COMPREHENSION
Data analysis with the RUMM computer program
Results of Phase 1 testing
CHAPTER SEVEN : DATA ANALYSIS (PHASE 2) : THE EXPERIMENTAL RESULTS

Introduction 88
Reading Comprehension measure 89
Posttest versus pretest results for the experimental group 89
Posttest versus pretest results for the control group 90
Pretest versus pretest results for the experimental versus the control group 90
Posttest versus posttest results for the experimental versus the control group 91
Interaction effect 91
Attitude and behaviour measure 93
Posttest versus pretest results for the experimental group 93
Posttest versus pretest results for the control group 94
Pretest versus pretest results for the experimental versus the control group 95
Posttest versus posttest results for the experimental versus the control group 95
Interaction effect 96
Summary of results 97
Reading comprehension measure 97
Attitude and behaviour measure 97

CHAPTER EIGHT : ANALYSIS OF GROUP DISCUSSIONS AND JOURNAL DATA

Introduction 98
Group discussion data 98
Group discussions 98
Trainee teachers comments about the experimental method of teaching 99
The first group discussion 99
The second group discussion 101
The research question 105

Journal data 106
Trainee teachers' journals entries about the experimental method of teaching 106
The research question 115

CHAPTER NINE : SUMMARY, RESEARCH QUESTIONS, AND IMPLICATIONS

Summary of the study 116
Summary of the Findings 117
The English reading comprehension 117
The attitude and behaviour questionnaire 118
Trainee teacher journals 119
Group discussion 119
Research questions 120
Research question 1 120
Research question 2 120
Research question 3 121
Research question 4 121
Research question 5 121
Research question 6 122
Implications 122
For administrators, lecturers and trainee student teachers 122
For students learning ESL 123
For further research 124
References 125
<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Roles and Activities in cooperative groups</td>
<td>24</td>
</tr>
<tr>
<td>2.2</td>
<td>A Comparison of Traditional and Cooperative Learning Groups</td>
<td>25</td>
</tr>
<tr>
<td>3.1</td>
<td>Summary of Reading Lessons</td>
<td>36</td>
</tr>
<tr>
<td>5.1</td>
<td>Reading comprehension data entered into an Excel program</td>
<td>53</td>
</tr>
<tr>
<td>5.2</td>
<td>Attitude and behaviour questionnaire data entered into an Excel program</td>
<td>54</td>
</tr>
<tr>
<td>5.3</td>
<td>Planned time scheduling during the experiment</td>
<td>57</td>
</tr>
<tr>
<td>5.4</td>
<td>The pretest and posttest administration for the experiment</td>
<td>59</td>
</tr>
<tr>
<td>6.1</td>
<td>Summary statistics for 32 item English reading comprehension test</td>
<td>64</td>
</tr>
<tr>
<td>6.2</td>
<td>The difficulties of the final 32 items for English reading comprehension</td>
<td>65</td>
</tr>
<tr>
<td>6.3</td>
<td>Summary statistics for 40 item students' attitude and behaviour measure</td>
<td>67</td>
</tr>
<tr>
<td>6.4</td>
<td>The final 40 items for the attitude and behaviour measure</td>
<td>68</td>
</tr>
<tr>
<td>7.1</td>
<td>One way ANOVA : Statistics for the reading comprehension experiment</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td>measure by pretest and posttest for the experimental group (N=48).</td>
<td></td>
</tr>
<tr>
<td>7.2</td>
<td>Statistics for the reading comprehension measure by pretest and posttest</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>for the control group</td>
<td></td>
</tr>
<tr>
<td>7.3</td>
<td>One way ANOVA : The reading comprehension pretest results for the</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>experimental group versus the control groups</td>
<td></td>
</tr>
<tr>
<td>7.4</td>
<td>One way ANOVA : The reading comprehension posttest results for the</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>experimental group versus the control groups</td>
<td></td>
</tr>
<tr>
<td>7.5</td>
<td>The reading comprehension interaction effect of the experimental</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>versus the control groups</td>
<td></td>
</tr>
<tr>
<td>7.6</td>
<td>Statistics for the attitude and behaviour measure by pretest and</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>posttest, the experimental group (n=48)</td>
<td></td>
</tr>
<tr>
<td>7.7</td>
<td>Statistics for the attitude and behaviour measure by pretest and posttest</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td>for the control group (N=48)</td>
<td></td>
</tr>
<tr>
<td>7.8</td>
<td>One way ANOVA : The students' attitude and behaviour questionnaire</td>
<td>95</td>
</tr>
<tr>
<td></td>
<td>pretest results for the experimental versus the control group</td>
<td></td>
</tr>
<tr>
<td>7.9</td>
<td>One way ANOVA : The students' attitude and behaviour questionnaire</td>
<td>95</td>
</tr>
<tr>
<td></td>
<td>posttest results for the experimental versus to control group</td>
<td></td>
</tr>
<tr>
<td>7.10</td>
<td>The attitude and behaviour questionnaire interaction effect between the</td>
<td>96</td>
</tr>
<tr>
<td></td>
<td>experimental and control groups</td>
<td></td>
</tr>
<tr>
<td>8.1</td>
<td>Trainee teachers' observation for teaching/learning activities</td>
<td>111</td>
</tr>
<tr>
<td>8.2</td>
<td>Trainee teachers' observation for classroom interaction</td>
<td>113</td>
</tr>
<tr>
<td>9.1</td>
<td>Possible topics for an inservice course on cooperative learning</td>
<td>122</td>
</tr>
<tr>
<td></td>
<td>for teachers in Thailand</td>
<td></td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Cooperative learning pyramid</td>
<td>21</td>
</tr>
<tr>
<td>2.1 Brown’s values charter</td>
<td>22</td>
</tr>
<tr>
<td>2.3 Ajzen’s model</td>
<td>31</td>
</tr>
<tr>
<td>3.1 A conceptual Model of Second Language Acquisition (SLA)</td>
<td>34</td>
</tr>
<tr>
<td>3.2 A model of English reading comprehension development</td>
<td>37</td>
</tr>
<tr>
<td>4.1 Scale of item difficulties with person measures (idealised)</td>
<td>43</td>
</tr>
<tr>
<td>4.2 Attitude and behaviour questionnaire</td>
<td>48</td>
</tr>
<tr>
<td>4.3 A model of students’ attitude and behaviour</td>
<td>49</td>
</tr>
<tr>
<td>5.1 Design for data collection and analysis (phase 2)</td>
<td>58</td>
</tr>
<tr>
<td>6.1 Person measures plotted against item difficulties for reading comprehension</td>
<td>70</td>
</tr>
<tr>
<td>6.2 Students’ reading comprehension and item ‘difficulties’ calibrated on the same scale</td>
<td>70</td>
</tr>
<tr>
<td>6.3 Item Category Curve for reading comprehension item 1 (originally no.36) (good fitting item)</td>
<td>71</td>
</tr>
<tr>
<td>6.4 Item Category Curve for reading comprehension item 11 (originally no.29) (not-so-good fitting item)</td>
<td>72</td>
</tr>
<tr>
<td>6.5 Person item map (reading comprehension measures versus item difficulty, for understanding the main ideas)</td>
<td>74</td>
</tr>
<tr>
<td>6.6 Person item map (reading comprehension measures versus item difficulty, for sequencing the order of ideas)</td>
<td>75</td>
</tr>
<tr>
<td>6.7 Person item map (reading comprehension measures versus item difficulty, for understanding the meaning from pictures)</td>
<td>76</td>
</tr>
<tr>
<td>6.8 Students’ Attitude and Behaviour measures (top) and item difficulties (bottom) calibrated on the same scale</td>
<td>77</td>
</tr>
<tr>
<td>6.9 Attitude and behaviour measures and item thresholds calibrated on the same scale</td>
<td>78</td>
</tr>
<tr>
<td>6.10 Person item map (attitude and behaviour measures versus item difficulties for ideal expectations for tasks in classroom interaction)</td>
<td>80</td>
</tr>
<tr>
<td>6.11 Person item map (attitude and behaviour measures versus item difficulties for student ideal expectations for relationships)</td>
<td>81</td>
</tr>
<tr>
<td>6.12 Person item map (attitude and behaviour measures versus item difficulties for behaviour on tasks)</td>
<td>82</td>
</tr>
<tr>
<td>6.13 Person item map (attitude and behaviour measures versus item difficulties for behaviour on student relationships)</td>
<td>83</td>
</tr>
<tr>
<td>6.14 Item Category Curve for item 32 in the attitude and behaviour measure (good fitting item)</td>
<td>84</td>
</tr>
<tr>
<td>6.15 Item Category Curve for item 58 attitude and behaviour measure (not-so-good fitting item)</td>
<td>86</td>
</tr>
<tr>
<td>7.1 Graph of reading comprehension means (Pretest/posttest v experimental And control groups)</td>
<td>92</td>
</tr>
<tr>
<td>7.2 Graph of Attitude and Behaviour towards reading comprehension means by pretest and posttest for experimental and control groups</td>
<td>96</td>
</tr>
<tr>
<td>Appendix</td>
<td>Title</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Appendix A</td>
<td>Lesson Plans for 16 periods</td>
</tr>
<tr>
<td>Appendix B1</td>
<td>A letter to students</td>
</tr>
<tr>
<td>Appendix B2</td>
<td>A letter to trainee teachers</td>
</tr>
<tr>
<td>Appendix B3</td>
<td>A letter to school principals</td>
</tr>
<tr>
<td>Appendix B4</td>
<td>A letter to English teachers</td>
</tr>
<tr>
<td>Appendix B5</td>
<td>A letter to English teachers for pilot study</td>
</tr>
<tr>
<td>Appendix C1</td>
<td>Students’ attitudes and behaviour questionnaire in relation to learning English (Thai version)</td>
</tr>
<tr>
<td>Appendix C2</td>
<td>Students’ attitudes and behaviour questionnaire in relation to learning English (English version)</td>
</tr>
<tr>
<td>Appendix C3</td>
<td>Teachers’ attitude and behaviour in relation to learning English (Thai version)</td>
</tr>
<tr>
<td>Appendix C4</td>
<td>Teachers’ attitude and view of behaviour in relation to learning English (English version)</td>
</tr>
<tr>
<td>Appendix D</td>
<td>Initial reading comprehension test (60 items)</td>
</tr>
<tr>
<td>Appendix E</td>
<td>Final reading comprehension test items after Rasch analysis (32 items)</td>
</tr>
<tr>
<td>Appendix F</td>
<td>Trainee teachers’ journal entries about the experimental method of teaching (Thai version)</td>
</tr>
<tr>
<td>Appendix G</td>
<td>Item-person interaction test-of-fit statistics for English reading comprehension (Rasch analysis)</td>
</tr>
<tr>
<td>Appendix H</td>
<td>Item-person interaction test-of-fit statistics for students’ attitudes and behaviour towards reading comprehension (Rasch analysis)</td>
</tr>
<tr>
<td>Appendix I</td>
<td>Students’ reading comprehension and item ‘difficulties’</td>
</tr>
<tr>
<td>Appendix J</td>
<td>Students’ attitudes and behaviour and item thresholds</td>
</tr>
</tbody>
</table>
CHAPTER ONE

INTRODUCTION

This chapter introduces the reader to the development of English reading comprehension in primary school in Thailand as one of the objectives of the Thai educational system which has now being changed by authority of the National Education Act (1999). This Act describes a major, system-wide change to primary, secondary and tertiary education in Thailand, and teacher training is one area that must be changed as part this Act, especially in the English as Second Language courses. English is now being taught to all primary students from grade one, and could be improved through the use by teachers of the cooperative learning methods for teaching reading comprehension, rather than the traditional Thai communicative method (defined later in this chapter).

The Thai Educational System

The structure of the education system

In Thailand, the current education system plan provides six years for primary school and three plus three years for secondary school, followed by higher education. The primary school is made up of Prathom one through Prathom six (equivalent to grade one through Grade six of the American School System). The secondary school consists of Matayom one through Matayom six (equivalent to Grade seven through Grade twelve of the American School System).

English instruction begins at Prathom one (aged 7 years). There is Preparatory English for Prathom one-two, Literacy English for Prathom three-four, and Fundamental English for Prathom five-six (Primary School Education, 1996). The instructional plan is for 4 hours per week of tuition, during which the emphasis is on the four skills of language learning: listening, speaking, reading and writing.

The subjects for secondary school are classified into 8 groups: Health Education and Physical Education; Art, Music and Dramatic Art; Mathematics; Thai Language; Social Studies; Science and Technology; Career and Work Education; and English Language. The first three years of secondary school, Matayom one to three are considered to be lower secondary school, and Matayom four to six are the higher
secondary level. At the secondary level, English is now a compulsory subject. The instructional plan is for a four hours per week Core Course which emphasizes the four skills of listening, speaking, reading and writing English. There is a choice of an additional elective for two hours per week: Activating English or Basic Reading (Ministry of Education, 1996). English courses offered at the higher secondary school level can be divided into three categories. The first one is a General English course dealing with four basic communication skills-listening, speaking, reading and writing. The second is an advanced English course emphasising specific skills in reading and writing, and the third is Technical English.

Higher education in Thailand includes Rajabhat institutes, technical institutes, private colleges, and universities. Students who have completed the secondary school level are eligible for entrance examination to colleges and universities. All the Rajabhat, which are the main teacher training institutes in Thailand now operate on a semester and credit/grade system: a four-year degree requires that a student study a course that has 130-140 credits, including a foreign language. English is compulsory in the first year of all Rajabhat and, in many, it is compulsory in the second year and beyond, depending on the subject area studied. At present, many Rajabhat give the major emphasis to reading skills, with separate listening and speaking classes. Since English is not the medium of instruction in the Rajabhat, relatively few students will need to speak or listen to English, but a reading knowledge of the language will always be essential, not only for all educated persons but for almost anyone, who goes beyond the secondary school stage of education.

The Reforms of 1999

Education reform introduced by the National Education Act of 1999 of Thailand is based on five principles. The first principle involves learning to be good citizens. A new generation of Thai citizens must be equipped with both knowledge and morality. Students must have sympathy for other people, discipline, and a great sense of responsibility. The second involves learning to create a strong society. When Thai citizens share the same ideals and understand how to think and solve problems, and learn to sacrifice for the common good, there will be less conflict and tension in society. Reform of the political and economic systems, as well as the civil service, will be attainable. The third involves learning to cope with globalisation. In the age of globalisation, Thai students must learn to get information and make use of it. Knowledge of a foreign language is therefore necessary, if Thai people are to utilise the
internet and new information technologies. The fourth involves learning through partnerships, because the current learning reform needs the participation of parents and communities. The fifth involves learning in line with education’s legal requirements. The teacher’s role must change from being a ‘teller’ to a ‘facilitator’, while learners should be able to learn by themselves. To be able to do so, students need model teachers to tell them how to learn, where to get information, and how to make use of it (Thai National Education Act 1999, p. 32).

Teacher training in the Rajabhat Institutes in Thailand

There are now 41 Rajabhat institutes which were formerly Thailand’s teacher-training colleges. The Office of Rajabhat Institutes Council (ORIC) is the department within the Ministry of Education which has responsibility for the overall administration for all of Thailand’s 41 regionally-based Rajabhat Institutes. These colleges are now responsible for full-time and in-service teacher training, and for the operation of any other programs supported by government budget allocations (ORIC, Ministry of Education, 1998, p. 2).

As a result of this education reformation in Thailand, there have been changes in the curricula of Rajabhat Institutes. The office of the National Education Commission (1999) considered that “The Rajabhat Institutes shall be graduate education institutes for local development with the objective of providing academic and high level vocational education: conduct research as academic service to the general public: improve, transfer and develop technology...” (ORIC, Ministry of Education, 1998, p. 2). There has, therefore, been a concerted effort to upgrade training and education of the Thai population. This has made it necessary to alter and develop the Rajabhat Institutes to consider the needs of a wider section of the population, especially for trainee teachers, to prepare them to serve their communities and to improve the process of developing their ability to meet basic average criteria in English.

The general problem of the limited proficiency of English teachers in the Rajabhat Institutes still remains. Students who would like to become English teachers have lower entrance requirements than the ones who enter from other fields or the ones who pass the university entrance examination. Thus, the Rajabhat Institute lecturers have weaker students than those in universities (Wongsothorn, 1996, pp. 99-100). While this is a problem for the Rajabhat Institute lecturers, the English trainee teachers are well motivated to become good professional teachers, and they are keen to do well.
English as a Second Language

Importance of English language study

At present in Thai schools, the emphasis in the English language program is given to the development of reading skills, although the other macro-skills of listening, speaking and writing are also taught. A reading knowledge of the language will always be essential, not only for all educated persons, but also for almost anyone who goes beyond the primary school stage of education. Because of globalisation, English is a compulsory subject for Thai school students at all levels. Although Thai students start to learn English at the fundamental level of education in Prathom 1 (grade 1), most students achieve only a low level of English proficiency and, as a result, cannot read, write or communicate in English. Their English proficiency level seems to be lower than the English level needed for use (Savangvarorose, 1992; Wongsothorn, 1996). A recent investigation of Metropolitan Bangkok schools, which can be found in Vacharaskunee (2000), shows the problem of English teaching rests with the teachers. In spite of the fact that students are taught English for more than 12 years before finishing their education, most of them cannot effectively use English (Torut, 1994; Ministry of Education, 2000). Several research studies in the field of English reading in Thailand for the last fifteen years show that the English reading ability of secondary school students, even at university level, is low. Students cannot achieve the main objectives stated in the reading syllabus about reading for information, comprehension and critical reading of the texts (Chayarathee, 1994; Sawasdiwong, 1992; Vanichbutr, 2000).

Teaching English reading comprehension

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 skillful in relation to teaching methodology (Noisaengsri, 1992; Chittawat, 1995). Such studies as these showed that most of the teachers start their classes with the 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 extremely boring. This traditional approach to teaching leads to the development of
negative attitudes towards learning English, as there is no active participation and incentive in learning with this method of teaching.

Training courses on appropriate methodologies for use in the teaching of reading have been organized so that teachers may benefit from research insights. Literacy research tends to focus on the design of successful instructional approaches (for example, in Hawaii, Au & Raphael, 2000). A method that has been found to be effective in teaching reading, and which may be used to assist teachers to achieve their goal, is cooperative learning. It is one of the most thoroughly researched of all instructional methods (Slavin, 1990a). Researchers agree that cooperative learning does have a positive effect on student achievement, if the approach includes both positive interdependence and individual responsibility (Whittaker, 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 (Zisk, 1996). The approach recommended by Stark (2001) is also adopted in the English syllabus of the Thai Primary School Education Act 2539 (1996), where the objectives require students to be able to:

1. communicate accurately and use suitable cultural forms;
2. have enough basic English for their further education, or their vocation;
3. use basic English in communication, such as mime, in real situations;
4. have knowledge and understanding of cultural norms in using English;
5. acquire knowledge from reading English books and other English materials; and,
6. have positive attitudes in studying English and appreciate the value of studying English.

The English syllabus at primary level (1996) contains the following three suggestions about how to study and teach English in the classroom. The first is that the English syllabus emphasises students’ English communicative ability. Students are expected to be able to use English in socio-cultural settings accurately and suitably. The second principle relates to student-centered education, and states that English should be used as much as possible with the help of a variety of materials at all levels of ability. The third is that the method should suit the level. In preparatory English for example, the emphasis is on enjoyable activities, related to listening and speaking in English. In Literacy English, eclectic activities in reading and writing are implemented, including spelling basic words which can lead the students to have the ability to communicate in the four skills (listening, speaking, reading, and writing) accurately and
suitably. Thus, again, all these guidelines are expected to lead to better English reading performance for Thai students.

The guidelines for managing English classroom teaching in Thai primary schools are centred on the student’s ability to communicate in two ways. Namely, that students are able to use English in socio-cultural contexts, as well as to communicate ideas accurately and suitably. Classroom management should exhibit features such as a student-centered approach, and meaningful and varied communication activities. Students have the chance to practise communication by listening and speaking at Preparatory English level, practise communication by reading, writing and spelling words in the Literacy English level, and practise “sending and receiving” ideas by listening, speaking, reading and writing in the Fundamental English level. Cooperative learning combines the four skills by fostering social skills which promote interaction appropriate to the particular task.

From these guidelines, it can be concluded that cooperative learning is a means of implementing student-centered activities, where mixed groups of students are working together to achieve the goal. Good communication and social skills are needed in order to develop a good working relationship. Through such good working relationships about reading materials in pairs and small groups, it is claimed that better reading comprehension will be achieved (Stark, 2001, p. 11).

Up to this point, there has been very little research about cooperative learning in English reading comprehension in Thailand (Intalaprasert, 1991), but there has been some such research in teaching mathematics and science classes (Rattanakornkul, 1993; Whatsongnom, 1993). Towards filling this gap, the current research deals with English reading comprehension at the primary level. The design aims to compare the effects on English reading comprehension of teaching by two different methods, that is by the Thai communicative method, and by a cooperative learning method. It is based on 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 ESL. 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 leads to 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 second language. This improves on the current models and explanations.

**Purpose**

This study, designed to investigate the implementation of a cooperative reading comprehension approach to instruction of English in Thai primary schools, has four aims:

1. To test the success of teaching English as a Second Language using a cooperative learning method of teaching reading comprehension compared with a Thai communicative method;
2. To investigate student self-reported attitude and behaviour in regard to learning English as a second language when students are taught using a cooperative learning method (compared with a Thai communicative method);
3. To investigate trainee teacher self-reported attitude and behaviour in teaching English reading comprehension with cooperative learning, based on their journal reports;
4. To evaluate the results of the study for future policy, with the participating trainee teachers and their regular English teachers, at the participating schools, using a group discussion approach.

**Research Questions**

1. Do the students improve their English reading comprehension as a result of being taught using a cooperative learning method compared with when they are taught using a Thai communicative method?
2. What are Thai student self-reported attitudes and behaviours to learning English when taught using a cooperative learning method? And are these different to those of students taught by a Thai communicative method?
3. What are Thai trainee teacher self-reported attitudes and behaviors to teaching English using cooperative learning and Thai communicative methods?
4. What recommendations can be given for better classroom implementation in English reading comprehension in the primary schools based on a group discussion by some of those involved in implementing the approach?
5. Can a linear measure of English reading comprehension, based on three activities
(understanding the main idea, sequencing the order, and understanding the meaning), be constructed using a Rasch measurement model?

6. Can a linear measure of attitude and behaviour to ESL, based on two aspects (teaching and learning activities, and classroom interaction) and two perspectives (ideally, this is what should happen, and this is what really happens), be constructed using a Rasch measurement model?

**Limitations**

The measures created in this study and the results of the experiment and interviews are limited in the scope to which they may be applicable.

The attitude and behaviour measurement scale and the reading comprehension test scale were piloted with a large provincial government primary school in Thailand. They might not be applicable to most of Thailand, where other provincial schools exist under the control of the Ministry of Education and, in Bangkok, and where different problems exist. The actual experimental results of the research were derived from a sample of one large, one medium, and one small provincial government school, and, strictly, the results are not applicable to other types of provincial government schools in Thailand. For example, the results may not strictly apply to metropolitan Bangkok schools, to private schools, or to other schools in the southern part of Thailand because there are socio-economic and cultural differences at these schools that might affect learning ESL.

The experiment used only grade 6 students and the results may be applicable only to grade 6 students. Lower and higher grade students may learn ESL differently, perhaps because of less or more maturity, or there may be other reasons for the differences.

The timing of the study for the participating students and trainee teachers had to fit with established scheduling and practice teaching. This was limited to the last part of the final semester of the three trainee teachers, before their completion of the practice teaching requirements of their diplomas. This was also the end of the school term for the three primary schools where the trainees practised. This very tight time limitation was successfully met by the teachers and schools involved. These time controls may mean that the results are not applicable to ordinary classroom times.

The results might be applicable only to Thailand. They are not strictly applicable to other South East Asia countries, although they may be.
The usual limitation of self-reported questionnaires applies to the attitude and behaviour questionnaire used in this study. It is assumed that students and teachers give truthful and not socially desirable answers, and every effort was made to see that this happened, but some students might have given socially-desirable answers.

**Definition of terms**

In the context of this research study, terms have the following meaning.

**Primary School**: Boys and girls must attend primary school from the age of seven years to twelve years in Thailand.

**Fundamental English**: Three periods (20 minutes each) of Fundamental English must be provided in Prathom 6, according to the curriculum.

**English Reading Comprehension**: Second language readers obtain meaning from texts by actively using both lower and higher level skills to decode the smaller elements and construct the meaning; 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.

**Cooperative learning**: This is an instructional technique, in which students are divided into small mixed groups working together to complete instructional activities. The steps of cooperative learning are based on Maltby, Gage and Berliner (1995, p. 411) of Student Teams-Achievement Division. Here the method has been adapted with the creation of suitable steps for second language learners at the elementary level. According to this procedure, the teacher should:

1. Clearly specify the objectives for the lesson (in Thai and English);
2. Divide students into groups of 4 for each learning team. Each team should be heterogeneous in terms of ability and gender;
3. Introduce a new reading text. Students work freely in their groups to offer different answers to the problems, brainstorming, and sharing ideas, so they realize that their goal is understanding. They continue to work until each group member feels he/she gets the concepts involved in the exercise, through questioning each other in pairs;
4. Evaluate the students’ achievement and check 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;

5. The team with the highest score is given a reward, or the team’s work is displayed on the bulletin board.

Thai communicative teaching method: This phrase is used to describe the normal teaching style used in their classrooms for teaching ESL. Although the latest English syllabus includes an emphasis on the teaching of meaning rather than form, trainee teachers are still advised to use the 3P procedure, Presentation, Practice and Production as a basic framework for their lessons.

1. Presentation. Teachers present new vocabulary and some expressions from the passage to the students (in Thai and English);

2. Practice. Students practise by repeating the new words and expressions after the teacher two or three times in whole class, groups and 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;

3. Production. Students engage in production, by writing answers to the reading comprehension exercises.

This traditional method, derived from behaviourist principles of an earlier time, is now most frequently adapted to introduce aspects of Communicative Language Teaching including some group and pair work. Thus the Thai communicative method could be described as a workable compromise in terms of approach and one considered best suited to the diverse conditions of the Thai ESL classroom.

As pointed out in the following extract from the Thai English Syllabus of 1996, p.10.

“The class teacher should emphasize child-centred activities of various kinds in order to promote communication in different situations.”

English reading comprehension test: The test consisting of 32 multiple choice items was trialled with other Prathom 6 primary schools and then the data were analysed with a Rasch Measurement Model computer program (Andrich, Sheridan, Lyne & Lou, 2000) to create a linear scale. Data from 300 students were analysed with a Rasch computer program. Of the original 60 items, only 32 ‘survived’ the analysis. The test is given in Appendix D.
Attitude and behaviour towards learning ESL: The learner version of the questionnaire contains 12 items on teaching/learning activities, and 8 items on classroom interaction. Each item was answered from the two perspectives of attitude and behaviour. Data were analysed with a Rasch measurement computer program to create a linear scale. For this, the 300 students who completed the comprehension test also completed the questionnaire. Twenty items out of the original thirty-two were found to form a unidimensional scale and were used subsequently in the teaching experiment. This questionnaire is given in Appendix C.

Attitude and behaviour towards teaching ESL: The same questionnaire (in relation to cooperative learning) was used for the trainee teachers as for the English teachers. The questionnaire and the trainee teachers' journals were used in the evaluation interviews. The questionnaire is given in Appendix B.

Group discussion: A discussion group is a small group made up of perhaps six to ten individuals with certain common feature characteristics, with whom a discussion can be held to focus onto a given issue or topic (Wellington, 1992, p.55). In this research, the group was used for evidence gathering and research management purposes as well as for analysing the evidence gathered to arrive at policy recommendations, extending, thus, Wellington's definition of focus groups. The current study may therefore refer to problem solving group discussions.

Structure of the thesis

This thesis is comprised of three parts with a total of ten chapters and appendices. Part one (chapters one to three) reports on the introduction, literature review and the theory. Part two reports the results of the actual teaching experiment (chapters four to seven). Part three (chapters eight to nine) reports on the results of the focus group discussions, conclusion and recommendations for future research and implications of the results of the study. Technical details are included in the Appendices.

Part One

Chapter one introduces the reader to the Thailand Educational System and Learning English as a Second Language. Background to the study is provided and its
relevance discussed. The research questions and aims of the study are also presented in this chapter.

Chapter two is the literature review which highlights the model of teaching ESL and theories of learning ESL. The chapter also identifies the value of cooperative learning and a summary is presented.

Chapter three presents the model and theoretical framework. Discussion from the problems with attitude and behaviour measures and problems with reading comprehension measured. The model to be tested is described.

Part Two

Part two of the study involves the experiment which consists of three chapters (chapter 4-7). Chapter four is comprised of three parts Part one is a description of the attitude and behaviour questionnaire and English reading comprehension test, followed by the subsequent use of a Rasch model of measurement (Phase1). The pilot test for the attitude and behaviour questionnaire and the pilot test for the English reading comprehension test is described, including the findings that provide directions for improvements to the questionnaire and English reading comprehension test. Part two (Phase 2) is a description about the experimental measures which include attitude and behaviour measures and reading comprehension measures. The interview in Part three (Phase 3) is outlined and a summary is presented.

Chapter five provides a description of the method of the study, including data collection. The controls and problems in the pretests, the experiment and the focus group are presented.

Chapter six presents the data analysis and findings. The process of analysis using the RUMM (2010) computer program for the pilot study is explained and the results presented, giving the psychometric characteristics of both the attitude and behaviour measure and the reading comprehension measure. Final items selected are described and the data are analysed ready for the experiment. Possible future improvements are mentioned.

Chapter seven presents the data analysis and finding using ANOVA for attitude and behaviour, and the reading comprehension results.

Part three

Part three consists of two chapters (chapters 8 and 9). Chapter eight explains the information presented at the discussion group, discusses the results of the study,
difficulties in implementation, and explanation of the results. The conclusions, and recommendations of the discussion group are presented.

Chapter nine, the final chapter, provides a summary of the study and draws together the conclusions and implications of the study for Rajabhat Institute lecturers and students, the Thai secondary education system and for future research. The Appendices contain lesson plans and other data relevant to the study.
CHAPTER TWO

LITERATURE REVIEW

In this chapter, the general subject of teaching second language reading is discussed, and then the whole-language-approach, based on assumptions about student-centred learning, as well as the theory of collaborative learning. The theory of cooperative learning is then summarized, including the organisation of cooperative learning studies. Cooperative learning concepts applied to the teaching of reading are summarised. Finally, research on the attitude and behaviour of students and teachers in learning and teaching are discussed.

Teaching and models of reading

Reading is a specialized and complex skill involving a number of more general skills that have to be understood in any serious analysis of the subject (Smith, 1971). It is an act of communication in which information is transferred from a transmitter to a receiver, whether the reader is a scholar deciphering an ancient text or a child identifying a single letter on a blackboard.

The teaching of reading is full of “mythology, opinion and polarized positions” (Goodman, 1968). The respective activities of breaking the codes and of gaining meaning “are seen by various theorists as having a different emphasis in the child’s developing competence” (Riley, 1996, p.17). The knowledge inside the reader’s head which is the knowledge of what the world is like, of how language functions, as well as of the purposes and conventions of written language, is more important to comprehension than the information that actually appears on the printed page (Goodman, 1982; Smith, 1971). For example, readers interact with texts and arrive at their own interpretation of the text, based partly on the knowledge they draw from the text and partly on their prior knowledge of the topic (Grabe, 1991; Carrell, 1985).

Two of the dominant models directly oppose each other. ‘Bottom-up’ theories offer a subskills approach, which suggests that reading is learned initially by manipulating the smallest units of language (for example: letters, words). The reverse position is taken by theories commonly referred to as ‘Top down’. These theories suggest that “the search for meaning is central from the outset, and that the main
strategies for decoding are prediction and guessing" (Riley, 1996, p.17). Cooperative learning supports the 'top down' theory where the set tasks are planned to focus upon meaning above the word or sentence level. Studies show that skilled readers do not sample portions of the text, but rather process the whole text, rapidly and automatically. In currently accepted evidence-based model of reading, bottom-up process and top-down process proceed in parallel (Rumelhart, 1977; Stanovich, 1980). Both sorts of processes are vital to skilled reading and thus to the teaching of reading comprehension to young learners. In support of this view, David Eskey contends that a good reading model must include sound decoding or bottom-up skills (Eskey, 1988).

In terms of the value of collaborative activity for second language learning, research in the last twenty years has concentrated on oral rather than written work eg Long and Porter, 1985, McGreary, 1986. Better understanding of content and greater opportunities to practice the language in meaningful situations resulted from group-negotiated input (Doughty & Pica, 1986; Pica, 1987). One EFL study, of interest to this research, was the 1997 Jarvis and Robinson research into secondary EFL classrooms in Malaysia and how students appropriate language. Their major finding was that although teacher-fronted work may result in positive gains, small group work may be an even better locale for learning (Jarvis and Robinson, 1997, p.221).

In EFL reading research studies in Thailand, Tanawutkatiworakul (1997) studied the English reading through K-W-L Plus with scaffolding technique and the Teacher's Manual. The finding was that English reading performance through K-W-L Plus with scaffolding was better than English reading performance through following the guide in the teacher's manual. Furthermore, Siriratana (2000) and Leabsawasdi (2002) investigated students' English reading comprehension using Top-Level Structure and the teacher's manual. Their finding was that students' English reading comprehension of the students studying through Top-Level-Structure was significantly higher than that of students studying through the system provided in the teacher's manual. While Singprasartporn (2001) studied the students' performance in reading through the instructional activities based on the ideal problem-solving strategy and the teacher's manual. The finding showed that students' performance in reading through the instructional activities based on the ideal problem-solving strategy was significantly higher than that of students studying through the teacher's manual. From all these studies it could be concluded that experimental methods emphasizing key strategies to enable students to extract ideas are more successful in developing the ability to read than more usual methods.
Whole-Language Approach to Teaching Reading

In a framework of the whole-language, Fox (1997) stated that the major factor that helps teachers to be successful in teaching is to relate learning to what students need or want to learn. Riley (1996, p.20) comments that the whole-language approach “is founded on a view of the reading process that is based on assumptions about child-centred instruction, the integration of reading and writing, a rejection of the value of teaching or learning of phonics, and a view that children are naturally programmed for written language acquisition.” It is recognized in whole-language philosophy that language is easier to learn when it is kept whole, as with the ‘top down’ approach (Freeman & Freeman, 1991; Rigg, 1991). Teachers should keep language in its larger communicative context. Rather than focusing on the language itself, teachers create situations where students can use the language for authentic purposes. This idea is similar to that put forward by Naranunn (1997), that teachers are encouraged to teach the target language as a whole, not to break it into small components, and that the principles of whole-language target situations of actual communication. This is because students work in natural communicating groups, where students work together, from “whole to part”. Harris (1996, pp.612-618) supported a whole-language approach, because it results in not only retaining, but also improving on, previous reading comprehension test results. She concluded that authentic reading materials and less direct emphasis on spelling has helped her in gaining acceptance by both students and parents. In order to capture the whole-language nature of reading comprehension instruction, a unitary scale based on three aspects has been adopted in this study in the hope that it will be better than other separate forms of reading scales.

Dixon and Nessel (1983), and Krashen and Terrell (1983), emphasise the importance of real-life situations to stimulate second language learning. Applying their recommendations to reading instruction means emphasising real reading situations in the second language. This would involve the use of audio-visual materials such as television, cassette tapes with texts, choosing materials students themselves want to read, and encouraging students to communicate with native speakers through written materials such as, for instance, letters, short notes, or e-mail. Through such experiences, fear can be eliminated and readers can feel less threatened. When the learners want to use the language, they will use the language by themselves, without threat. When we join this real-life experience principle of learning to second language in reading, teaching will be effective. Moreover, learners want to learn in a comfortable way. Encouragement is needed when learners are successful, and acceptance, when
they are doing the right things, are also requirements of the process. A good way to learn language is practising in a situation derived from the activities, such as activities from television, cassette tape, or picture, and doing the things the students themselves choose. Learners will enhance their communicative skills by using language in communicative situations (Johnson, 1984; Littlewood, 1984; Richards & Rodgers, 2001, p.162).

Watts and Truscott (2000, pp. 258-265) presented recommendations for teaching students of English as a second language in an integrated literacy setting. Their recommendations are based on research into literacy production, the improvement of English language proficiency, and the academic, social and emotional challenges of entering a new culture. They focus on the use of language in meaningful ways through writing and peer discussion groups, and on the regular use of scaffolding in the areas of background knowledge, vocabulary production and communication. It has been suggested that scaffolding in small groups, or peer discussion with the use of a variety of learning activities, can improve a student's understanding of a subject (Nikita, 2003, pp.1-14), because each member of a team is responsible, not only for learning what is taught, but also for helping teammates learn, thus creating an atmosphere of achievement.

As the search for meaning dominates all the approaches to teaching cited in this section, it could be said that these create a link to the central ideas of Communicative Language Teaching and the building of communicative competence in the learner. This leads to the next section where collaborative learning is the focus for the development of socially derived meanings.

**Collaborative Learning**

**The Theory of Collaborative Learning**

Twentieth-century educational theorists and cognitive psychologists have stressed the need for educational processes which enhance achievement by means of active thought rather than passive reception (Bowering, 1999, p.56). Sprinthall (1995, p.102) points to the work of Dewey, Freire, Piaget, Kohlberg and Vygotsky as being responsible for the development of this cognitive-development approach to learning. The whole-class setting does not preclude growth in cognition but the involvement potential for each individual is greater within small groupings.
The use of the small group for developing understanding and skill derives also from political and philosophical roots such as the nature of knowledge as social construction, and the role of participation in the classroom (Matthews, 1993, pp.636-641). Collaborative learning and teaching is similar to the way those who trained their intimates and followers in 5th century BC Greece or 12th century Paris (Dillon, 1994, p. 3).

In the modern era, Slavin (1990b, pp.417-499) argues that two quite separate theories of cognitive development support the use of small group work in education. The first, drawing on the writings of Dewey, Piaget and Vygotsky, suggests that development occurs within an interactive context in which those of similar age and ability assist and encourage one another. Dewey stressed the need for the transfer of democracy and democratic rights from the political arena into the learning community of the classroom (Dillon, 1994, p.3; Sharan & Sharan, 1992, p.4). Piaget (cited in Wadsworth, 1978, p.17) emphasised individual growth through active mental processes. The second argument, in more recent research in cognitive psychology, provides for the effectiveness of small groups. According to this argument, information retention and usage is possible only after cognitive restructuring or elaboration of the material (Wittrock, 1980, p.397). This process is also termed cognitive rehearsal, and is the ability of all in the group to “orally explain, summarize and elaborate the material being learned” (Yager, Johnson & Johnson, 1985, p.65).

Early proponents of small group learning, Shlomo and Sharan (1976, p.4), explained that assistance and encouragement within the group reduced anxiety and led to more effective learning and skill development. Such cooperative learning gains have been described by Johnson and Johnson (1985, p.120) in a variety of learning roles.

In terms of classroom organisation, heterogenous classes are just as effective as homogeneous classes for accomplishing achievement and other cognitive outcomes. In addition, they are more effective for accomplishing affective and social outcomes, such as promoting cultural understandings and social behaviours across racial and ethnic groups, especially if the lessons include a great deal of student-student interaction (Good & Brophy, 2000).

Within collaborative classrooms, students are engaged in a thinking curriculum. Everyone learns from everyone else, and no student is deprived of this opportunity for making contributions and appreciating the contributions of others (Tinzmann et alia, 1990, p.3). Thus, a critical characteristic of collaborative classrooms is that students are not segregated according to supposed ability, achievement, interests, or any other
characteristic. Segregation seriously weakens collaboration and impoverishes the classroom by depriving all students of opportunities to learn from, and with, each other (Bruffee, 1993, p.3). Students unsuccessful in a traditional classroom learn from 'brighter' students, but, more importantly, the so-called 'brighter' students have just as much to learn from their more average peers. Teachers beginning to teach collaboratively are often pleased when they hear the insights of their weaker students (Bruffee, 1993, p.3).

In teaching reading by means of cooperative learning, the teacher can apply suitable activities to stimulate thinking, such as question and answer sessions by peers, and brainstorming in small groups, as described by Stark (2001) and Millis (1996). Edwards and Stout (1990) mentioned that cooperative learning will be useful when students are practising a new concept, when discussion and higher order thinking skills are required, or when small group brainstorming is needed. These considerations can guide the choice of reading activities in the classroom.

There are important areas of education where cooperative learning is accepted as a natural and effective supplement to whole class work. First, the clearest evidence which can be found of its use is in elementary schools throughout the developed world (Husen & Postlethwaite, 1994; Young, 1995, p. 119). The method has also been introduced at secondary and tertiary levels (Slavin, 1989, p. 53), because of its emphasis on the transfer of knowledge leading to retention of both knowledge and skills. Foreign and second language teaching is one such curriculum area. The beneficial effect of cooperative learning on retention and skills is argued by Slavin (1989) to be the main reason for introduction at secondary and tertiary levels. The interactive work that takes place between speakers when some misunderstanding occurs results in interactional modifications hypothesized to aid acquisition (Ellis, 1997b, p. 46). As a consequence, the grade six students introduced to cooperative learning in this study are expected to show better reading proficiency and skills than those who have not. This could lead to better comprehension at the grade six level, in preparation for future secondary and tertiary studies. This is a strong theoretical justification for the current study.

Related research in Thailand

Many research studies have involved collaborative learning in schools. Ratanakornkul (1993) and Watsongnoen (1993) investigated the effects of cooperative learning on mathematics of grade 3 students by measuring achievements of the group members versus the traditional approach. The finding showed that students'
achievement on mathematics through cooperative learning was higher than for those studying through traditional approach. In the secondary level, Jaimboon (1997) and Manenuan (2000) compared the mathematics achievement through cooperative learning activity using the team-games-tournaments and the Thai teacher’s manual. The finding was that the students’ achievement on mathematics through cooperative learning was higher than for those studying through the system in the teacher’s manual. Intaraprasert (1991) made a comparison of the English achievement on listening comprehension of grade 5 students using collaborative learning with whole class learning. The finding showed that the students’ achievement on listening comprehension using group learning is higher than with whole class learning. In a similar way, Chokchoychoo (1994) investigated the effects of cooperative learning on English writing ability about words, sentences and short paragraphs of high-achieving grade 6 students. The finding showed that these students studying writing through cooperative approach produced better written work than those studying through the normal approach. Although these several studies have carried out innovative research in relation to cooperative learning in Thailand, the focus to date has not been upon reading skill development at elementary level.

The Organisation of Cooperative Learning

In defining cooperative learning, Hilke (1990, pp. 33-41) described it as an “organizational structure” in which a group of students pursues academic goals through collaborative efforts. Students work together in small groups, draw on each other’s strengths, and assist each other in completing a task. This method encourages not only supportive relationships, good communication skills, and higher-level thinking abilities but also general cognitive strategies of processing information, such as analysing what information is needed in order to complete the tasks, deciding on procedures, and collecting information (Littlewood, 2000, pp. 1-13). Kagan and McGroarty (1993) suggested that cooperative learning serves both language and content curriculum goals, reporting that comprehension and production of language are both improved through it. In relation to organization, on the other hand, Marr (1997) described cooperative learning as an instructional technique, or grouping structure, in which students are divided into mixed groups to complete instructional activities. All members of the group contribute to the group project which helps them to become capable of working on their own (David, 1991, p. 21). Similarly, Flowers and Ritz (1994) pointed out that cooperative learning is both student-centred and group-centred. Students help each
other learn the subject matter, and they also learn how to be contributing members to a group. Students discuss the task content among group members, thus providing them with knowledge and skills they might not acquire independently. Task-related social skills such as elaborating others' ideas come from interactions, including processing and presenting information and ideas (Littlewood, 2000, p.12). Groups are formed for many reasons, including shared interests (Strickland & Strickland, 1996, p.15), and groups have positive effects on individual achievement and other outcome variables (Johnson, Johnson & Maruyama, 1983; Slavin, 1990b).

The operation of collaborative learning in the primary Thai classroom involves three steps, which are shown in Figure 2.1.

![Cooperative Learning Pyramid](image)

**Figure 2.1** Cooperative Learning Pyramid.

*Source:* Compiled by the author from the literature.

During the first of the three steps, the students will come to agreement about the nature of the task(s) set by the teacher. As cooperative learning tasks are structured in such a way that they involve the sharing of information and ideas, the second thing the students have to do is make collaborative or joint decisions. This may involve simply discussing the materials in order to reach a decision or it may mean that students have to produce a concrete output. The third step involves reporting to others or the sharing of results with the entire class in the form of a presentation display.
To be successful in cooperative group-learning, students and their teachers must have a clearly articulated plan of social interaction, and develop communication skills. Sriraksa (2000) stated that interpersonal skills (working with others) is one of the competencies needed in American society and this can be taught in schools. Two of the needed behaviours of people in the millennium are interpersonal skills and being responsible in their roles as group members (Cogan, 1997; Phosritong, 1999, p.12). One way of making cooperative learning in groups effective is to have students make their own rules that they all accept and use to control the group. The roles could be used to make a Values Charter (Brown, 1999, p. 25), such as the one in Figure 2.2.

```
be on time

don’t copy someone’s work

don’t be selfish

accept others’ ideas

be honest

give your own ideas

let everyone talk

help each other

Figure 2.2 Brown’s Values Charter

Source: Adapted from Brown (1999, p.25) by the author.
```

It has been suggested that too many rules in a ‘Values Charter’ may impede students’ critical thinking and their working (Weibel, 1999). For example, students cannot use their full ability because the awareness of too many rules may make them hesitate in doing activities.

Having students select their roles for the group and the rotating group roles, depending on the activity, may help to develop the skills of critical thinking ability and helping each other, and enrich the knowledge of students (Wheeler, 1990; Millis, 1996).
For example, a roundtable activity where student teams of 4-5 add ideas to a rotating paper task, provides a structured brainstorming technique.

Krashen (1993) and Palincsar, Brown and Campione (1993) relate details that support a cooperative learning approach in interactive language teaching. Whittaker (1996) indicated that interactive language teaching can help to achieve four goals of cooperative learning, such as encouraging academic cooperation among students, developing positive group relationships, developing students’ self-esteem, and enhancing academic achievement.

The teacher’s role includes at least six major organising aspects, in a successful cooperative learning class (Johnson, Johnson, Holubec & Roy, 1986). These are clearly specifying the objectives for the lesson, making certain decisions about placing students in learning groups before the lesson is taught, explaining the task and goal structure to the students, monitoring the effectiveness of the cooperative learning groups, intervening to provide task assistance or to increase students’ interpersonal and group skills, and evaluating the students’ achievements and helping students discuss how well they collaborated with each other.

Wheeler (1990) and Millis (1996) presented a way to manage the role of cooperative learning in three ‘managing’ principles. The first principle about management relates to group size, reading ability and student roles. Groups of 3-5 students should be mixed in terms of reading ability and gender. Roles and role changes in student groups need to be shown on a role chart that is fixed on the wall to tell the students for which role they are responsible. Students in each group should know the importance of five roles. These are described in Table 2.1 (Wheeler, 1990; Millis, 1996).
Table 2.1
Roles and Activities in cooperative groups

<table>
<thead>
<tr>
<th>ROLE</th>
<th>ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Facilitator</td>
<td>A facilitator is responsible for keeping the group on the assigned task and making sure that all members of the group have an opportunity to participate, learn and respect their team members.</td>
</tr>
<tr>
<td>2. Recorder</td>
<td>A recorder is responsible for searching and maintaining the group information and keeping records of all group activities. The recorder writes out the solutions to problems for the group to use as notes, or to submit to the instructor.</td>
</tr>
<tr>
<td>3. Timer</td>
<td>A timer is responsible for making sure that the group’s work area is left the way it was found and acts as a timekeeper for activities.</td>
</tr>
<tr>
<td>4. Materials manager</td>
<td>A materials manager is responsible for getting the material from the teacher and giving it to the group.</td>
</tr>
<tr>
<td>5. Encourager</td>
<td>An encourager is responsible for acting as an assistant to the facilitator as group leader, and assumes the role of any member that may be missing.</td>
</tr>
</tbody>
</table>

Source: Adapted by the author from Wheeler (1990) and Millis (1996).

Where students exercise particular roles, such as have been described, the theory is that these sorts of groups, called ‘cooperative groups’, produce greater amounts of sharing than ‘traditional groups’, where roles are not assigned. The major differences between these two groups, as revealed by research in primary schools, are shown in Table 2.2.
Table 2.2
A Comparison of Traditional and Cooperative Learning Groups.

<table>
<thead>
<tr>
<th>Traditional Groups</th>
<th>Cooperative Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low interdependence. Members take responsibility only for self. Focus is on individual performance only.</td>
<td>High positive interdependence. Members are responsible for own and each other's learning. Focus is on joint performance.</td>
</tr>
<tr>
<td>Individual accountability only.</td>
<td>Both group and individual accountability. Members hold self and others accountable for high quality work.</td>
</tr>
<tr>
<td>Assignments are discussed with little commitment to each other's learning.</td>
<td>Members promote each other's success, doing real work together, helping and supporting each other's efforts to learn.</td>
</tr>
<tr>
<td>Teamwork skills are ignored. Leader is elected to direct members' participation.</td>
<td>Teamwork skills are emphasised. Members are taught and expected to use social skills. Leadership shared by all members.</td>
</tr>
<tr>
<td>No group processing of the quality of work. Individual accomplishments are rewarded.</td>
<td>The group monitors quality of work and how effectively members are working together. Continuous improvement is emphasized.</td>
</tr>
</tbody>
</table>

Source: Johnson, Johnson, and Holubec (1993, pp. 4-5).

The second basic principle relating to cooperative management in the classroom concerns the role of the teacher. The teacher observes students, acts as a facilitator during their ‘doing’ activities and gives suggestions when the students have problems (Wheeler, 1990; Millis, 1996). Encouragement and praise should be given when the students are successful.

The third and final principle relates to the evaluation of students’ work. Teachers can evaluate the students’ work by letting their students present their work, by testing them, by observing students’ work in a groups, and by listening to the students’ ideas given during the group discussions. Teachers can let students select their roles for the group and the rotation of group roles may help to develop the skills of critical thinking ability, and enrich the knowledge of students (Wheeler, 1990; Millis, 1996).

Marzano (1992) suggests that tasks such as inquiry, problem-solving and decision-making are probably done more efficiently by cooperative groups than individuals, as these tasks are usually taken in terms of the knowledge and ability which each individual may have in the group. Moreover, his work concerns the basic types of
thinking that occur during effective learning. His model of instruction is based upon the interaction of five dimensions of learning. The first dimension of learning is attitudes and perceptions that create a positive classroom climate; the second is acquiring and integrating knowledge; the third is extending and refining knowledge; the fourth is making meaningful use of knowledge; and the fifth is developing favorable habits of mind. This supports the learning of ESL through cooperative learning methods.

Studies on Cooperative Learning

In traditional teacher-directed group-work, assignments are so structured that very little (if any) joint work is required. Members do not take responsibility for anyone's learning, other than their own. Interdependence is low. Students are accountable as separate individuals, not as members of a team. Students do not receive training in social skills. There is no assessing of the quality of the group’s efforts. In traditional classroom learning groups (see Table 2.2), students accept that they are to work together, but often see little benefit from doing so. Members come together at first to share information and clarify how the assignments are to be done. They then each do the work on their own. Students are accountable as separate individuals, not as members of a team. Students do not receive training in social skills. Although a group leader may be appointed who is in charge of directing members’ participation, there is no processing of the quality of the group’s efforts.

A cooperative learning group by contrast is one whose members are committed to the common purpose of maximizing each other’s learning. First, the group goal of maximizing the learning provides a purpose that motivates members and helps them to accomplish the work beyond their individual achievements. Each member takes responsibility for a set role. Second, in a cooperative group, the focus is both on group and individual accountability. Third, group members do ‘real’ work together. Fourth, members are expected to have social skills and to use them, to coordinate the efforts and their goals from task work and teamwork. Fifth, groups analyse how effectively they are achieving their goals and how well members are working together.

Cooperative learning techniques provide daily opportunities for children from different backgrounds to engage in meaningful interpersonal interaction and require them to get to know one another as individuals. Research indicates that successful learning also involves an interaction between the learner, the materials, the teacher, and the context (Tinzmann, Jones, Fennimore, Baker, Fine & Pierce, 1990). Such studies have shown that through cooperative learning students have improved in the areas of
achievement, positive attitude towards subject area, and critical thinking skills (Zisk, 1996). Moreover, research suggests that cooperative learning may lead to gains in thinking skills (Johnson & Johnson, 1990a; Johnson, & Johnson, 1990b) and achievement (Good & Brophy, 2000, p. 312). It encourages supportive relationships, good communication skills, and higher-level thinking abilities (Hilke, 1990). There are four key points in thinking strategies (Cohen, 1994). First is problem solving by using basic thinking processes to solve a known or defined difficulty. Second is decision making by using basic thinking processes to choose a best response among several options. Third is critical thinking by using basic thinking processes to analyze arguments and generate insights into particular meanings and interpretations. Fourth is creative thinking by using basic thinking processes to develop or invent novel, aesthetic, constructive ideas, or products, related to precepts as well as concepts, and stressing the intuitive aspects of thinking as much as the rational.

Olsen and Kagan (1992) defined cooperative learning in reading as a group learning activity organized so that learning is dependent on the socially structured exchange of information which affects learners in groups (Bennett & Cass, 1998; Peterson et al., 1984; Swing & Peterson, 1982; Webb, 1982; Webb & Palincsar, 1996) and in which each learner is motivated to increase the learning of others, because there is an interaction among them that benefits learners in the second language classroom (Holt, 1993; Kessler, 1992; Oxford, 1997). Moreover, Huber, Sorrentino, Davidson and Epplier (1992) point out that students and trainee teachers showed a preference for cooperative learning over traditional expository learning. Students and trainee teachers were more negative, and performed worse in traditional learning modes than in cooperative learning. At the same time, as a counter-example, Li and Adamson (1992) pointed out that gifted secondary students tended to like individualistic learning or competitive learning better than cooperative learning, and the latter was not significantly related to higher achievement. Thus, it is necessary to further study these questions, especially in the Thai context, where both cooperative and competitive behaviour can be found, for both performance and attitude.

Slavin (1991) cited forty-four experimental/control studies, of four or more weeks' duration, concerning cooperative learning approaches which use group goals and individual accountability and traditional approaches to teaching. Out of forty-four studies, thirty-seven showed significantly positive achievement effects for cooperative learning, while none favor traditional approaches. Because of the linking of group goals, rewards and individual accountability, this encourages group members to explain
their work to one another, so the whole group benefits. Moreover, he mentioned a review of ninety-nine studies of cooperative learning in elementary and secondary schools that involved durations of at least four weeks, comparing achievement gains of cooperative learning and a control group. Of sixty-four studies of cooperative learning methods that provided group rewards based on the sum of group members’ individual learning, fifty (78 percent) found significantly positive effects on achievement, and none found negative effects (Slavin, 1995). Further, cooperative learning is not only a subject of research and theory; it is used at some level by millions of teachers (Slavin, 1995). A recent national survey (Puma, Jones, Rock, & Fernandez, 1993) found that seventy-nine percent of elementary teachers and sixty-two percent of middle school teachers in Canada reported making some sustained use of cooperative learning. However, it should be pointed out that no studies used Rasch created linear scales to measure attitude or behaviour and, where a control and experimental group were used, there were always at least one extraneous variable that was not well controlled (Bond, 2001).

Cooperative learning brings social benefits as well. These have been defined as “better relationships among students, higher levels of self-esteem, acceptance of mainstreamed students, enhanced communication skills, growth in ability to work cooperatively, greater cooperation among students from different ethnic backgrounds, and improved attitudes towards school” (Maltby, Gage & Berliner, 1995, p.415).

This, however still leaves open the question as to whether cooperative learning applied to reading instruction of English in Thailand will work or not. Intalaprasert (1991) studied achievement in listening comprehension of grade 5 English students in Thailand using group learning. The study revealed that the achievement of listening comprehension by students engaged in group work was higher than for those being taught in teacher-directed classes. Both small group discussion and classroom discussion were allowed before listening comprehension was tested. In addition, Chokchoychoo (1994), Rattanakornkul (1993) and Whatsongnorn (1993) studied the effect of cooperative learning compared to the use of the Thai traditional approach, on English writing ability of grade 6 students, on mathematics achievement of grade 3 students and in mathematics problem solving of grade 5 students. These researchers found that students studying through the cooperative learning approach achieved higher performance than the students studying through a traditional approach.
All of these studies have revealed that activities in cooperative learning which stress thinking abilities, mutual assistance, and problem solving lead to higher achievement (Chokchoychoo, 1994; Intalaprasert, 1991).

Research about attitude and behaviour towards cooperative learning

Johnson and Johnson (1990a), and Jayne (1993), found that attitudinal factors were involved in children's success in working together. This led Ewing and Kennedy (1996) to investigate the effects of cooperative experiences on children's attitudes and linguistic skills development. A Culture-Free Self Esteem Inventory (Battle, 1981), an open-ended assessment of each child, and a set of twenty-one questions, focusing on each child's view, were used as the instruments to compare 11 year-old primary children in seven classes. Such an inventory gave scores for General, Social, Academic, and Parental self-esteem. The self-esteem score was used to assess each child in an experiment which was intended to show any changes that the experience of working together co-operatively caused. The results showed that gains were to be had from cooperative learning in specific language skills, self-esteem, maturity, personal relationships, and social skills and awareness. It was also shown that these gains can be put to good effect, through sharing the skills with peers in the classroom.

Blosser (1992) investigated the effect of cooperative work on student attitudes towards the science laboratory. Ninth grade biology students in two schools in America participated in the study. Attitudes to chemistry were measured using the Attitude Toward Laboratory Work Scale. The scale was administered as both a pretest and a posttest. Posttest results indicated that students in the experimental treatment (cooperative work) held significantly more favorable attitudes toward laboratory work than students did in the control group. The attitudes of male students were more favourable than those of females in the experimental group, but, regardless of sex, attitudes of students in the experimental group were still more positive than those of control group students.

There is a lot of evidence that good attitudes are related to good classroom behaviour and high academic achievement, and vice versa. For example, in a review, Slavin (1995) found that students with positive attitudes, high motivation, and good self-concept, displayed high academic achievement, generally. Boekaerts and Simons (1992) found that attitudes towards school subjects have a positive and important relationship with achievement in many academic subjects at school.
On the relationship between the development of academic self-concept and the learning achievements of students at the primary education level in America, Helmke (1989) found that the concept of one's own skill (in arithmetic) does not appear until after pupils have been confronted with their (arithmetical) achievements in their first years of school. This finding suggests that attitudes are also influenced by achievements rather than only the other way around. At the same time, the relationship between attitudes and achievements appears to become stronger over the years of primary schools. However, Knuver and Brandsma (1993) observed that the relationship between language attitudes and language achievements in Bolivia was weaker halfway through primary school than at its end. In the latter study, language achievements proved to have stronger effects on language attitudes than the reverse. In particular, the strength of the relationship between affective characteristics and achievements seems to depend on the instruction. Moreover, Kuhlemeier, Van den Berge and Melse (1996) studied the relationship between students' attitudes toward the subject of German, the course material, the teacher, and students' achievements in German as a foreign language. Attitudes and achievements were measured at the beginning and end of the first year of German (the second year of Dutch secondary schools). It was found that students who had a positive attitude rated higher in achievement than those having negative attitudes, both at the beginning and at the end of the school year. Direct effects of students' attitudes on achievement (and the converse) could not be established. Students enrolled in a communication course had a more positive attitude toward their course material than those studying in a grammar-based course.

In regard to the construction of knowledge, the social context in cooperative learning, according to Dornyei (1994), creates positive attitudes to learning in groups, to motivate second language learning in six ways (which are quoted or closely paraphrased from Dornyei, 1994, p.282). One, it increases "the group's goal-orientedness by starting discussions with students about the group goal(s), and asking them from time-to-time to evaluate the extent to which they are accessing their goal". Two, it promotes "the internalization of classroom norms by establishing the norms clearly right from the start, explaining their importance and how they improve learning, asking for the students' agreement, and even involving students in creating norms". Three, it helps "maintain internalized classroom norms by observing them consistently yourself, and not letting any deviations go unnoticed". Four, it "minimizes the prejudicial effect of evaluation on intrinsic motivation by focusing on individual improvement and progress, avoiding any explicit or implicit comparison of students to each other, making
evaluation private rather than public, not encouraging student competition, and making the final course grading the product of two-way negotiation with the students, by asking them to express their opinion of their achievement in a personal interview”. Five, it “promotes the development of group cohesion and increases inter-member relations by creating classroom situations in which students can get to know each other and share honest personal information (about such things as feelings, fears, and desires) through outings and extracurricular activities, and game-like inter-group competition in the course.” Six, it “uses cooperative learning techniques by frequently including group work in the classes in which the group’s, rather than the individual’s achievement, is evaluated.” (Dornyei, 1994, P.282).

Ajzen (1991) focused on behavioural intentions, which comprise indications of how hard someone is willing to try to do something and what effort they are willing to put into the behaviour, when translated into action. Ajzen believes that attitudes, subjective norms, and behavioural control are influenced by beliefs. Behavioural beliefs, according to Ajzen, determine attitudes which consist of an individual’s view of the likely consequences, or outcome of an action, together with a positive or negative evaluation of those outcomes. If applied to cooperative learning in the ESL classroom, this implies that attitude influences learning behaviour and ESL achievement.

![Figure 2.3 Ajzen's model](source: Ajzen (1991, p. 354))

In the cooperative learning reading classroom, the interactions during activity in groups between students and between teacher and students are high (Neubauer, 2001; Staley, 2001), and social skills and positive attitude show improvement (Staley, 2001). The reason is that during cooperative learning, the students have time to process, discuss, react and construct their own personal knowledge about reading text. In classroom practice, Kennedy and Kennedy (1996) mention that attitudes often determine how or whether changes will take place or will not take place. An attitude change between students, and between teacher and students in classroom practice, is a necessary but not a sufficient condition for improved learning.
End comment

The literature review has revealed that while most studies have shown cooperative learning to be superior to traditional learning (direct teacher instruction) in primary schools in Western countries, there is little research on cooperative learning in Thailand. Research is particularly needed where a new system-wide educational change, in which every student is required to learn English, has recently been introduced. Most students in Thailand do not have an adequate understanding of English, and they do not have the necessary English skills. There are no studies in Thailand using primary students and measuring attitude, behaviour and reading comprehension, as a result of cooperative learning methods, with experimental and control groups. The present study aims to partially fill this gap in evidence.

The next chapter discusses the model and theoretical framework.
CHAPTER THREE

MODEL AND THEORETICAL FRAMEWORK

This chapter begins with the model of learning English as a Second Language which informs and supports this study. The idea is to try to explain how second language students learn to read in English. This is followed by the expected role of cooperative learning and the links between attitude and behaviour in explaining how students learn ESL. Finally, the hypotheses to be tested in this research are stated.

How students learn ESL

Model of ESL Reading

The global view of ESL reading which supports this research is based on the importance of real life situations to stimulate second language learning (Dixon & Nessell, 1983; Krashen & Terrell, 1983). One basic assumption of this research is that suitable activities to stimulate thinking and interaction involve peers working in small groups (Stark, 2001; Millis, 1996). The other assumption supporting this research is that students need to be given responsibility in undertaking the task of learning. If they are given set roles, they will develop the skills of critical thinking ability, helping each other, and improving their knowledge (Wheeler, 1990; Millis, 1996). The use of a variety of learning activities in small group discussion provides scaffolding to the students to understand the subject they learn (Nikita, 2003, p.2-9). It is recommended that English reading comprehension should be based on three aspects: cooperative learning, tasks and activities, and roles.

The lesson plans for the experimental group used in this study were constructed to involve students in meaningful activities that emphasized tasks, activities, and roles. Emphasizing group roles can create participation and responsibility leading to discussion (Robert, 2000) and interactive behaviour, which is especially valuable in Thailand where Thai students are considered to be audio-kinetic, rather than visual, in terms of cognition. Thus cooperative learning (pair work and group work) may actually be assisted by activities involving visual/cognitive skills (Stark, 2001).

There has been a great deal of theory and research into learning and cognition. One of the important theories 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 the teacher to take account of individual differences when structuring learning experiences for students (McInerney & McInerney, 1994, p.99). During their engagement on activities with friends, students learn to interact, share ideas and experiences, solve problems and become interdependent with other students (McInerney, 1994, p.99). At the same time, Dixon and Nessel (1983) and Krashen and Terrell (1983) described a good way to learn language in second language acquisition when students practice language in situations derived from group activities, such as discussion of pictures and doing things the students themselves choose. Students seem to be able concentrate better on the classwork when they interact with other students than when a teacher talks most of the time. When they assume some responsibility for their learning, they seem to be better able to focus their attention. Ellis (1997a, p.248) mentioned models of activities that students prefer because 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, pp.440-464). The texts chosen for the students should not be too easy or too difficult for them to understand. This discussion leads to the conceptual method of the present study in Figure 3.1 below.

![Figure 3.1 A Conceptual Model of Second Language Acquisition (SLA).](image)

Source: created by the author from the literature review.
The conceptual model of learning ESL in the present study was based on Second Language Acquisition theory, cooperative learning and reading theory. The tasks in the reading texts, including vocabulary, were selected from everyday life that could actually happen and were not too difficult for students, taking into account their age and reading level. The activities in task-work make students interact with each other. When peer interaction occurs, the tasks provide knowledge and skills by the sharing of ideas and outcomes. In this way, teachers group together classmates whose abilities are moderately discrepant from one another, so that peers can teach and help one another (McInerney & McInerney, 1994, p.104).

This proposed model of learning ESL was directly linked to the content or texts taught, the way it was taught, and the measurement of achievement. In all the reading lessons, task work, activities, and group responsibility are used by the students to support each other and to help in the learning process. The six reading texts (see Table 3.1 and Appendix A) 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 Sicknesses) (see Table 3.1). The reading texts, aims, and language structure (see Table 3.1), including the exercises, are 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 / 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 surface difference between the lesson plans for the experimental group (cooperative teaching) and the control group (Thai communicative teaching) are the steps of teaching. There are five steps of teaching in the experimental group while there are three steps (3P) of teaching in the control group. However these are organisational descriptions and the real difference between the two methods lies in the greater importance which group work and its results assumes in relation to the cooperative groups. The allocation and rotation of roles, as well as the greater significance of group as distinct from individual completion of exercises are both intended to increase learner engagement and responsibility for learning. This in turn, it is hoped, leads to improved reading skill and motivation. Although it is recognized that both groups will have
opportunities to learn, this research is testing whether the handing over of greater responsibility from the teacher to the learner is of value in bettering performance.

Table 3.1
Summary of Reading Lessons.

<table>
<thead>
<tr>
<th>Lessons</th>
<th>Reading Texts</th>
<th>Aim</th>
<th>Language Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>Pim’s family and their occupations</td>
<td>Comprehend a description about a family and their occupations. - Understanding the main facts.</td>
<td>Possessive apostrophe</td>
</tr>
<tr>
<td>3-5</td>
<td>Personal feelings</td>
<td>Comprehend statements about personal feelings. - Understanding the meaning from pictures.</td>
<td>Verb Patterns (subject + verb intransitive + adj, n, pronoun)</td>
</tr>
<tr>
<td>6-8</td>
<td>Potato Cakes</td>
<td>Understand a recipe. - Understanding the meaning using pictures. - Sequencing the order of idea.</td>
<td>Verb Patterns (verb transitive + direct object)</td>
</tr>
<tr>
<td>9-11</td>
<td>The Special Bird.</td>
<td>Comprehend a description of an animal. - Understanding the main facts.</td>
<td>Adjective describing the features</td>
</tr>
<tr>
<td>12-14</td>
<td>Sickness</td>
<td>Comprehend statements about sickness. - Understanding the meaning from pictures.</td>
<td>Verb Patterns (has got + a, an + sickness)</td>
</tr>
<tr>
<td>15-16</td>
<td>The Floating Market</td>
<td>Comprehend a description about a place - Understanding the main fact.</td>
<td>Past Tense</td>
</tr>
</tbody>
</table>

Source: Devised by the author for this study.

In the reading lessons, task work, activities and roles are used by the students to support each other, and to help in the learning process. At the same time, the test items are used to measure the students’ understanding after their learning process, based on cooperative learning tasks (see Figure 3.2).
In understanding the main facts, an English reading passage, “Pim’s family and their occupations (see Figure 3.2) was taught for reading comprehension. Students try to get the main idea of the story by sharing their ideas in their own group. In this way, there is an interaction among them. The roles in groups of four (prepare stationery, suggest and stimulate members, taking note and present, and warn of the time) help the students to have the responsibility on their own, support each other in sharing their ideas. This helps the students feel at easy to do the work because the smart one can help the weak one.

In sequencing the order of ideas, for instance “Potato Cake” which is about the step of cooking, including understanding the meaning using pictures. Students have to order the pictures given into the steps of making potato cake for group work (exercise 1 in lessons 6-8) and, in another exercise, include filling in the blanks for making apple cake for individual work.

“Sicknesses” is one of the examples of understanding the meaning from pictures. Students have to comprehend a description about the sicknesses and how to remedy them. The activities used in these lessons is group work (exercise 1 in lessons 12-14) and exercise 2 for individual.

Figure 3.2 A model of English reading comprehension development.
Source : constructed by the author based on the literature review.
Reading comprehension develops from the influences of all three aspects, the tasks, the activities and the roles. The cooperative learning tasks were designed to increase student ability in comprehending texts through understanding the main idea, sequencing the order and increasing understanding using pictures. The skill in understanding the main idea in an English reading passage, “The Floating Markets” was expected of students (see Table 3.1 and Appendix A).

Organisation of cooperative learning

In cooperative learning, the rotating group role (Wheeler, 1990; Millis, 1996) in doing the activity supports students in being responsible for their own learning. There are five steps in the experimental lesson plan. First, the teacher explains the objective to see if the students understand what they have to learn. Then, students are divided into heterogeneous groups of four. In the third step, involving interaction among the group members, students discuss the task about “Pim’s Family and their occupation”, for example, among members based on the rotating group role (see Table 3.1 and the example of the lesson plan). In this way, the more advanced students can help the weak ones. The group members will help each other to do exercise 1 (see lesson plans 1-2 in Appendix A) by completing the diagram with the names of “Pim’s family members and their occupations”. After finishing the exercise, students have the responsibility of presenting their work in class. In this way, task-related social skills, such as elaborating others’ ideas, come from the interaction, including the processing and presenting of information.

The four roles of a cooperative learning group were based on those referred to in Wheeler (1990) and Millis (1996), adapted to suit the students in Thailand. These roles are preparing stationery, suggesting ideas and stimulating discussion, taking notes and presenting, and warning of the time allocation. Cooperative learning tasks aim to develop not only communication skills, but also general cognitive strategies of processing information, such as analysing what information is needed, in order to complete the worksheet or exercise, deciding on procedures, and collecting information. It is expected that students using cooperative learning will improve in reading comprehension, and in their attitudes and behaviours, because they are taking responsibility for their own learning to a larger extent than in traditional teaching.
Expected links between attitude and behaviour

It is theorised that the cooperative learning process, based on English reading comprehension development that consists of cooperative learning tasks, activities, and roles, helps students to learn ESL. These tasks lead to checking the understanding of the main ideas, sequencing the order, and understanding the meaning using pictures. Activities engaged in during pair work, group work, and interaction used in the learning process are important because they help the students to develop higher-level thinking skills. The four roles are important in cooperative learning because students in the group develop the skills of critical thinking ability, helping each other, and enriching the knowledge of students during studying activities and tasks. These activities also help students to improve in attitudes and behaviour towards their English studies. After getting the answers from brainstorming during the exercise, students present the answers to the class, which enriches them, so that they become more self-confident. The students know the answers presented come from friends during brainstorming within their groups.

Hypotheses

Three main hypotheses are tested in this study. One is that students achieve better in English (as a Second Language) reading comprehension in the cooperative learning class than in the Thai communicative learning class. The second is that students show better attitudes to English reading comprehension in the cooperative learning class than in the Thai communicative learning class. The third is that students develop better behaviours to English reading comprehension in the cooperative learning class than in the Thai communicative learning class.

The next chapter describes the measurement procedure, including the variables and instruments used in this study.
CHAPTER FOUR

MEASUREMENT: READING COMPREHENSION, AND ATTITUDES AND BEHAVIOUR

This chapter begins with an introduction to what is required to make a linear measure of variables in education and educational psychology, and with the main problems of True Score Theory. Rasch measurement is then explained. The two variables to be measured in this study, reading comprehension, and attitude and behaviour to learning ESL, are explained, including their design and conceptualisation.

Measurement

Introduction

There are four main requirements for interval-level measures of variables in educational achievement and educational psychology (see Wright, 1999). One, measures must be linear with person measures ordered from low to high and item difficulties ordered from easy to hard, all calibrated on the same scale. Two, person measures must be calibrated test-free. This means that the probability of answering an item ‘correctly’ must depend only on the difference between the measure and the item difficulty. Three, item difficulties must be calibrated sample-free. Four, persons must be able to be measured on parts of the scale targeted at their abilities so that other parts of the scale do not affect their measure. The only known way to do this in education is through the use of Rasch measurement (Rasch, 1980/1960). However, before Rasch measurement is explained, problems with measures using True Score Theory are discussed.

Problems with True Score Measurement Theory

There are at least five problems with current variable measures that should be emphasised. Very few attitude and behaviour measures have been based on a multi-aspect model in which the items are conceptually ordered from easy to hard and influenced conceptually by a single trait. Many measures use a Likert scale with data analysed with True Score Test Theory.
One, the response categories of Strongly Disagree, Disagree, Agree and Strongly
agree are not ordered from low to high, as there is a discontinuity between Disagree and
Agree. If a neutral category is used, this further exacerbates the construction of a linear
measure because it attracts answers like don’t know, undecided, don’t want to answer
and neutral, which themselves are not part of an ordered structure. For this reason, it is
argued that the Likert response format often does not provide a proper basis for the
construction of a linear measure.

Two, the item difficulties are not calibrated on the same scale as the person
measures and it is not determined whether students agree on the difficulties of the items
along the scale. There is a need to test whether students agree on the item ‘difficulties’. In
a proper linear scale, students with high, medium and low measures will agree that
certain items are easy and that others are hard. For example, persons with low measures
are likely only to answer the easy items positively. Persons with medium level
measures are likely only to answer the easy and medium difficulty items (and not the
hard items). Persons with high measures will be likely to answer the easy, medium and
hard items.

Three, the item ‘difficulties’ are not tested for conceptual order. That is, in True
Score Theory, the theoretical ordering of the item difficulties is not tested with real data
to create a linear scale.

Four, the item ‘difficulties’ (from easy to hard) and the person measures (from
low to high) are not calibrated on the same interval-level scale. This is a fundamental
necessity in the creation of a proper linear scale.

Five, the data for many measures do not show high reliability and construct
validity. The literature contains many measures of attitudes and behaviours in
classrooms where reliabilities are 0.7 or less, and where construct validities have not
been adequately tested (see Ajzen, 1991; and stated in Waugh, 2002).

Rasch measurement and the RUMM computer program

The intent of this study was to measure two variables, (1) reading
comprehension of English and (2) attitude and behaviour towards cooperative learning
of ESL, on interval-level scales. One way to do this was to calibrate all the item
difficulties and all the persons scores on the same scale using a Rasch measurement
model (Andrich, 1988a; 1988b; Rasch, 1980/1960), with the computer program Rasch

Use of this Rasch measurement program ensures that only items that contribute logically and consistently to the measurement of attitude and behaviour, and the reading comprehension test, are included in the scale. Any items that do not fit on the scales in a consistent pattern with the other items are rejected. The most likely reason for an item to be rejected at this stage is that it is not consistently measuring the variable attitude and behaviour towards cooperative learning or the reading comprehension of English. The RUMM 2010 computer program tests the alignment of items that fit the model from 'easy' to 'hard', and calibrates the reading comprehension test measures, and the attitude and behaviour measures from low to high. These measures of reading comprehension, and the attitude and behaviour, are calibrated on the same scale as the item difficulties (for each scale as required for the two separate measures).

The RUMM 2010 program estimates threshold parameters to create an ordered threshold structure, in line with the ordered response categories of the itcms. Within a four category response set (as in the present attitude and behaviour measures), there are three thresholds, or boundaries, and it is necessary for these to be aligned with the order of the response categories, if there is to be satisfactory discrimination or differentiation between ability measures. In the present study, ability measures are the students' attitude and behaviour scores and, at a threshold between two response categories, there are odds of 1 : 1 of answering in either category.

Parameter estimates are substituted back into the model and the RUMM 2010 program examines the difference between the expected values predicted from the model and the observes values, using two tests of fit. The first is the item-trait test-of-fit (a chi-square) which examines the consistency of the item parameters across the students with differing measures along the scale (see Andrich & van Schoubroeck, 1989, p.479-480 for the equations). Essentially, a consensus is obtained for all item difficulties across students with differing measures along the scale. If students cannot agree on the difficulty of an item, then the item is discarded.

The second test-of-fit is the person-item interaction which examines the response patterns for students across items and for items across students. The residuals between the expected estimate and the actual values for each student-item are summed over all items for each students, and over all students for each item (see Andrich & van Schoubroeck, 1989, p.482, for the equations). When the data fit the measurement model, the fit statistics approximate a distribution with a mean near zero and a standard
deviation near one. Negative values indicate a response pattern that fits the model too closely, probably because response dependencies are present (see Andrich, 1985).

\[
\begin{array}{ccc}
\text{low} & \text{medium} & \text{high} \\
\text{Person measure} \\
\hline \\
\text{easy} & \text{medium} & \text{hard} \\
\end{array}
\]

Figure 4.1. Scale of item difficulties with person measures (idealised).

In summary, we want a scale where persons with high measures are likely to be able to answer the high, medium, and difficult items, positively. Persons with medium measures are likely only to be able to answer the medium difficulty and easy items positively. Persons with low measures are likely only to answer the easy items positively. They are unlikely to be able to answer the medium and hard items positively.

The Reading Comprehension Test

The final reading comprehension test consisted of three sections, understanding the main facts, sequencing the order of ideas, and understanding the meaning from English reading tasks using pictures. Section 1 contains 13 questions, section 2 contains 10 questions, and section 3 contains 9 questions. The final test questions are ordered by difficulty conceptually. For example, it is expected that students will find item 1 very easy, item 2 harder than item 1, and item 3 harder then item 2. The reason is that a picture is provided for item 1, but not for item 2. The picture helps students to see the answer more easily for item 1. Item 3 uses four pictures that have to be ordered in sequence to make an apple pie and this is harder conceptually than answering item 2, where only one aspect is requested. All the other items are similarly ordered by difficulty. While they are not reported here to avoid repetition, Appendix E will assist the reader. A sample is provided below and the full test is provided in Appendix D (initial 60 items) and Appendix E (final 32 items).
Item 1 Fill in the missing words in the sentence under each of the pictures below by choosing them from the following list.

1. He has got ..................

(A) a headache  (B) a cold  (C) a stomach ache  (D) a bad cough

Item 2. Read “In the Mirror” and answer item 2.

In the Mirror

In the mirror
On the wall
There's a face
I always see;
Round and pink,
And rather small,
Looking back again
At me.

It is very
Rude to stare,
But she never
Thinks of that,
For her eyes are
Always there
What can she be
Looking at?

item 2. Which of the following is the title of this poem?
(A) “Elizabeth Fleming”
(B) “On the wall”
(C) “Looking back again”
(D) “In the Mirror”
Item 3. Find the picture which matches the sentence for step 4.

HOW TO MAKE AN APPLE CAKE

Step 4  Put the mashed apples, the flour and the butter into a bowl and mix them with a fork.

(A)  (B)  (C)  (D)

Pilot testing of the reading test

After trialling the students' attitude and behaviour questionnaire, the 60 item comprehension test was trialled with the same 15 grade six students. The time taken to complete the 60 reading comprehension test items was about 1.30 hours. It was found that the instructions and the response formats were clear. There were no changes needed with the wording. There was no problem with the items in the test, except some words were difficult. Some difficult items are needed because students will be expected to improve their reading comprehension as a result of teaching in a cooperative learning program.

Attitude and Behaviour Measurement

Questionnaire

A questionnaire was designed and trialled especially for this study to measure attitude and behaviour towards learning ESL. It was based on two aspects: (1) teaching and learning activities, and (2) classroom interaction. Teaching and learning activities were defined by tasks for group work, tasks for meaning and tasks for reading comprehension. There are six stem-items measuring tasks for group work, two stem-items measuring tasks for meaning, and four stem-items measuring tasks for reading
comprehension. Classroom interaction was defined by student/teacher relationships and student/student relationships. There are three stem-items measuring student/student relationships and five stem-items measuring student/teacher relationships. The questions are grouped under subheadings and they are arranged according to an order of increasing difficulty.

The items were grouped under their corresponding headings so it would be clear to the students what was being measured and all the items were written in a positive sense with an ordered response format: always or nearly always was scored 4; sometimes was scored 3; mostly not was scored 2; and never or rarely was scored 1. All the stem-items on the questionnaire were answered in two perspectives. One was *This is what ideally should happen* (to measure the attitude or expectation aspect) and the other *This is what really happens* (to measure the behavioural aspect). Thus, there were 20 stem-items answered in two perspectives making an effective item sample of 40. All items were written in Thai. An English translation is provided in Appendix C2. The English teacher version (Appendix C4) was used with the trainee teachers as part of the qualitative data collection process for the group discussions.

The questionnaire

Instruction: Please rate the 40 statements according to the following response format and check ✓ the column corresponding to your attitude (prior to studying) and your behaviour (during study) on the appropriate line opposite each statement:

- Always or nearly always: put ✓ on column 4
- Sometimes: put ✓ on column 3
- Mostly not: put ✓ on column 2
- Never or rarely: put ✓ on column 1

Example

Subgroup: Teaching / Learning Activities

<table>
<thead>
<tr>
<th>Questionnaire item</th>
<th>This is what ideally should happen</th>
<th>This is what really happens</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I like to do activities in groups.</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Check ✓ on the questionnaire item, if you believe, prior to learning, that you *mostly don’t like to do activities in groups*, (check ✓ on column 2) if you sometimes achieve this, check ✓ on column 3.
### Subgroup: Teaching/Learning Activities (24 items)

<table>
<thead>
<tr>
<th>Questionnaire item</th>
<th>This is what ideally should happen</th>
<th>This is what really happens</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td><strong>Item no.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tasks for group work.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2 I like to listen to my friends' ideas about what we read.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>3-4 I like to do activities in groups.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>5-6 I can understand better when I do activities with friends.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>7-8 My group finishes the work on time.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>9-10 I can make notes to summarize the group's ideas.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>11-12 I like to lead my friends in doing activities.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Tasks for meaning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13-14 I like learning vocabulary from pictures.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>15-16 I can guess the meaning of the words from pictures.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Tasks for reading Comprehension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-18 I like to solve the problem/puzzle in reading assignments.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>19-20 I can put the story into the correct order.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>21-22 I can complete cloze exercises with the correct words.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>23-24 I can find the correct answers to the reading questions.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>

### Subgroup: Classroom interaction (16 items)
(expected beliefs and expected actions about student/teacher and student/student relationships in English reading classes)

<table>
<thead>
<tr>
<th>Questionnaire item</th>
<th>This is what ideally should happen</th>
<th>This is what really happens</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td><strong>Item no.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student/student relationship</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-26 I learn more when I study in small groups.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>27-28 I can have more opportunity to participate in activities among friends.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>29-30 I like to talk or study in groups.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>
Subgroup: Classroom interaction (16 items) (continued)

<table>
<thead>
<tr>
<th>Questionnaire item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student / teacher relationship</td>
</tr>
<tr>
<td>31-32</td>
</tr>
<tr>
<td>33-34</td>
</tr>
<tr>
<td>35-36</td>
</tr>
<tr>
<td>37-38</td>
</tr>
<tr>
<td>39-40</td>
</tr>
</tbody>
</table>

Figure 4.2 Attitude and behaviour questionnaire.

Source: designed by the author for this study.

The attitude and behaviour questionnaire consisted of two sections; Teaching/learning Activities, and Classroom interaction, which are ordered by difficulty conceptually. Under the aspect, tasks for group work, for example, it was conceptualised that listening to my friends’ ideas about what we read (item 1-2) was easier than doing activities in groups (item 3-4). This is because item 3-4 requires more effort and knowledge to be answered to the same category level by the students. All the items in the other sub-groups are ordered vertically by difficulty.

Item 1-2 is easier in the first perspective, this is what ideally should happen, than it is in the second perspective, this is what really happens (in my behaviour). This is because to actually do ‘things’ at a high category level requires more effort than to just think about what ought to be done ideally to the same level. All the other items under each sub-aspect are similarly ordered by difficulty, horizontally. While this is not explained for the other sub-aspects to avoid repetition, Figure 4.2 provides other examples of the principle in operation.

Model of the questionnaire

The model of students’ attitude and behaviour was based on Kennedy and Kennedy (1996)’s formulation of Ajzen’s (1991) model, as implemented by Waugh.
(2002, 2001), using items ordered conceptually by difficulty and answered in two perspectives, an attitude (an expectation) and a behaviour.

The model is conceptualised as being a multi-aspect model including two first order aspects of teaching and learning activities in terms of task work, and classroom interactions, each defined by second order aspects. Both of these consist of various ordered sub-groups, outlined in Figure 4.3.

![Diagram of students' attitude and behaviour](image)

**Figure 4.3** A model of students' attitude and behaviour.

Source: Constructed by the author, based on literature review.

The expectation at the outset of the teaching/learning activities was that group work characteristics would be the 'easiest' to achieve most of the time, followed by those for meaning, and those for reading comprehension, with the last 'hardest' to achieve most of the time. For classroom interaction, it was expected that student/teacher relationship characteristics would be easy to achieve, followed by student/student relationships. Similarly, it was expected that for each item, *this is what ideally should happen* would be located at an 'easier' position on the scale than the corresponding rating of *this is what really happens*. In other words, it was expected that students would find it 'easier' to have a high ideal attitude most of the time than to exhibit the behaviour most of the time.

It was expected that a scale of students' attitude and behaviour could be created using the computer program RUMM (Andrich, Sheridan, Lyne & Luo, 2000) to
calibrate all the student measures from 'low' to 'high' and all the item difficulties from
easy to hard on the same scale. Within each sub-set of second order aspects, stem-items
were ordered to form a pattern of responses that were of increasing 'difficulty' from
'easy' to 'hard'. For example, in the various orders outlined for group work, it may be
easy for students to say they can understand better when they do activities with friends
(item 5), harder to say they can make notes to summarize about the group's ideas (item
9), and hardest to say they like to lead their friends in doing activities (item 11). Students
were expected to self-report the stem-item in an ordered pattern from 'easy' to
'hard' and the perspectives in an ordered pattern from easy to hard. The model and item
structure were tested using a Rasch measurement analysis. The number of items
eliminated and those remaining after the validation are reported in chapter six.

Pilot testing of the questionnaire

The feedback from an informal trial of 15 grade six students' attitude and
behaviour questionnaire indicated respondents might find it easy to understand and to
respond to stem-items in the order this is what ideally should happen and this is what
really happens. This trial was done before a formal test of the questionnaire with 300
grade six students to see if students could understand the questions. The test used
primary school students in Chombung district. At first, the students understood the
instructions but did not understand how to answer the questionnaire, so the researcher
explained it to them so that they clearly understood what was required. The problem
was that they felt confused by the ideal and real perspectives for each item and why they
had to answer each item twice. The time taken to complete the questionnaire was about
30 minutes. The students did not suggest changing anything else, including the wording
of the items, about the questionnaire.

The next chapter explains the methodology of phase 1 - the collection and
analysis of data to create two linear measures: one of reading comprehension and the
second of attitudes and behaviours towards learning ESL.
CHAPTER FIVE

METHODOLOGY

This chapter is presented in three parts, corresponding to the three phases of the study. Phase 1 was the collection and Rasch measurement model analysis of the reading comprehension data, and the attitude and behaviour questionnaire data. Phase 2 involves an experiment with a control and experimental group to determine if a cooperative learning approach produces better reading comprehension test results, and better attitude and behaviour, than a Thai communicative teaching method, for English as a second language. Phase 3 involves group discussion with the teachers after the experiment and journal data collected by the teachers during the experiment.

Pilot testing (Thai version)

The attitude and behaviour questionnaire (Thai version) was checked to make sure that it could be understood by the students. It was tested formally with 15 grade six students in a primary school in Chombung district to see if there were any problems. At first, students did not understand how to answer the questionnaire and so the researcher explained it to them so that they clearly understood the meaning. The problem was that they felt confused by the ideal and real perspectives for each item and why they had to answer each item twice. They had never answered a questionnaire like this before. After trialling the attitude and behaviour questionnaire, the English reading comprehension was tested formally. Students could complete this test without any problem and they did it within 1.30 hours.

Data collection and method of analysis (phase 1)

The next step was to administer the English reading comprehension test and the attitude and behaviour questionnaire to 300 students in a large provincial primary school. These grade six students were representative of the grade six students used in the experimental and control groups. The chosen school had about twelve grade six classes of about 27 students each. This school was located in Samutsakhon Province.
which was about 100 kilometers from Ratchaburi, not too far from the practical teaching area of the Rajabhat Institute Muban Chombung.

Sample (phase 1)

The 300 sample of gender-mixed grade 6 students came from a large provincial primary school which was located in Samutsakhon Province, 25 kilometers from Bangkok. The school has about 2,500 students with 110 teachers. There were about 102 male and 198 female students aged between 11-12 years old. Most of their parents are stakeholders, sellers, and administrative officers. The chosen school was located outside the Rajabhat Institute Muban Chombung practice teaching area but close enough to have similar student abilities and characteristics to those in the experiment in Ratchaburi, which can be the representative of many other schools in Thailand. It took 2 hours for the examination, including the questionnaire, for all 12 classes of grade six students from 09.00-11.00 AM. After going back to Rajabhat Institute Muban Chombung, the third year English major students collated the data which then was entered into an EXCEL computer program. Finally, the data was analysed with the RUMM computer program (Rasch Unidimensional Measurement Model) (Andrich, Sheridan, Lyne & Luo, 2000).

Ethics Procedure (phase 1)

The school principals with the regular English teachers at the school were approached (after the Edith Cowan University Ethics Committee had approved the letter of consent), and asked if they would be willing to participate in this classroom research (see Appendix B). The statement in the letter outlined the purpose of the experiment and ensured the regular English teachers and the students of confidentiality and anonymity, with the right to refuse to participate, and to withdraw from the experiment at any time. After they had read the information and were satisfied, they were asked to sign a form of consent. Then, students signed the form of consent based on the conditions mentioned above, indicating their willingness to participate.

Data preparation (phase 1)

The data were entered into an Excel program. For the reading comprehension test, and attitude and behaviour questionnaire, there were the student code numbers and
the item numbers (from left to right). The student code number was started from number 1001, and continued until 1300 (300 students). The item number for reading comprehension test was started from 1, and continued until 60 (60 items). For attitude and behaviour, items started from 1, and continued until 64 (64 items) with item responses ranging from 1 to 4. The data were entered into an Excel program, as shown in Tables 5.1 and 5.2.

Table 5.1

Reading comprehension data entered into an Excel program.

<table>
<thead>
<tr>
<th>Item no.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>.........</th>
<th>60</th>
<th>Total score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stu.code</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1001</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1002</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1003</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1004</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1005</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1300</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5.1 shows how the data for the reading comprehension test were set out. Students were numbered from 1001 to 1300 and item responses were recorded as either 0 (wrong) or 1 (right).
Table 5.2
Attitude and behaviour questionnaire data entered into an Excel program.

<table>
<thead>
<tr>
<th>Stu.code</th>
<th>Item no.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>........... 64</th>
<th>Total score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1001</td>
<td></td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1002</td>
<td></td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1003</td>
<td></td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1004</td>
<td></td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1005</td>
<td></td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For item number 1, the first student (1001) chose 2 which means that the student mostly did not agree with the statement in item 1 (what I ideally think should happen). Then, in item number 2, the first student chose 3 which means that the student sometimes agreed with the statement in item 2, and so on.

After all of the data above were entered into the Excel program, it was converted into a word-text document ready for the Rasch analysis. The Rasch analysis is described in chapter six. The Rasch analysis produced a linear scale to measure two variables (after non-fitting items were deleted). These were reading comprehension in English, and attitude and behaviour towards learning English, which were used in phase 2.

Data collection and method of analysis (phase 2)

The experimental design (phase 2)

Thirty-two Prathom six (grade 6) students at three schools, Wat Chong Lom, Wat Phikulthong and Wat Don-Ta-Lung schools, Ratchaburi province, studying Fundamental English, were chosen. They were allocated by random sampling, with sixteen Prathom six students to each of an experimental group and a control group at each of the three schools. Thus, there were forty-eight students in three experimental
groups, and another forty-eight students in three control groups, making a total of ninety-six students.

Three control groups were taught by the Thai communicative approach. Three experimental groups were taught by the cooperative learning approach. The experimental groups and the control groups were treated the same in every respect, except the steps of teaching which were different. These treatment controls are explained later in this chapter.

The length of the experimental study was sixteen hours. Before the experiment, two pretests (involving reading comprehension, and an attitude and behaviour questionnaire) were given for the three experimental groups and the three control groups. After the treatment, the reading comprehension test and the attitude and behaviour questionnaire, which were the same as the pretest, were used again as posttests to see whether the students improved in English reading comprehension, and in attitude and behaviour.

Sample (phase 2)

Three schools were chosen for the experiment within the Rajabhat Institute Muban Chombung area of the trainee teacher practice. They are in the same area in Ratchaburi province and they all could be described as typical small provincial village temple schools for grade one to six students. The reason that the schools in the same area were chosen was that the researcher and the teachers were able to contact each other easily. The first area (Wat Chong Lorn) which was the biggest school with 970 students in total, while the other two (Wat Phikulthong and Wat Don-Ta-Lung) were smaller with 745 and 678 students respectively in total. For Wat Chong Lom schools, there were sixty-five teachers involving six English teachers and there were three grade six classes of about twenty-five students each. In the second school, Wat Phikulthong, there were fifty-eight teachers, including five English teachers, and there were two grade six classes of about twenty students each. In Wat Don-Ta-Lung, there were fifty-five teachers, including five English teachers, and there were two grade six classes of about twenty students each.

The number of students in the seven grade six classes at Wat Chong Lom, Wat Phikulthong, and Wat Don-Ta-Lung chosen for this study was seventy-five, forty and forty, respectively. Because a smaller number of students was needed, simple random sampling was used to allocate students to the control and experimental groups within each class.
The thirty-two participants from Wat Chong Lom, Wat Phikulthong, and Wat Don-Ta-Lung were divided into two groups (in each school) by random sampling, and then they were allocated to control groups (N = 16) in each school and experimental groups (N = 16) in each school. Thus, the total for the three schools was ninety-six students.

All of the ninety-six students were twelve years old and of mixed gender. They had studied in five learning experience groups: Basic Skills Group, Life Experiences, Character Development, Work-Oriented Experiences, and Special Experience (Office of the National Education Commission, 1999). English is one of the subjects which was in Basic Skills Group. The school hours were from 8.00 AM to 15.30 PM everyday, Monday to Friday.

Procedure (phase 2)

There were four letters asking permission to do the experiment with the Prathom 6 (grade 6) students in the three schools (Wat Chong Lom, Wat Phikulthong, and Wat Don-Ta-Lung schools). They were sent from the Dean of the Faculty of Education at Rajabhat Institute Muban Chombung. The four letters involved (1) getting three trainee teachers to be volunteers for the experiment, (2) getting permission from the students’ parents/guardian, (3) getting permission from the school Principal, and (4) getting permission from the regular teacher to be part of a group discussion. In preparing three trainee teachers for the experiment, a two-day orientation seminar on practice teaching for the trainee English major teachers in the two methods of reading comprehension learning, were given. These were the Thai communicative method and the cooperative learning method.

After the orientation seminar on practice teaching, an assignment test on knowledge of the two teaching methods (cooperative learning and Thai communicative) was used, and three trainee teachers who had obtained similar high scores were chosen. This helped to ensure that the trainee teachers had similar knowledge and skills in the teaching methods, an aspect of experimental control. Next, the lesson plans for both methods of teaching were written by the researcher. The contents were about being able to understand the main ideas, sequencing the order of content, and understanding the meaning from English reading tasks using pictures. Finally, the three trainee teachers and the three English teachers from the three schools studied the whole plan of the research, another aspect of experimental control.
During the experiment, the three control groups were taught by the Thai communicative approach. The three experimental groups were taught by the cooperative learning approach. The length of the experimental study was sixteen hours. In each of the three schools, the one trainee teacher taught both the experimental and control groups. After the sixteen hours of teaching, the reading test and the questionnaire, which were the same papers as the pretests, were given as posttests, and compared with the pretests.

Table 5.3

Planned time scheduling during the experiment.

<table>
<thead>
<tr>
<th>Date</th>
<th>8.30</th>
<th>8.50</th>
<th>9.10</th>
<th>9.40</th>
<th>10.00</th>
<th>10.20</th>
<th>10.50</th>
<th>11.10</th>
<th>11.40</th>
<th>12.00</th>
<th>12.30</th>
<th>13.00</th>
<th>13.30</th>
<th>13.40</th>
<th>14.10</th>
<th>14.30</th>
<th>14.50</th>
<th>15.10</th>
<th>15.30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon</td>
<td>Exp</td>
<td>Exp</td>
<td>Exp</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Exp</td>
<td>Exp</td>
<td>Exp</td>
<td>Exp</td>
<td>Exp</td>
<td>Exp</td>
</tr>
<tr>
<td>Wed</td>
<td>Exp</td>
<td>Exp</td>
<td>Exp</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
<td>Con</td>
</tr>
<tr>
<td>Fri</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Trainee teacher meets researcher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Exp. means experimental group taught by cooperative learning.  
Con. means control group taught by Thai communicative method.

Research Design

Gave 2 days orientation seminar on practice teaching to the trainee teachers about 2 methods of teaching, Thai communicative method and cooperative learning. Assignment test was used and 3 trainee teachers with similar high scores were chosen.

Rasch-validation of English reading comprehension test, and attitude and behaviour questionnaire.  
N = 300

Conduct first discussion group meeting  
TEST (Trigger, Explore)
Pretest control group (reading comprehension & attitudes and behaviour questionnaire) | Pretest experimental group (reading comprehension & attitudes and behaviour questionnaire)
---|---
Instruct control group using Thai communicative method (4 weeks) | Instruct experimental group using cooperative learning (4 weeks)
Posttest control group (reading comprehension & attitudes and behaviour questionnaire) | Posttest experimental group (reading comprehension & attitudes and behaviour questionnaire)

Conduct second discussion group meeting (3 trainee teachers from 3 school with 3 regular English teachers, conducted by researcher (using TEST procedure (Matthews, 1993), TEST: Strategize, Treat.

Report results.

**Figure 5.1** Design for data collection and analysis (phase 2)

Note: TEST: Trigger, Explore, Strategize, Treat

**Pretests and posttests (phase 2)**

After the data (N = 300) were analysed with the RUMM computer program, there were 32 valid items measuring English reading comprehension, and 40 valid items measuring attitudes and behaviour left. These items in the pretests and posttests (English reading test and attitude and behaviours) were from the same papers that had been used before and after the experiment (for 3 experimental groups and 3 control groups) in order to see whether expected actions had changed before and after this experiment (See Table 5.4 below).
Table 5.4
The pretest and posttest administration for the experiment.

<table>
<thead>
<tr>
<th></th>
<th>Pretest</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental groups</td>
<td>reading comprehension &amp; attitude and behaviour</td>
<td>reading comprehension &amp; attitude and behaviour</td>
</tr>
<tr>
<td>N = 48</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control groups</td>
<td>reading comprehension &amp; attitude and behaviour</td>
<td>reading comprehension &amp; attitude and behaviour</td>
</tr>
<tr>
<td>N = 48</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For all the students in the experimental and control groups, the raw total scores, were converted to a measure on the linear Rasch scale for each measure. These measures were then used in ANOVA and t-tests, for the experimental and control groups to test for a significant difference.

Controls in the experiment (phase 2)

Problems can happen during the experimental process that can affect the result. The problems often come from the persons and the processes of the experiment. Before the experiment, random sampling was used to allocate the students to the control and the experimental groups, so that the characteristics of the students in each group were similar. The three trainee teachers were carefully selected and monitored so that the treatment of the students was the same, except for the teaching methodology. During the experiment, the text, visual aids, assignments, activities, exercises, and material from the lesson plans were the same, except that the steps of teaching in both groups were different. This means that the assignments for the students of both groups in the lesson plans were the same. The teaching times in both the experimental group and the control group were the same, one hour, three periods per day, each. The planned time-scheduling of both the experimental and control groups were during the morning, not in the afternoon, because of possible tiredness of the students which might have affected their studying ability. In the planned time schedule, the teaching periods of both groups were taken in turn. When the experimental group was taught first, then the control group was taught later, and the next day, the control group was taught first, while the experimental group was taught later. This action was done to prevent any bias in the session times.
Trainee teachers often used Thai when the objectives of the lessons were mentioned, so that the students would understand them clearly. Trainee teachers were advised to use the same amount of Thai words in both groups and the trainee teachers were reminded of this from time-to-time. They spoke English in both groups during their teaching, but Thai words were often used during telling the objectives of the lessons. Again, an attempt was made to use the same number of Thai words in each group, and trainee teachers were reminded of this from time-to-time.

An attempt was made to limit any cooperation between students across the experimental and control groups by informing them not to do so. The researcher supervised classes in all schools at least twice a week during the experiment and met the trainee teacher for weekly journals as part of the supervisory control.

In summary, a great deal of care was taken to treat the experimental groups and the control groups the same, in every way, except for teaching methodology. Then, if there were any measured differences in reading comprehension, or in attitude and behaviour, those differences could reasonably be attributed to the different teaching method.

Data collection and method of analysis (phase 3)

Discussion group meetings.

The three trainee teachers and the three English teachers of the three schools (Wat Chong Lom, Wat Pikulthong, and Wat Don-Ta-Lung school) were asked to participate in a training group meeting to discuss their attitude and behaviour to their teaching experience. The three trainee teachers and the three English teachers were willing to be interviewed and they then were asked to sign a form of consent based on the conditions mentioned above, indicating their willingness to be interviewed. The time for the interview was set according to the interviewee's convenience. As a result, the questions were asked first as a guide by the researcher, who acted as a facilitator.

The discussion group's agenda was based on the TEST procedure of Matthews (1993). It is used effectively in training English reading teachers. It involved brainstorming sessions and it was used as a training method for the three trainee teachers and the three English teachers to cooperate in problem solving. This means that, if the trainee teachers faced any problem in each period, they should explain how to solve that problem. There is a four stage agenda for the two focus group sessions (TEST): Trigger, Explore, Strategies and Treat. The first two sessions, Trigger and
Exploring, were used in general information - sharing the problem definition strategy to stimulate discussion in methodology before doing the experiment. Then, the other two aspects, Strategies and Treat, were used as the basis of a problem solving session after the experiment.

Discussion group data

During their teaching sessions, the trainee teachers were asked to record their observations in Thai. The observation form they used told of their attitudes and behaviour in teaching, the problems they faced, and how to solve those problems. Then, the journals were sent back to the researcher after the experiment. The journals were discussed with the researcher every Friday during the experiment (see in Appendix F). These contained confidential observations and thoughts.

The next chapter discusses the results of the data analysis for phase 1.
CHAPTER SIX

DATA ANALYSIS (PHASE 1)

CREATING SCALES TO MEASURE ACHIEVEMENT OF READING COMPREHENSION, AND ATTITUDES AND BEHAVIOURS TOWARDS READING COMPREHENSION

This chapter describes the process of data analysis for the reading comprehension test, and the students' attitude and behaviour questionnaire, using the Rasch Unidimensional Measurement Model (RUMM) computer program (Andrich, Sheridan, Lyne, & Luo, 2000). The results are presented by tables, figures and descriptive text. The general meaning of the reading comprehension test and the students' attitude and behaviour towards the reading comprehension questionnaire, are discussed, and the relevant psychometric statistics are explained.

Data analysis with the RUMM computer program

Responses to the attitude and behaviour questionnaire were entered into an Excel file in terms of the response category codes (one, two, three or four) and converted to a text-file in word. Similarly, the responses for the English reading comprehension test were entered into an Excel file in terms of the response category codes (zero for wrong and one for right), and converted to a text-file in word. The data were analysed using the Rasch Unidimensional Measurement Model (RUMM) computer program (Andrich, Sheridan, Lyne & Luo, 2000).

A number of steps was taken in order to create a proper interval-level scale of students' attitudes and behaviours and English reading comprehension. First, the item thresholds were checked to see that they were ordered in line with the ordering of the response categories. Only those items with ordered thresholds (indicating that the response categories for the item were answered consistently and logically) were included in the final analysis. The other items were discarded. Then, the residuals were examined. A residual is the difference between the expected item 'response' calculated according to the model and the actual item 'response' as marked by students. The item-trait test-of-fit chi-square tests the consistency of the item parameters across the students' attitude and behaviour questionnaire and the English reading comprehension
test measures for each item. After that, the person-item trait fit was investigated to determine whether there was agreement among students as to the ‘difficulties’ of all the items along the scale. The non-performing items of English reading comprehension (28 items out of 60) and the non-performing items of the students’ attitude and behaviour questionnaire (24 items out of 64), determined through the steps described, were deleted from the scale, and the analysis was repeated with the good items to create a proper, linear scale. Variable measures were calibrated on the same scale as the item difficulties by the RUMM program for the items that fitted the Rasch measurement model.

Results of Phase 1 testing

Reading Comprehension measure

The summary statistics of the Rasch analysis are set out in Table 6.1. Table 6.2 shows the difficulties for 32 English reading comprehension test items. Figure 6.1 shows person measures plotted against item difficulties for reading comprehension. Figure 6.2 shows the student measures of English reading comprehension and item difficulties on the same scale. Figures 6.3 and 6.4 are the item category curves for a good fitting item and a poor fitting item, respectively, for the English reading comprehension test. Figure 6.5 shows the person item map of reading comprehension measures for understanding the main ideas. Figure 6.6 shows the person item map of reading comprehension measures for sequencing the order of ideas. Figure 6.7 shows the person item map of reading comprehension for understanding the meaning from pictures.

Attitude and Behaviour measure

The summary statistics of the Rasch analysis are set out in Table 6.3. Table 6.4 shows the items that fitted the Rasch model for attitude and behaviour, and their item difficulties in logits. Figure 6.8 shows the student attitude and behaviour measures and item locations on the same scale. Figure 6.9 shows the item thresholds and person measures on the same scale which is a graph of the item threshold difficulties aligned on the scale from ‘easy’ to ‘hard’. Figure 6.10 shows person item map of expectations for tasks in classroom interaction. Figure 6.11 shows person item map of expectations in student relationships. Figure 6.12 shows person item map of behaviour on tasks. Figure 6.13 shows person item map of behaviour in student relationships. Figure 6.14
and Figure 6.15 are the item category curves for a good fitting item and a poor fitting item, respectively, for the attitude and behaviour measures.

**Psychometric Characteristics**

**Reading Comprehension measure.**

For the reading comprehension measure, there were 60 original items, and 28 did not fit the measurement model (see Appendices D&E). That left 32 test items that did fit the measurement model. These 32 test items were about understanding the main facts, sequencing the order of ideas, and understanding the meaning from English reading tasks using pictures.

### Table 6.1

**Summary statistics for 32 item English reading comprehension test.**

<table>
<thead>
<tr>
<th></th>
<th>Items</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number</strong></td>
<td>32</td>
<td>300</td>
</tr>
<tr>
<td><strong>Location mean</strong></td>
<td>0.00</td>
<td>0.60</td>
</tr>
<tr>
<td><strong>Standard deviation</strong></td>
<td>0.39</td>
<td>0.91</td>
</tr>
<tr>
<td><strong>Fit statistic mean</strong></td>
<td>-0.29</td>
<td>0.23</td>
</tr>
<tr>
<td><strong>Standard deviation</strong></td>
<td>0.74</td>
<td>0.67</td>
</tr>
<tr>
<td>Item-trait interaction chi square</td>
<td>= 104.86</td>
<td></td>
</tr>
<tr>
<td>Probability of item-trait (p)</td>
<td>= 0.05</td>
<td></td>
</tr>
<tr>
<td>Degree of freedom</td>
<td>= 128</td>
<td></td>
</tr>
<tr>
<td>Student Separation Index</td>
<td>= 0.73</td>
<td></td>
</tr>
<tr>
<td>Power of tests-of-fit</td>
<td>good</td>
<td></td>
</tr>
</tbody>
</table>

Note on Table 6.1

1. The item means are constrained to zero by the measurement model.
2. When the data fit the measurement model, the fit statistic approximates a distribution with a mean near zero and a SD near one (a good fit for this scale).
3. The item-trait interaction indicates the agreement displayed with all items across all students from different locations on the scale (acceptable for this scale).
4. The Student Separation Index is the proportion of observed English reading comprehension variance considered true (in this scale, 73 % and good).
There was a reasonable consensus among students about the difficulties of the items, ordered along the scale from 'easy' to 'hard'. This is indicated by the item-trait test-of-fit ($X^2 = 104.86$, df = 128, $p = 0.05$) (the null hypothesis is that there is no significant interaction between the responses to the items and the person measures along the trait.) This means that students with low, medium or high measures agreed that certain items were easy, that others were of moderate difficulty, and that some others were hard.

The Index of Separability for the 32 item scale was 0.73. This means that the proportion of observed variance considered true is 73 percent and this is akin to traditional reliability using Cronbach Alpha. While this is acceptable, there is room for improvement in any future use of the scale when it should be revised. The RUMM computer program rates the overall power of tests-of-fit in the categories of too low, reasonable, good, and excellent and, in this case, it was rated as good, based on the Index of Separation.

Table 6.2
The difficulties of the final 32 items for English reading comprehension.

<table>
<thead>
<tr>
<th>Original Item no.</th>
<th>New</th>
<th>Item location</th>
<th>Item category</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>1</td>
<td>-0.12</td>
<td>Understanding meaning from pictures.</td>
</tr>
<tr>
<td>16</td>
<td>2</td>
<td>0.62</td>
<td>Understanding the main facts.</td>
</tr>
<tr>
<td>24</td>
<td>3</td>
<td>-0.23</td>
<td>Sequencing the order of ideas.</td>
</tr>
<tr>
<td>57</td>
<td>4</td>
<td>0.25</td>
<td>Understanding the main facts.</td>
</tr>
<tr>
<td>44</td>
<td>5</td>
<td>-0.20</td>
<td>Understanding the main facts.</td>
</tr>
<tr>
<td>43</td>
<td>6</td>
<td>-0.39</td>
<td>Understanding meaning from pictures.</td>
</tr>
<tr>
<td>39</td>
<td>7</td>
<td>0.06</td>
<td>Understanding meaning from pictures.</td>
</tr>
<tr>
<td>42</td>
<td>8</td>
<td>-0.27</td>
<td>Understanding meaning from pictures.</td>
</tr>
<tr>
<td>58</td>
<td>9</td>
<td>0.15</td>
<td>Understanding the main facts.</td>
</tr>
<tr>
<td>49</td>
<td>10</td>
<td>-0.04</td>
<td>Understanding the main facts.</td>
</tr>
<tr>
<td>29</td>
<td>11</td>
<td>0.01</td>
<td>Sequencing the order of ideas.</td>
</tr>
<tr>
<td>23</td>
<td>12</td>
<td>0.18</td>
<td>Sequencing the order of ideas.</td>
</tr>
<tr>
<td>26</td>
<td>13</td>
<td>-0.35</td>
<td>Sequencing the order of ideas.</td>
</tr>
<tr>
<td>25</td>
<td>14</td>
<td>-0.32</td>
<td>Sequencing the order of ideas.</td>
</tr>
<tr>
<td>48</td>
<td>15</td>
<td>-0.21</td>
<td>Understanding the main facts.</td>
</tr>
<tr>
<td>22</td>
<td>16</td>
<td>-0.22</td>
<td>Sequencing the order of ideas.</td>
</tr>
<tr>
<td>18</td>
<td>17</td>
<td>-0.04</td>
<td>Understanding the main facts.</td>
</tr>
<tr>
<td>34</td>
<td>18</td>
<td>-0.36</td>
<td>Understanding meaning from pictures.</td>
</tr>
</tbody>
</table>

65
Table 6.2 (continued)

<table>
<thead>
<tr>
<th>Original Item no.</th>
<th>New</th>
<th>Item location</th>
<th>Item category</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>19</td>
<td>-0.45</td>
<td>Understanding meaning from pictures.</td>
</tr>
<tr>
<td>12</td>
<td>20</td>
<td>0.42</td>
<td>Understanding the main facts.</td>
</tr>
<tr>
<td>37</td>
<td>21</td>
<td>-0.24</td>
<td>Understanding meaning from pictures.</td>
</tr>
<tr>
<td>45</td>
<td>22</td>
<td>-0.10</td>
<td>Understanding the main facts.</td>
</tr>
<tr>
<td>47</td>
<td>23</td>
<td>0.26</td>
<td>Understanding the main facts.</td>
</tr>
<tr>
<td>46</td>
<td>24</td>
<td>0.08</td>
<td>Understanding the main facts.</td>
</tr>
<tr>
<td>30</td>
<td>25</td>
<td>-0.24</td>
<td>Sequencing the order of ideas.</td>
</tr>
<tr>
<td>20</td>
<td>26</td>
<td>-0.40</td>
<td>Sequencing the order of ideas.</td>
</tr>
<tr>
<td>38</td>
<td>27</td>
<td>0.01</td>
<td>Understanding meaning from pictures.</td>
</tr>
<tr>
<td>27</td>
<td>28</td>
<td>-0.08</td>
<td>Sequencing the order of ideas.</td>
</tr>
<tr>
<td>40</td>
<td>29</td>
<td>0.05</td>
<td>Understanding meaning from pictures.</td>
</tr>
<tr>
<td>32</td>
<td>30</td>
<td>1.25</td>
<td>Sequencing the order of ideas.</td>
</tr>
<tr>
<td>19</td>
<td>31</td>
<td>-0.10</td>
<td>Understanding the vocabulary.</td>
</tr>
<tr>
<td>11</td>
<td>32</td>
<td>1.04</td>
<td>Understanding the main facts.</td>
</tr>
</tbody>
</table>

Table 6.2 shows the 32 English reading comprehension test items analysed with the Rasch measurement model. The original item numbers and the new item numbers are also shown with the subgroups, with the suitable items shown in appendix E.

Attitude and Behaviour measure

Of the original 64 items of the attitude and behaviour measure, 24 did not fit the measurement model, in either the real or ideal aspect, (see Appendix C) and were discarded. Of the 40 items that did fit the measurement model, 20 items measured a real aspect of students’ attitude and behaviour (That is what really happens), and 20 items measured an ideal aspect of students’ attitude and behaviour (That is what ideally should happen). Together, these 40 items fitted the measurement model and the data formed an interval-level scale from which valid and reliable inferences can be made.
Table 6.3
Summary statistics for 40 item students' attitude and behaviour measure.

<table>
<thead>
<tr>
<th></th>
<th>Items</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>40</td>
<td>300</td>
</tr>
<tr>
<td>Location mean</td>
<td>0.00</td>
<td>0.23</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>0.39</td>
<td>0.97</td>
</tr>
<tr>
<td>Fit statistic mean</td>
<td>0.16</td>
<td>-0.28</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>0.74</td>
<td>2.02</td>
</tr>
</tbody>
</table>

Item-trait interaction chi square = 198.28
Probability of item-trait \((p)\) = 0.05
Degrees of freedom = 160
Student Separation Index = 0.92
Power of tests-of-fit : excellent (based on the Separation index)

Notes on Table 6.3
1. The item means are constrained to zero by the measurement model.
2. When the data fit the measurement model, the fit statistic approximates a
distribution with a mean near zero and a SD near one (a good fit for this scale).
They are reported only to 2 decimal places because the error is to two decimal
places.
3. The item-trait interaction indicates the agreement displayed with all items across all
students from different locations on the scale (acceptable for this scale).
4. The Student Separation Index is the proportion of observed variance considered true
(in this scale, 92 % and excellent).
5. Standard errors are between 0.07 and 0.10.

There was a reasonable consensus among students about the difficulties of the
items, ordered along the scale from ‘easy’ to ‘hard’. This is indicated by the item-trait
test-of-fit \((X^2 = 198.28, df = 160, p = 0.05)\) (the null hypothesis is that there is no
significant interaction between the responses to the items and the person measures along
the trait.). This means that students with low, medium or high measures agreed that
certain items were easy, that others were of moderate difficulty, and that some others
were hard. Category threshold values (see Figure 6.9 and Appendix J) are ordered from
low to high which indicates that students answered the response categories consistently for the 40 items. The Index of Separability for the 40 item scale with the five response categories is 0.92. This means that the proportion of observed variance considered true is 92 percent and this is akin to traditional reliability, using Cronbach Alpha. The RUMM computer program rates the overall power of tests-of-fit in the categories of too low, reasonable, good, or excellent and, in this case, it was rated as excellent, based on the Index of Separation.

Table 6.4
The final 40 items for the attitude and behaviour measure.

<table>
<thead>
<tr>
<th>Original Item no.</th>
<th>stem item</th>
<th>New Item no.</th>
<th>Questionnaire item</th>
<th>This is what ideally should happen</th>
<th>This is what really happens</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-6</td>
<td>1</td>
<td>1-2</td>
<td>Tasks for group work</td>
<td>I like to listen to my friends’ ideas about what we read.</td>
<td>-0.65</td>
</tr>
<tr>
<td>1-2</td>
<td>2</td>
<td>3-4</td>
<td></td>
<td>I like to do activities in groups.</td>
<td>-0.57</td>
</tr>
<tr>
<td>3-4</td>
<td>3</td>
<td>5-6</td>
<td></td>
<td>I can understand better when I do activities with friends.</td>
<td>-0.12</td>
</tr>
<tr>
<td>7-8</td>
<td>4</td>
<td>7-8</td>
<td></td>
<td>My group finishes the work on time.</td>
<td>+0.11</td>
</tr>
<tr>
<td>11-12</td>
<td>5</td>
<td>9-10</td>
<td></td>
<td>I can make notes to summarize about the group’s ideas.</td>
<td>+0.18</td>
</tr>
<tr>
<td>9-10</td>
<td>6</td>
<td>11-12</td>
<td></td>
<td>I like to lead my friends in doing activities.</td>
<td>+0.45</td>
</tr>
<tr>
<td>15-11</td>
<td>7</td>
<td>13-14</td>
<td>Tasks for meaning</td>
<td>I like learning vocabulary from pictures.</td>
<td>-0.65</td>
</tr>
<tr>
<td>17-18</td>
<td>8</td>
<td>15-16</td>
<td></td>
<td>I can guess the meaning of the words from pictures.</td>
<td>-0.56</td>
</tr>
<tr>
<td>27-28</td>
<td>9</td>
<td>17-18</td>
<td>Tasks for reading comprehension.</td>
<td>I like to solve the problem/puzzle in reading assignment.</td>
<td>-0.01</td>
</tr>
<tr>
<td>25-26</td>
<td>10</td>
<td>19-20</td>
<td></td>
<td>I can put the story into the correct order.</td>
<td>+0.35</td>
</tr>
<tr>
<td>31-32</td>
<td>11</td>
<td>21-22</td>
<td></td>
<td>I can complete cloze exercises with the correct words.</td>
<td>+0.38</td>
</tr>
<tr>
<td>29-30</td>
<td>12</td>
<td>23-24</td>
<td></td>
<td>I can find the correct answers to the reading questions.</td>
<td>+0.38</td>
</tr>
<tr>
<td>57-58</td>
<td>13</td>
<td>25-26</td>
<td>Student/student relationships</td>
<td>I learn more when I study in small groups.</td>
<td>-0.59</td>
</tr>
<tr>
<td>53-54</td>
<td>14</td>
<td>27-28</td>
<td></td>
<td>I can have more opportunity to participate in activities among friends.</td>
<td>-0.37</td>
</tr>
<tr>
<td>49-50</td>
<td>15</td>
<td>29-30</td>
<td></td>
<td>I like to talk or study in groups.</td>
<td>+0.03</td>
</tr>
<tr>
<td>35-36</td>
<td>16</td>
<td>31-32</td>
<td>Student/teacher relationships</td>
<td>I learn a lot from the teacher.</td>
<td>-0.34</td>
</tr>
<tr>
<td>33-34</td>
<td>17</td>
<td>33-34</td>
<td></td>
<td>I like my English teacher.</td>
<td>-0.15</td>
</tr>
</tbody>
</table>
Table 6.4  The final 40 items for the attitude and behaviour measure.  (continued)

<table>
<thead>
<tr>
<th>Original item no.</th>
<th>Original stem</th>
<th>New item no.</th>
<th>Questionnaire item</th>
<th>Subgroup : teaching/learning activities (24 items) and classroom interactions (16 items)</th>
<th>This is what ideally should happen</th>
<th>This is what really happens</th>
</tr>
</thead>
<tbody>
<tr>
<td>43-44</td>
<td>18</td>
<td>35-36</td>
<td>I can discuss my hobbies and my future plans with my teacher.</td>
<td></td>
<td>-0.03</td>
<td>+0.12</td>
</tr>
<tr>
<td>45-46</td>
<td>19</td>
<td>37-38</td>
<td>I like the way my teacher teaches me English reading.</td>
<td></td>
<td>+0.09</td>
<td>+0.21</td>
</tr>
<tr>
<td>41-42</td>
<td>20</td>
<td>39-40</td>
<td>I can talk to my teacher informally about my reading assignment.</td>
<td></td>
<td>+0.15</td>
<td>+0.14</td>
</tr>
</tbody>
</table>

Table 6.4 shows the difficulties of the 40 items of the students’ attitude and behaviour measure. The ideal items are nearly all easier than their corresponding real items, as hypothesised. The original item numbers and the new item numbers are also shown with the subgroups.

All the data on the variable attitude and behaviour towards learning English support the view that the data are valid and reliable. The Index of Separation is high (0.92). The 40 items are ordered in difficulty from easy to hard. The student measures are ordered from low to high and there is strong agreement amongst the students about the ordering of the item difficulties. There is, therefore, an expectation that valid and reliable inferences can be made from these data.

Reading comprehension scale

Figure 6.1 shows the item difficulties and person measures of reading comprehension calibrated on the same scale. The spread of the items indicates there are not enough ‘easy’ items or enough ‘hard’ items to cover the person measures. The data presented indicate that a satisfactory unidimensional scale of reading comprehension has been constructed, but the targeting could be improved. Ideally, some very easy items and some hard items should be created and added to this scale in order to target these students better. The thresholds of the items range from approximately −0.6 to +1.2 logits but they do not cover the range of students’ reading comprehension on the scale which range from approximately −2.0 to +1.4 logits (see Figure 6.10).
Figure 6.1 Person measures plotted against item difficulties for reading comprehension.

Note on Figure 6.1
1. The scale is in logits, the log odds of answering the response categories positively.
2. Student measures (low to high) are placed on the upper side of the scale and item locations ('easy' to 'hard') are placed on the lower side of the scale.

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>STUDENTS</th>
<th>ITEM DIFFICULTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>High measures of attitude and behaviour</td>
<td>Hard items</td>
</tr>
<tr>
<td></td>
<td>X</td>
<td>32.1</td>
</tr>
<tr>
<td>1.0</td>
<td>XX</td>
<td>11.1</td>
</tr>
<tr>
<td></td>
<td>XXXXXX</td>
<td>16.1</td>
</tr>
<tr>
<td></td>
<td>XXXX</td>
<td>12.1</td>
</tr>
<tr>
<td></td>
<td>XXXXXXX</td>
<td>47.1</td>
</tr>
<tr>
<td>0.0</td>
<td>XXXXX</td>
<td>38.1</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXX</td>
<td>44.1</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXX</td>
<td>44.1</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXX</td>
<td>20.1</td>
</tr>
<tr>
<td></td>
<td>XXXXX</td>
<td>35.1</td>
</tr>
<tr>
<td>-1.0</td>
<td>XXXXXX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XXXXXXX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XXXX</td>
<td></td>
</tr>
<tr>
<td>-2.0</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>-3.0</td>
<td>Low measures of attitude and behaviour</td>
<td>Easy items</td>
</tr>
</tbody>
</table>

X = 3 Persons

Figure 6.2 Students' reading comprehension and item 'difficulties' calibrated on the same scale.
The 32 items are aligned on the scale in order of difficulty from easy to hard (see Figure 6.2). Many students answered the moderately difficulty items (there were no easy items) positively (for example, items 35, 48, 24, 22). As the items become increasingly ‘difficult’ on the scale, respondents need a higher ability in reading comprehension to answer them positively. This means the more difficult items are answered positively only by students who have high ability in reading comprehension (for example, item 32, 11, 16, 12). Students with low ability in reading comprehension did not answer these difficulty items positively.

Generally, the tests-of-fit are good, and the errors are small in comparison to the separation of person measures along the scale. The easiest item is item 19 (original item 35, see Table 6.2) which is about understanding the meaning from pictures with a difficulty of −0.45. The hardest item is item 32 (original item 11, see Table 6.2) which is about understanding the main ideas with a difficulty of +1.04.

Category curve for good fitting item.

![Category curve for good fitting item.](image)

**Figure 6.3** Item Category Curve for reading comprehension item 1 (originally no.36) (good fitting item).

**Note**

1. Threshold is about −0.1 logits
Item 36 is one of the easiest items with a chi square probability of fit to the measurement model of 0.97, indicating an excellent fit to the model. This item is about sickness where students have to choose the word to describe pictures of sicknesses. Item 36 is 'He has got a stomach ache' which is one sickness in their everyday life. It is possible that students can remember it easily because of the realistic nature of the picture and their everyday experience with stomach pains. For this item, the difficulty is -0.12 which indicates that students found it relatively easy to understand the picture of 'sickness' (See Appendix D). Figure 6.3 shows that the Category 0 curve indicates that a person with a reading comprehension score of -4.0 logits (Person Location) has a probability of about 0.98 of answering in this category. Looking at the Category 1 curve, for a student with a reading comprehension score of -4.0, the probability of answering in this category is around +0.01. For a student with a reading comprehension score of +4.0, the probability of answering this item correctly (category 1 curve) is around 0.99, and for answering no (category 0 curve), the probability is about 0. So this item is performing just as it should for an easy item.

Category curve for poor fitting item

Figure 6.4  Item Category Curve for reading comprehension item 11 (originally no. 29) (not-so-good fitting item)

Note
1. Threshold is about +1.0 logits.
Item 11 is one of the hardest items with a chi square probability of fit to the measurement model of 0.01 which indicates a poor fit to the measurement model. The vocabulary of this text is difficult for grade 6 students, with words such as: 'elastic', 'germs', and 'dripping' (see Appendix D). It is possible that the nature of these words led to difficulty in understanding the text and it being the hardest item. For this item, the difficulty is 1.04 logits which indicated that students found it difficult to understand. Figure 6.4 shows that the Category 0 curve indicates that a person with a reading comprehension score of -2.0 logits (Person Location) has a probability of around 0.95 of answering this item incorrectly (category 0 curve). Looking at the Category 1 curve, a student with a reading comprehension score of -2.0 has a probability of answering this item correctly of around 0.05. A student with a reading comprehension score of around +4.0 has a probability near 0.95 of answering the item correctly (category curve 1) and a probability of answering incorrectly of 0.05 (category curve 0). So although the computer statistics indicated that this item didn’t fit the measurement model as well as it could, the category curve was performing appropriately.

Understanding the main ideas

Figure 6.5 shows the measures of reading comprehension on the LHS and the difficulties of the items of the sub-group, understanding the main ideas, on the RHS. The items of the sub-group, understanding the main ideas, are difficult. Only students with medium or high measures are likely to be able to answer them. Not too many students could answer the hardest items of this sub-group. For example, only 12 students are likely to be able to answer item 1 correctly, and only 39 students are likely to be able to answer item 16 correctly, out of 300 students. None of the items in this sub-group is easy. There are no items between the difficulties of -0.2 and -2.0 logits corresponding to the students with these measures. The easiest item (48) has a difficulty of -0.2 logits and could probably be answered correctly by 186 of the 300 students.
### Person Item Map

**Figure 6.5** Person item map (reading comprehension measures versus item difficulty, for understanding the main ideas) (300 students and 13 items).

### Sequencing the Order of Ideas

**Figure 6.6** shows the measures of reading comprehension on the LHS and the difficulties of the items of the sub-group, sequencing the order of ideas, on the RHS. The items of the sub-group, sequencing the order of ideas, are difficult. Only students with high or medium measures are likely to be able to answer them. Not too many students could answer the hardest items of this sub-group. For example, only 6 students are likely to be able to answer item 32 correctly, and 90 students are likely to be able to answer items 29 and 23 correctly, out of 300 students. None of the items in this sub-group is easy. There are no items between the difficulties of -0.2 and -2.0 logits corresponding to the students with these measures. The easiest items with a difficulty of -0.2 logits could probably be answered correctly by 189 of the 300 students.

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>STUDENTS</th>
<th>ITEM DIFFICULTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>High measures of attitude and behaviour</td>
<td>Hard items</td>
</tr>
<tr>
<td>1.0</td>
<td>XXXX 11</td>
<td></td>
</tr>
<tr>
<td>0.0</td>
<td>XXXX 46</td>
<td>57 47</td>
</tr>
<tr>
<td>-1.0</td>
<td>XXXX 44</td>
<td>19 45 18 49</td>
</tr>
<tr>
<td>-2.0</td>
<td>XXXX 48</td>
<td></td>
</tr>
<tr>
<td>-3.0</td>
<td>Low measures of attitude and behaviour</td>
<td>Easy items</td>
</tr>
</tbody>
</table>

X = 3 Persons
Figure 6.6  Person item map (reading comprehension measures versus item difficulty, for sequencing the order of ideas) (300 students and 13 items).

Understanding the meaning from pictures.

Figure 6.7 shows the measures of reading comprehension on the LHS and the difficulties of the item of the sub-group, understanding the meaning from pictures, on the RHS. The items of the sub-group, understanding the meaning from pictures, are of medium difficulty. Many students with medium measures are likely to answer them correctly, but many students with low measures are unlikely to be able to answer the items correctly. For example, 96 students with the lowest measures are unlikely to be able to answer the easiest item (no.35, difficulty –0.6 logits) correctly. There are no hard items corresponding to the measures from +0.2 to +1.4 logits, and no easy items corresponding to the measures from –0.8 to –2.0 logits, in this sub-group.
<table>
<thead>
<tr>
<th>LOCATION</th>
<th>STUDENTS</th>
<th>ITEM DIFFICULTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>High measures of attitude and behaviour</td>
<td>Hard items</td>
</tr>
<tr>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td>XXXXXXX</td>
<td>Hard items</td>
</tr>
<tr>
<td>XXX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XXX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XXXX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XXXXX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.0</td>
<td>XXXXX</td>
<td>38 40 39</td>
</tr>
<tr>
<td>XXXXXXX</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>XXXXXXXXXX</td>
<td>43 34 42 37</td>
<td></td>
</tr>
<tr>
<td>XXXXXXXX</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>-1.0</td>
<td>XXXXXXX</td>
<td>Easy items</td>
</tr>
<tr>
<td>XXXXXXXX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XXXXXXX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XXXX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>XX</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2.0</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>-3.0</td>
<td>Low measures attitude and behaviour</td>
<td>Easy items</td>
</tr>
</tbody>
</table>

X = 3 Persons

**Figure 6.7** Person item map (reading comprehension measures versus item difficulty, for understanding the meaning from pictures) (300 students and 13 items).

**Attitude and behaviour scale**

**Attitude and behaviour towards reading comprehension measure**

The locations (‘difficulties’) of the items are reasonably well targeted against the student measures (see **Figure 6.9**). This means that the attitude and behaviour questionnaire is not too hard or too easy for the students. Good targeting of items helps to achieve a good fit to the measurement model.
Figure 6.8  Students' Attitude and Behaviour measures (top) and item difficulties (bottom) calibrated on the same scale.

Notes on Figure 6.8
1. The scale is in logits, the log odds of answering the response categories positively.
2. Student measures (low to high) are placed on the upper side of the scale and item difficulties ('easy' to 'hard') are placed on the lower side of the scale.

In Figure 6.8, the student measures of attitude and behaviour towards reading comprehension range from −1.9 to +2.2 logits and the item difficulties range from −0.8 to +0.8 logits. This would indicate that there are insufficient hard items (from about 1.0 to 2.0 logits) and insufficient easy items (from about −1.0 to −2.0 logits). However, the easiest and hard item thresholds (see Figure 6.9) cover these areas of the scale. So the items are well targeted at these particular students.
<table>
<thead>
<tr>
<th>LOCATION</th>
<th>STUDENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0</td>
<td>High measures of attitude and behaviour</td>
</tr>
<tr>
<td>2.0</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>XX</td>
</tr>
<tr>
<td></td>
<td>XXX</td>
</tr>
<tr>
<td>1.0</td>
<td>XXXXXXX</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXX</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXX</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXX</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXX</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXX</td>
</tr>
<tr>
<td>0.0</td>
<td>XXXXXXXXXXXXXXXXX</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXXXXXX</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXXXXXX</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXXXXXX</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXX</td>
</tr>
<tr>
<td>-1.0</td>
<td>XXX</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>XXX</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>XX</td>
</tr>
<tr>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>X</td>
</tr>
<tr>
<td>-2.0</td>
<td></td>
</tr>
<tr>
<td>-3.0</td>
<td></td>
</tr>
<tr>
<td>-4.0</td>
<td></td>
</tr>
<tr>
<td>-5.0</td>
<td></td>
</tr>
</tbody>
</table>

Low measures of attitude and behaviour | Easy items

\(X = 2\) Persons

**Figure 6.9**  Attitude and behaviour measures and item thresholds calibrated on the same scale.

Note: Each cross on the LHS represents 2 student measures.

Numbers on the RHS represent item thresholds.
Figure 6.9 shows the item thresholds and person measures calibrated on the same scale. On the LHS, the student measures are ordered from low (bottom) to high (top). On the RHS, the item thresholds are ordered from easy (bottom) to hard (top). The spread of thresholds indicates that the items are well targeted at the students. That is, the item thresholds are well matched against, and cover the student measures. The thresholds of the items range from approximately $-3.0$ to $+2.2$ logits and cover the range of students' attitude and behaviour measures on the scale which range from approximately $-2.0$ to $+2.0$ logits (see Figure 6.9).

There are four students with low measures (about $-4$ logits) for which there are no corresponding easy items. The data presented indicate that a good unidimensional scale of attitude and behaviour towards reading comprehension has been constructed. For this scale, the errors are small (see notes on Table 6.3), the internal reliability is very high and the power of the tests-of-fit are excellent (see Appendix G).

The 40 items are aligned on the scale in order of 'difficulty' from 'easy' to 'hard' (see Figure 6.9). Nearly all the students answered the easy items positively (for example, items 26, 1, 13, 3, 25, 15). As the items become increasingly 'difficult' on the scale, respondents need a higher attitude and behaviour measure to answer them positively. This means the more 'difficult' items are answered positively only by students who have high attitude and behaviour measures (for example, items 8, 12, 24, 22, 10, 11). Students with low attitude and behaviour measures do not answer these 'difficult' items positively.

**Ideal view for tasks**

Figure 6.10 shows that the ideal views for task items are moderately difficult. There are no hard expectation of tasks corresponding to the high attitude and behaviour measures and there are no easy items corresponding to the low attitude and behaviour measures. All ideal items are easier than their corresponding behaviour items.
<table>
<thead>
<tr>
<th>LOCATION</th>
<th>STUDENTS</th>
<th>ITEM DIFFICULTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High measures of attitude and behaviour</td>
<td>Hard item</td>
</tr>
<tr>
<td>2.0</td>
<td>X</td>
<td>TRCexp11 TRCexp19 TRCexp21 TRCexp23</td>
</tr>
<tr>
<td>1.0</td>
<td>XXXXXXXX</td>
<td>TGexp1 TGexp9</td>
</tr>
<tr>
<td>0.0</td>
<td>XXXXXXXXX</td>
<td>TRCexp7</td>
</tr>
<tr>
<td>-1.0</td>
<td>XXXXXX</td>
<td>TGexp17</td>
</tr>
<tr>
<td>-2.0</td>
<td>X</td>
<td>TGexp5</td>
</tr>
<tr>
<td>-3.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-4.0</td>
<td>X</td>
<td>TGexp3</td>
</tr>
<tr>
<td>-5.0</td>
<td>Low measure of attitude and behaviour</td>
<td>Easy item</td>
</tr>
</tbody>
</table>

X = 2 Persons

**Figure 6.10** Person item map (attitude and behaviour measures versus item difficulties, for ideal expectations for tasks in classroom interaction) (300 students and 12 items)

Note: (For items, please refer to Table 6.4)

1. TGexp refers to stem-items 1 to 6 (ideal expectation for task for group work).
2. TMexp refers to stem-items 7 and 8 (ideal expectation for task for meaning).
3. TRCexp refers to stem-items 9 to 12 (ideal expectation for task for reading comprehension).
Expectations (ideals) for relationships.

Figure 6.11 shows that the ideal expectations for relationship items are moderately difficult. There are no hard and very hard items corresponding to the high attitude and behaviour measures. There are no easy items corresponding to the low attitude and behaviour measures. Not all expectations are easier than the behaviours and some are equal within the error of measurement.

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>STUDENTS</th>
<th>ITEM DIFFICULTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>High measures of attitude and behaviour</td>
<td></td>
<td>Hard items</td>
</tr>
<tr>
<td>2.0</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XXX</td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td>XXXXXXX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXXXX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXXXXX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXXXXXX</td>
<td></td>
</tr>
<tr>
<td>XXXXXXXXXXXXXXXXXXX</td>
<td>RelaStu/TeaExp37</td>
<td>RelaStu/TeaExp39</td>
</tr>
<tr>
<td>0.0</td>
<td>XXXXXXXXXXXXXXXXXXX</td>
<td>RelaStu/StuExp29</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXXXXXXXX</td>
<td>RelaStu/TeaExp33</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXXXXXXXX</td>
<td>RelaStu/StuExp27</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXXXXXXXX</td>
<td>RelaStu/StuExp25</td>
</tr>
<tr>
<td>-1.0</td>
<td>XXX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XXX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XX</td>
<td></td>
</tr>
<tr>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>-2.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-3.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-4.0</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>-5.0</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Low measures of attitude and behaviour | Easy items |

Figure 6.11 Person item map (attitude and behaviour measures versus item difficulties for student ideal expectations for relationships) (300 students and 8 items)

Note: (For items, please refer to Table 6.4)

1. RelaStu/StuExp refers to stem-items 13 to 15 (ideal expectation for student/student relationship).
2. RelaStu/TeaExp refers to stem-items 16 to 20 (ideal expectation for student/teacher relationship).
Behaviour on tasks,

Figure 6.12 shows that behaviours on the task items are moderately difficult. There are no hard task items corresponding to the high attitude and behaviour measures, and there are no easy task items corresponding to the low measures. All the behaviour items are harder than their corresponding ideal expectation items.

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>STUDENTS</th>
<th>ITEM DIFFICULTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>High measures of attitude and behaviour</td>
<td>Hard items</td>
<td></td>
</tr>
<tr>
<td>2.0</td>
<td>X</td>
<td>Tgbeh8 Tgbeh10 Tgbeh12 TRCbeh20 TRCbeh24</td>
</tr>
<tr>
<td>1.0</td>
<td>XXXXXX</td>
<td>TRCbeh22</td>
</tr>
<tr>
<td>0.0</td>
<td>XXXXXXXXXX</td>
<td>Tgbeh4 Tgbeh6</td>
</tr>
<tr>
<td>0.0</td>
<td>XXXXXXX</td>
<td>Tgbeh2 Tmbeh15 TRCbeh18</td>
</tr>
<tr>
<td>-1.0</td>
<td>XXX</td>
<td>TRCbeh14</td>
</tr>
<tr>
<td>-2.0</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>-3.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-4.0</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>-5.0</td>
<td>Low measures of attitude and behaviour</td>
<td>Easy items</td>
</tr>
</tbody>
</table>

X = 2 Persons

Figure 6.12 Person item map (attitude and behaviour measures versus item difficulties for behaviour on tasks) (300 students and 12 items)

Note: (For items, please refer to Table 6.4)
1. Tgbeh refers to stem-items 1 to 6 (behaviour on tasks for group work)
2. Tmbeh refers to stem-items 7 and 8 (behaviour on tasks for meaning)
3. TRCbeh refers to stem-items 9 to 12 (behaviour on tasks for reading comprehension)
Behaviour for relationships.

Figure 6.13 shows that the behaviour relationship items are moderately difficult. There are no very hard behaviour items corresponding to the high attitude and behaviour measures and there are no easy items corresponding to the low measures.

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>STUDENTS</th>
<th>ITEM DIFFICULTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High measures of attitude and behaviour</td>
<td>Hard items</td>
</tr>
<tr>
<td>2.0</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td>XXXXXXX</td>
<td>RelaStu/TeaBeh38</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXX</td>
<td>RelaStu/TeaBeh36</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXX</td>
<td>RelaStu/TeaBeh40</td>
</tr>
<tr>
<td>0.0</td>
<td>XXXXXXXXXX</td>
<td>RelaStu/StuBeh30</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXX</td>
<td>RelaStu/StuBeh34</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXX</td>
<td>RelaStu/StuBeh28</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXX</td>
<td>RelaStu/StuBeh26</td>
</tr>
<tr>
<td>-1.0</td>
<td>XXX</td>
<td></td>
</tr>
<tr>
<td>-2.0</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>-3.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-4.0</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>-5.0</td>
<td>Low measures of attitude and behaviour</td>
<td>Easy items</td>
</tr>
</tbody>
</table>

X = 2 Persons

Figure 6.13  Person item map (attitude and behaviour measures versus item difficulties for behaviour on student relationships) (300 students and 8 items)

Note: (For items, please refer to Table 6.4)
1. RelaStu/StuBeh refers to stem-items 13 to 15 (behaviour for student/student relationship)
2. RelaStu/TeaBeh refers to stem-items 16 to 20 (behaviour for student/teacher relationship)
Category curve for good fitting item.

Figure 6.14  Item Category Curve for item 32 in the attitude and behaviour measure (good fitting item).

Note
1. Threshold 1 is about -1.1 logits.
2. Threshold 2 is about +0.5 logits.
3. Threshold 3 is about +2.0 logits.
4. The thresholds are ordered in correspondence with the response categories.

Item 32 is the ‘easiest’ item with a Chi Square Probability of fit to the measurement model of 0.92 which indicates an excellent fit to the model. For this item, the ‘difficulty’ is +0.49 which indicates that students found it moderately difficult to say *I can complete cloze exercises with the correct words*. Figure 6.14 shows that the Category 0 curve indicates that a person with an attitude and behaviour score of −6.0 logits has a probability of around 1.0 of answering in this category (never or rarely). Looking at the Category 1 curve, with an attitude and behaviour towards reading comprehension score of −6.0, the probability of answering in this category (mostly not) is around zero, while an attitude and behaviour towards reading comprehension score of around −0.5 corresponds with a probability near 0.52. In the category 2 curve, with an
attitude and behaviour towards reading comprehension score of \(-3.0\), the probability of answering in this category (sometimes) is around 0, while with an attitude and behaviour towards reading comprehension score of around \(+1.2\) corresponds to a probability near 0.52. In the category 3 curve, with an attitude and behaviour towards reading comprehension score of \(-1.0\) the probability of answering in this category (always and nearly always) is around 0, while an attitude and behaviour towards reading comprehension score of around \(+7.0\) corresponds with a probability of around 1.0. Examination of the category curve for item 32 illustrates that thresholds for this item are ordered (-1.1 to +0.5 to +2.0 logits) and that increasingly higher measures of attitude and behaviour towards reading comprehension are required, in order to respond to this item in the higher categories. That is, in order to respond positively to the item *I can complete cloze exercises with the correct words* in the category of all the time, students need to have higher attitude and behaviour towards reading comprehension scores than to respond positively in the categories of never or rarely, or mostly not, sometimes, or always and nearly always.

Item 58 is one of the worst fitting items with a chi square probability near zero which indicates a poor fit to the model and a location of \(-0.71\). This indicates students found it ‘easy’ to say *I learn more when I study in small groups*. Examination of the category curve for item 58 (see Figure 6.15) illustrates that the thresholds for this item are ordered satisfactorily, so that increasingly higher measures of attitude and behaviour are required, in order to respond to this item in the higher categories.
Figure 6.15  Item Category Curve for item 58 attitude and behaviour measure (not-so-good fitting item).

Note
1. Threshold 1 is about -1.8 logits.
2. Threshold 2 is about -0.2 logits.
3. Threshold 3 is about -0.1 logits.
4. The thresholds are ordered in correspondence with the response categories.

Figure 6.15 shows that the category 0 curve indicates that a person with attitude and behaviour score of -4.0 logits has around 0.9 probability of answering in this category (never or rarely). Looking at the category 1 curve, with an attitude and behaviour score of -4.0 the probability of answering in this category (mostly not) is around 0.1, while an attitude and behaviour score of around -1.1 corresponds with a probability near 0.45. In the category 2 curve, with an attitude and behaviour towards reading comprehension score of -3.5, the probability of answering in this category (sometimes) is around 0, while with an attitude and behaviour towards reading comprehension score of around -0.1 corresponds to a probability near 3.1. In the category 3 curve, with an attitude and behaviour towards reading comprehension score of -2.5, the probability of answering in this category (always and nearly always) is
around 0, while an attitude and behaviour towards reading comprehension score of around 3 corresponds with a probability of around 0.95. Examination of the wording of items may indicate a possible reason for disordered thresholds or uneven distribution of responses. In the case of item 58, the nature of its content provides a possible reason for students responding contrary to the model. It is possible that many students learn more when they study in small groups, and this may be in part through its being an expectation within the school. However, in the ideal mode, some students who have a high attitude and behaviour towards reading comprehension may wish that they did not need to study in small groups. They may believe that, ideally, they could study by themselves. For this reason, they may respond in a lower category of mostly not, rather than the expected always and nearly always.

**Summary**

A Rasch measurement model was used to create a linear scale of English reading comprehension, and a linear scale of students' attitude and behaviour towards reading comprehension.

In the first measure, thirty-two test items fitted the measurement model and were aligned from easy to hard to form an interval level scale. The reading comprehension items measure a trait for reading comprehension that is unidimensional, and is based on three aspects: understanding the main facts, sequencing the order of ideas, and understanding the meaning from English reading tasks using pictures.

In the second measure, attitude and behaviour, forty items (20 about expectations (ideals) and 20 about behaviours) fitted the measurement model and were aligned along the scale based on two factors: Teaching and learning activities (tasks), and classroom interaction. Tasks and interactions are related, and were calibrated on the same scale for both ideal expectations and behaviours. Ideal expectations are mostly easier to hold at a high level than actually achieve.

It is revealed from the analysis that the data on the two variables, English reading comprehension, and attitude and behaviour towards learning English, are valid and reliable, that the models behind the reading comprehension test and the questionnaire are supported, and that good linear scales were created from which valid and reliable inferences can be made.

The next chapter presents the results of the experiment (Phase 2).
CHAPTER SEVEN

DATA ANALYSIS (PHASE 2):
THE EXPERIMENTAL RESULTS

This chapter provides a description of the results of the data analysis for the reading comprehension experimental results, and the students’ attitude and behaviour experimental results. The data were analysed with the SPSS computer program (Pallant, 2001), and one way ANOVA results are presented through tables and descriptive text. Tables 7.1 and 7.2 contain the conclusion of the reading comprehension result. Tables 7.3 and 7.4 contain the reading comprehension pretest result and the reading comprehension posttest result. Table 7.5 shows the reading comprehension interaction effect. Figure 7.1 provides the reading comprehension mean scores in graphical format. Then, tables 7.6 and 7.7 contain data and statistics relating to the attitude and behaviour measures. Tables 7.8 and 7.9 contain the attitude and behaviour pretest and posttest results. Table 7.10 contains the attitude and behaviour questionnaire interaction effect. Figure 7.2 contains the attitude and behaviour mean scores towards reading comprehension in graphical format.

The two research questions related to this chapter are: (1) Do the students improve their English reading comprehension as a result of using cooperative learning compared with when they are taught using the Thai communicative method?; and (2) Do students improve their attitude and behaviour to learning English when taught by cooperative learning compared to when they are taught by the Thai communicative method? The linear scales described in the previous chapter and constructed using Rasch analysis were used as the measures in the experiment described in this chapter to answer these two research questions.
Reading Comprehension measure

Posttest versus pretest results for the experimental group

Table 7.1

One way ANOVA: Statistics for the reading comprehension experiment measure by pretest and posttest for the experimental group (N=48)

<table>
<thead>
<tr>
<th></th>
<th>PRETEST</th>
<th>POSTTEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>-0.95</td>
<td>+0.89</td>
</tr>
<tr>
<td>SD</td>
<td>0.63</td>
<td>0.74</td>
</tr>
<tr>
<td>CI</td>
<td>0.68</td>
<td>1.10</td>
</tr>
<tr>
<td>SE</td>
<td>0.09</td>
<td>0.11</td>
</tr>
<tr>
<td>N</td>
<td>48</td>
<td>48</td>
</tr>
</tbody>
</table>

Note 1. CI = confidence interval.
2. SE = standard error of the measure of attitude and behaviour towards reading comprehension.
3. X = mean, SD = standard deviation.

The students in the experimental group did significantly better on the posttest than the pretest in regards to the reading comprehension measure (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.
Posttest versus pretest results for the control group.

Table 7.2

Statistics for the reading comprehension measure by pretest and posttest for the control group

<table>
<thead>
<tr>
<th></th>
<th>PRETEST</th>
<th>POSTTEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \bar{X} )</td>
<td>(-0.88)</td>
<td>(-0.08)</td>
</tr>
<tr>
<td>SD</td>
<td>0.49</td>
<td>0.56</td>
</tr>
<tr>
<td>CI</td>
<td>(-0.25)</td>
<td>0.08</td>
</tr>
<tr>
<td>SE</td>
<td>0.07</td>
<td>0.08</td>
</tr>
<tr>
<td>N</td>
<td>48</td>
<td>48</td>
</tr>
</tbody>
</table>

CONTROL

Note 1. CI = confidence interval.
2. SE = standard error of the measure of reading comprehension.
3. \( \bar{X} \) = mean, SD = standard deviation.

The students in the control group did significantly better on the posttest than the pretest in regards to reading comprehension in English (\( F = 53.25, df = 1, 94, p < 0.001 \)). This means that the reading comprehension of the students learning under the Thai communicative approach was significantly better at the end of the teaching period than at the beginning. Eta squared is 0.38, a large effect size.

Pretest versus pretest results for the experimental versus the control group.

Table 7.3

One way ANOVA: The reading comprehension pretest results for the experimental group versus the control groups.

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>0.13</td>
<td>1</td>
<td>0.13</td>
<td>0.40</td>
<td>p = 0.53</td>
</tr>
<tr>
<td>Within Groups</td>
<td>30.33</td>
<td>94</td>
<td>0.32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>30.46</td>
<td>95</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The students in the experimental group were not significantly better than those in the control group in regards to reading comprehension in English \((F = .40, \text{df} = 1, 94, p = .53)\), as measured for reading comprehension at the beginning of the experiment.

Posttest versus posttest results for the experimental versus the control group.

Table 7.4

One way ANOVA: The reading comprehension posttest results for the experimental group versus the control groups.

<table>
<thead>
<tr>
<th>Source of Sum of Mean</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>22.84</td>
<td>1</td>
<td>22.84</td>
<td>53.23</td>
</tr>
<tr>
<td>Within Groups</td>
<td>40.34</td>
<td>94</td>
<td>0.43</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>63.18</td>
<td>95</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The students in the experimental group were significantly better than those in the control group \((F = 53.23, \text{df} 1, 94, p < 0.001)\) at the end of the experiment. The conclusion is that the students' reading comprehension under the cooperative learning method was significantly better at the end of the experiment than those taught by the Thai communicative method. Eta squared is 0.38, a large effect size.

Interaction effect

Table 7.5

The reading comprehension interaction effect of the experimental versus the control groups.

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>12.561</td>
<td>1</td>
<td>12.561</td>
<td>22.961</td>
<td>.000</td>
<td>.196</td>
</tr>
<tr>
<td>VAR00001</td>
<td>9.779</td>
<td>1</td>
<td>9.779</td>
<td>17.874</td>
<td>.000</td>
<td>.160</td>
</tr>
<tr>
<td>Error</td>
<td>51.425</td>
<td>94</td>
<td>.547</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7.5 indicates that there is a significant difference between the experimental and the control group. The conclusion is that the experimental group
achieved better than the control group after being given the treatment. There is a larger effect in cooperative learning than the Thai communicative method so, in technical terms, there was an interaction between them.

Figure 7.1  Graph of reading comprehension means (Pretest/posttest v experimental and control groups).

Figure 7.1 shows the mean of reading comprehension measures by experimental/control groups and pretest/posttest. The first line represents the control group, the other represents the experimental group. Both lines increased but the control group line slowly increased while the experimental group line rapidly increased. This means that the experimental method exerts a significantly larger effect than the control method on reading comprehension.
Attitude and behaviour measure

Posttest versus pretest results for the experimental group

Table 7.6

Statistics for the attitude and behaviour measure by pretest and posttest, the experimental group (n=48)

<table>
<thead>
<tr>
<th></th>
<th>PRETEST</th>
<th>POSTTEST</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EXPERIMENTAL</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GROUP</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>X</strong></td>
<td>1.46</td>
<td>2.87</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>0.54</td>
<td>0.78</td>
</tr>
<tr>
<td><strong>CI</strong></td>
<td>2.65</td>
<td>3.10</td>
</tr>
<tr>
<td><strong>SE</strong></td>
<td>0.07</td>
<td>0.11</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>48</td>
<td>48</td>
</tr>
</tbody>
</table>

Note
1. CI = confidence interval.
2. SE = standard error of the measure of attitude and behaviour towards reading comprehension.
3. \( \bar{X} \) = mean, SD = standard deviation.

Students in the experimental group did significantly better on the posttest than the pretest for the experimental group in regards to attitude and behaviour towards learning English (\( F = 56.85, \text{df} = 1, 94, p <0.001 \)). This means that the attitude and behaviour of students learning English as a second language under the cooperative learning method was significantly better at the end of the teaching experiment than at the beginning. The effect size, eta squared, equals 0.52 and, under Cohen's (1988) rules, this is a large effect.
Posttest versus pretest results for the control group

Table 7.7
Statistics for the attitude and behaviour measure by pretest and posttest for the control group (N=48)

<table>
<thead>
<tr>
<th></th>
<th>PRETEST</th>
<th>POSTTEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONTROL GROUP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>0.98</td>
<td>1.87</td>
</tr>
<tr>
<td>SD</td>
<td>0.33</td>
<td>0.50</td>
</tr>
<tr>
<td>CI</td>
<td>1.72</td>
<td>2.01</td>
</tr>
<tr>
<td>SE</td>
<td>0.05</td>
<td>0.07</td>
</tr>
<tr>
<td>N</td>
<td>48</td>
<td>48</td>
</tr>
</tbody>
</table>

Note 1. CI = confidence interval.
2. SE = standard error of the measure of attitude and behaviour towards reading comprehension.
3. X = mean, SD = standard deviation.

The students in the control group did significantly better on the posttest than the pretest for the control group, in regards to attitude and behaviour towards learning English (F = 56.85, df = 1, p < 0.001). This means the attitude and behaviour of students learning English as a second language under the Thai communicative method was significantly better at the end of the teaching than at the beginning. The effect size, eta squared, equals 0.53 and under Cohen’s (1988) rules, this is a large effect.
Pretest versus pretest results for the experimental versus the control group.

Table 7.8
One way ANOVA: The students' attitude and behaviour questionnaire pretest results for the experimental versus the control group.

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>5.48</td>
<td>1</td>
<td>5.48</td>
<td>27.48</td>
<td>p&lt; 0.001</td>
</tr>
<tr>
<td>Within Groups</td>
<td>18.75</td>
<td>94</td>
<td>0.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>24.23</td>
<td>95</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The students in the experimental group were significantly better than those in the control group \((F = 27.48, \text{df } 1, 94, \text{p } < 0.001)\), before the experiment was begun, as measured by the attitude and behaviour questionnaire. Eta squared is 0.23, a large effect size.

Posttest versus posttest results for the experimental versus the control group.

Table 7.9
One way ANOVA: The students' attitude and behaviour questionnaire posttest results for the experimental versus the control group.

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>24.40</td>
<td>1</td>
<td>24.40</td>
<td>56.85</td>
<td>p&lt; 0.001</td>
</tr>
<tr>
<td>Within Groups</td>
<td>40.35</td>
<td>94</td>
<td>0.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>64.75</td>
<td>95</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The students in the experimental group were significantly better than those in the control group \((F = 56.85, \text{df } =1, 94, \text{p } < 0.001)\). Eta squared is 0.38, a large effect size. The conclusion is that the students' attitude and behaviour towards reading...
comprehension for the experimental group was better than the students’ attitude and behaviour for the control group, at the end of the experiment.

**Interaction Effect**

Table 7.10

The attitude and behaviour questionnaire interaction effect between the experimental and control groups.

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>617.624</td>
<td>1</td>
<td>617.624</td>
<td>1427.803</td>
<td>.000</td>
<td>.938</td>
</tr>
<tr>
<td>VAR00001</td>
<td>26.507</td>
<td>1</td>
<td>26.507</td>
<td>61.279</td>
<td>.000</td>
<td>.395</td>
</tr>
<tr>
<td>Error</td>
<td>40.662</td>
<td>94</td>
<td>.433</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 7.10 indicates that there is a significant interaction effect between the experimental and the control groups. The conclusion is that both the experimental group and the control group improved their attitude and behaviour after their respective teaching methods (cooperative learning and Thai communicative teaching of ESL) but the experimental group improved significantly more than the control group.

![Graph of Attitude and Behaviour towards reading comprehension means by pretest and posttest for experimental and control groups.](image)

**Figure 7.2** Graph of Attitude and Behaviour towards reading comprehension means by pretest and posttest for experimental and control groups.
In Figure 7.2, the bottom line represents the control group, and the other represents the experimental group. Both lines increased with the experimental group line increasing more than the control group line. This means the students have responded significantly more to the cooperative learning method than the Thai communicative teaching method, as measured by their attitude and behaviour.

**Summary of results**

The results of the experiment are summarised.

**Reading Comprehension measure**

1. Students improved their reading comprehension in English as a second language under both the cooperative learning and Thai communicative methods of teaching.
2. Students improved their reading comprehension in English as a second language under the cooperative learning method significantly more than under the Thai communicative method.

**Attitude and behaviour measure**

3. Students improved their attitude and behaviour towards learning English as a second language under both the cooperative learning and Thai communicative methods of the teaching.
4. Students improved their attitude and behaviour towards learning English as a second language significantly more under the cooperative learning method than the Thai communicative method of teaching.

The next chapter presents the results of the data analysis (phase 3).
CHAPTER EIGHT

ANALYSIS OF GROUP DISCUSSIONS AND JOURNAL DATA

This chapter begins with the results of the group discussion. The main purpose in using a group discussion process is to gain information about the attitude and behaviour of the teachers involved in teaching ESL through cooperative learning and traditional teaching methods. This should then lead to recommendations about teaching English reading comprehension to Prathom 6 students and to answering research question 3 (What are Thai trainee teachers self-reported attitudes and behaviour to teaching English using cooperative learning and the Thai communicative teaching methods?) and research question 4 (What recommendations can be made for better classroom implementation in English reading comprehension in the primary schools by teachers?). This chapter provides the observations from the trainee teachers’ journals and the assessment feedback for cooperative learning in the experimental group. The journals were written in Thai (see appendix F) by the trainee teachers themselves while they were teaching in the experimental group during the sixteen periods. The entries have been collated as problems, arguments, and solutions for the entire period of the course. Tables 8.2, 8.3, and 8.4 summarise the trainee teachers’ observations towards students’ attitude and behaviour. These tables are presented as a 40 item checklist of the responses of the three trainee teachers of the three schools throughout the sixteen periods. Group activities are separated into teaching/learning activities and classroom interactions.

Group discussion data

Group discussions

In this study, there was a different role for the group meeting than what is usually expected, in that it was part of the management and evaluation process of the experiment. For this reason, the information that was gathered from the English reading comprehension method in this research is concerned also with research management, and the aim of the training. The four stage agenda for the group discussions was based on the TEST (Trigger, Explore, Strategies and Treat) procedure of Matthews (1993).
The first group discussion before the actual teaching consists of Trigger and Explore. The second discussion, after the practice teaching, consists of Strategies and Treat. The three regular teachers and the three trainee teachers’ names used in this report are fictitious names under the Ethics approval from Edith Cowan University. The results are reported below.

Trainee teachers comments about the experimental method of teaching.

The first group discussion.

Before the teaching: Management meeting

When: 3 Jan 2002          Where: At Wat Chong Lom

Who: Achan Tiwa
    Achan Porn
    Achan Urarat

Trainee teacher: Miss Smorn
    Miss Sukjai
    Miss Yaimai

Researcher: Miss Sutaporn Chayarathsee

The researcher explained to the three regular teachers what should be done during the research and asked for their help for the three trainee teachers while they were doing the experiment. The researcher explained the benefits which were expected to be related to the achievement of the students in English reading comprehension and the trainee teachers’ benefit would be in the experience of teaching a new methodology. At the first group discussion, the three regular teachers did not know what cooperative learning was and did not agree with the usefulness of it. For example:

"We haven’t heard about it. We are not interested in it.”

(Teachers A, B, and C)

“I don’t understand what cooperative learning was. I don’t understand even the name of the process and don’t think that this new methodology, with new processes like cooperative learning, could change the students’ achievement.”

(Teacher C)
“I am worried about how well we would be able to teach the new methodology (cooperative learning).”

(Trainee teacher A)

“We also feel eager but ready to try because we would like to know the new methodology of teaching and participating in classroom research.”

(Trainee teacher B)

From the National Educational Act 1999, the researcher explained about the classroom research, with effects on the students’ achievement, and teacher behaviour. The activities in classroom research are based on the purpose of the research.

“The purpose of this research is to see the effects of two different approaches and class management styles to reading comprehension outcomes and attitudes to cooperative learning.”

(Researcher)

One of the teachers in the focus groups did not agree with the use of authentic materials which come from outside the text book. For example:

“I don’t quite agree with the use of authentic materials. I think it is illegal to choose the outside text, and not use the text book that the school chose.”

(Teacher A)
The second group discussion

After the teaching

When: 28 March 2002  Where: At Wat Chong Lom

Who: Achan Tiwa
  Achan Porn
  Achan Urarat

Trainee teacher: Miss Smorn
  Miss Sukjai
  Miss Yaimai

Researcher: Miss Sutaporn Chayarathee

The experiment was completed and all student tests were analysed. It was found that teaching and learning activities and classroom interactions were relevant factors influencing English reading comprehension development. The three trainee teachers were happy because the results were good and finally they really accepted the method of teaching ESL through cooperative learning. They also agreed that they should change their teaching behaviour and use the new methods, like cooperative learning. For instance:

“I think that it’s time we changed our teaching behaviour using new methods, like cooperative learning.”

(Teacher C)

“Some students told me that they like their English teacher so much and they like the way their English teacher teaches them.”

(Trainee teacher C)

“I like the idea that I could study what I wanted to learn about. It was
motivating because I knew it would affect my practice as a teacher. It could prepare me for the teaching profession.”

(Trainee Teacher A)

“The experiment helped us to grow in confidence in our ability to implement this model of instruction.”

(Trainee Teacher B)

and another regular teacher said:

“Have the trainee teachers trained in cooperative learning methods as part of their regular teacher training.”

(Teacher A)

There are many aspects that affect the students using the cooperative learning method. They seem to have become capable of working on their own. They can help and support each other’s efforts to learn. Interactions between students in groups was very easy. Students at Wat Don-Ta-Lung had the least improvement in attitude and behaviour but they seem to have enjoyed the activities in task work. The students like the way that they had learned to read English as it increased their motivation to learn. Cooperative learning helped the students to become good leaders and they presented their work in front of the class very well. These are examples.

“คุณครูคิดว่านักเรียนชอบวิธีสอนแบบการเรียนรู้แบบสังคมร่วมแรงร่วมใจมั้ยครับ”

“Do you think your students like the cooperative learning method?”

(Researcher)

“ชอบครับ โดยเฉพาะนักเรียนชอบการสอนการอ่านภาษาอังกฤษในวิธีนี้และยังชอบเพราะนักที่ได้รับ ทำให้นักเรียนชอบคือมีความกระตือรือร้นที่จะเรียนและมันก็เป็นการสอนแบบใหม่ด้วย”

“Students especially like the way they had now learned to read English.

My students also like it because the learning role makes them eager to learn,
and it’s also new to them.  

(Teacher A)

“นักเรียนทำงานได้เสร็จตามเวลาค่ะ”
“Students do the work and they can finish the work on time”

(Trainee teacher C)

“นักเรียนชอบเรียนเป็นกลุ่มเล็กๆ ด้วยค่ะเพราะพวกมันทำให้เข้าใจโจทย์เรียนได้ง่ายขึ้น”
“Students like to study in small groups because they can understand easily.”

(Trainee Teacher A)

“นักเรียนของคิ้นสามารถเดิมคำในช่องง่วงได้และสามารถตอบคำถามได้อย่างท่องร่างแบบ
ฝึกหัด”
“My students can complete the cloze exercise using correct words and they can answer the reading questions from the task given.”

(Trainee Teacher B)

“ตู้เมื่อนานวันนักเรียนของคิ้นกลายเป็นผู้นำกลุ่มได้ดีและเข้าใจสามารถบอกมาละผลงานหน้า
ชานได้ดีค่ะค่ะคะ”
“It was shown that my students can become good leaders and can present the work in front of the class very well.”

(Teacher B)

“ในช่วงไม่แรกๆ นักเรียนยังไม่ค่อยคุ้นกับการเรียนแบบการเรียนการสอนแบบร่วมแรงร่วม
ใจ ซักเท่าไหร่ แต่หลังจากนั้นถึงสุบสนานกับการเรียนในที่สุด”
“Students weren’t familiar with cooperative learning for the first period, but finally they learned to enjoyed it.”

(Teacher C)
"My students seem to have become capable of working on their own. They can help and support each other’s efforts to learn.”

(Trainee Teacher B)

“Yes. Interaction between students in groups was very easy for them.”

(Trainee Teacher A)

"My students had the least improvement but they seem to have enjoyed the activities in task work.”

(Teacher C)

Some exercises were suggested to show that achievement of results was easier than expected when working in groups on tasks, and in attitude and behaviours, the expectations were often more difficult than the actual behaviours. For example:

“What was interesting was that often the expectations of difficulties were greater than the actual task performance, meaning that students were not confident before doing the tasks.”

(Researcher)

The careful choice of materials is important to the final outcome of better performance. These are examples:
The research question.

What recommendations can be given for better classroom implementation in English reading comprehension in the primary schools based on this group discussion by some of those involved in implementing the approach?

The answer to the research question is that for better classroom implementation in English reading comprehension in primary schools, cooperative learning should be used in teaching English because it has good effects on students. It makes them capable of working on their own, and the group roles help them to support each other to learn. During their studying, there is useful interaction among the students which makes them eager to learn and become good learners and leaders. The results from the three schools showed that cooperative learning could help their English reading achievement. Although there will be some negative reactions to the idea at first, cooperative learning should be implemented in all teacher training courses because it prepares trainee English teachers for the teaching profession. Due attention should be paid, however, to the careful selection and writing of appropriate tasks and exercises.
Journal data

Trainee Teachers' journals entries about the experimental method of teaching.

The trainee teachers were asked to record their observations in Thai (see Appendix F). The observation form they used recorded their attitudes and behaviour in the teaching, the problems they faced, and how to solve those problems. The table of trainee teachers' journal observations (see table 8.1 and 8.2) shows how frequently each aspect was evident through the 16 periods. The journal contents were based on the teaching/learning activities and classroom interactions. A summary of the comments with problems and the strategies undertaken to solve the problems are shown under each topic heading.

Period 1-2  Pim's Family and their Occupations.

The teacher explained the cooperative learning method in the first period. Students did not understand why they should learn like this, because the process confused them, so teachers explained it once more and stuck group-role charts on the blackboard. Students from the third school felt excited, because this was new to them and they felt enthusiastic with the new methodology. The aspects most frequently recorded from the teachers' observations at the three schools in these two periods, were students liked to listen to their friends' ideas about what they read. They learned more when they studied in small groups. They learned a lot from the teacher, and they could discuss their hobbies and their future plans with their teacher.

Problem : The trainee teachers found that the students did not become familiar with the role of cooperative learning quickly enough.
Solution : The trainee teachers explained the important things about cooperative learning group in Thai.
Problem : Students took a lot of time to form their groups, thus reducing the teaching time.
Solution : The teachers solved the problem by giving assignments (exercises) as homework.
Problem : Students felt reluctant to do the exercises in groups.
Solution : The teachers motivate by offering them rewards, or extra marks, if they could do their best work.
Period 3-5  Personal Feelings.

Students liked the pictures expressing personal feelings that teachers presented to them. Teachers used gesture to explain the new words. Students could do exercise 1 and said that they liked this new methodology. The aspects most frequently recorded through periods 3-5, were students liked to listen to their friends' ideas about what they read, they liked to do activities in groups, and they learned more when they studied in small groups.

Problem : The trainee teachers at Wat Chong Lom and Wat Phikul Tong schools found students could not pronounce the words "lazy" "bored" properly.

Solution : Teachers drilled students very frequently, one by one.

Problem : The teaching time was not enough (Wat Phikul Tong school).

Solution : Trainee teacher said her students liked the pictures and they tried to remember the "personal feeling" words. These helped them to finish the exercises very quickly before the time was up.

There were no problems in the third school.

Period 6-8  Potato Cakes.

Students were interested in cooking because cooking is an activity that involves their everyday life. They understood the grammar easily because of using charts, pictures and real objects. The aspects most frequently recorded through periods 6-8 were students liked to listen to their friends' ideas about what they read, they liked to do activities in groups, they could understand better when doing activities with their friends, they liked to lead their friends in doing activities in the reading task, they liked learning vocabulary from the pictures, they could find the correct answers to the reading questions, they could discuss their hobbies and their future plans with the teacher, and they liked the way their teacher teaches them English reading.

Problem : Some students took too much time in using the dictionary. They initially had no skill in using a dictionary.

Solution : Trainee teacher gave assignments in using a dictionary.
Problem : Students could not guess the meaning of some pictures.
Solution : Teachers showed them the real objects.
Problem : Students could not explain their opinions about cooking in English.
Solution : Teachers let them discuss among themselves in Thai before writing their opinions in English in the worksheet.

Period 9-11

The Special Bird.

Students were interested in the picture of the ostrich and knew immediately what was it because the picture is very clear. Students could present the work in front of class very well. They could guess the meaning from pictures. The aspects most frequently recorded through periods 9-10 were students liked to listen to their friends' ideas about what they read, they liked to do activities in groups and they could understand better when doing activities with their friends, they liked to lead their friends in doing activities in the reading task, they liked learning vocabulary from the pictures, they could complete the cloze exercise with the correct words, and they could find the correct answers to the reading questions, and they liked to talk or study in groups like this.

Problem : Some of the students pronounced words in the story with difficulty.
Solution : Trainee teacher helped them by repeating the correct pronunciation many times.
Problem : There was not enough time to do individual work.
Solution : Teacher gave assignments as homework.

Period 12-13

Sickness.

Students performed their own roles very well. They understood how sick people behave and the effects of sickness. The aspects most frequently recorded through periods 12-13 were students liked to listen to their friends' ideas about what they read, they liked to do activities in groups, they could understand better when doing activities with their friends, they liked to lead their friend in doing activities in the reading task, they liked learning vocabulary from the pictures, they could guess the meaning of the
words from pictures, they could solve the problem/puzzle in reading assignments, they
could complete the cloze exercises with the correct words, they liked to talk or study in
groups like this, they could discuss their hobbies and their future plans with their
teacher, and they liked the way of their teacher teaches them English reading.

There were no problems with this lesson because they had studied about
sickness once before in the normal classroom and the words used in this lesson were
close to their everyday life use.

Period 14  Sickness (continue from period 12-13).

Students could remember the words that they had learnt from the last period and
could pronounce them properly, except the word "dentist". They could complete all the
activities arising from the text. The aspects most frequently recorded happening were
students liked to listen to their friends' ideas about what they read, they liked to do
activities in groups, understand better when doing activities with their friends, they did
the work, they could finish the work on time, and could make notes to summarize the
group's idea, they liked to lead their friends in doing activities in the reading task, liked
learning vocabulary from the pictures, they could guess the meaning of the words from
pictures, could solve the problem/puzzle in reading assignment and could put the story
into the correct order. Moreover, students could complete the cloze exercise with the
correct words that they learned when they studied in small groups, they liked to talk or
study in groups like this, they learned a lot from the teacher, liked their English teacher
so much, could discuss their hobbies and their future plans with their teacher, they liked
the way their teacher teaches them English reading and could talk informally about the
reading assignment to their teacher.

There were no problems with this lesson. Students suggested the reason they
could manage the activities was that they learned a lot about the medicine from the
picture of the label. Trainee teacher (from Wat Chong Lorn) mentioned that students
performed their own role very well and students in groups listened to their friends' ideas
while doing their exercises.

The students were interested in the lesson because the market is in their own province. Students could pronounce the words properly. They could guess the meaning from the pictures. The aspects most frequently recorded in these periods were students liked to listen to their friends’ ideas about what they read, they liked to do activities in groups, they could understand better when doing activities with their friends, they did the work and they could finish the work on time, they could make notes to summarize the group’s ideas, they liked to lead their friends in doing activities in the reading task, they liked learning vocabulary from the picture. Moreover, students thought that they could guess the meaning of the words from pictures, they could solve the problem/puzzle in reading assignments, they could put the story into the correct order, completed the cloze exercise with the correct words, liked their English teacher so much, they could discuss their hobbies and their future plans with their teacher, and liked the way their teacher teaches them English reading.

Problem : Students could not pronounce “vegetable” properly.
Solution : Students practiced the word many times until they could pronounce it.

Trainee teachers’ observations are summarised in table 8.1 and 8.2. They present the frequency of group activities through the 16 periods only for the group using the cooperative learning method. Tables 8.1 and 8.2 show item numbers, group activities, trainee teacher, school, lesson plans for sixteen period, and total score. In the group activity of table 8.1, there were 12 items in teaching/learning activities and in table 8.2 there were 6 items of classroom interactions.
Table 8.1  Trainee teachers’ observation (Journal was kept for experimental group only).

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Group activity (Teaching/Learning Activities)</th>
<th>Trainee Teacher</th>
<th>School</th>
<th>Lesson Plan for sixteen Periods based on Cooperative Learning</th>
<th>Total score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Students like to listen to their friends’ ideas about what they read.</td>
<td>1</td>
<td>1</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>16</td>
</tr>
<tr>
<td>2.</td>
<td>Students like to do activities in groups.</td>
<td>1</td>
<td>1</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>15</td>
</tr>
<tr>
<td>3.</td>
<td>Students can understand better when doing activities with their friends.</td>
<td>1</td>
<td>1</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>14</td>
</tr>
<tr>
<td>4.</td>
<td>Students do the work and they can finish the work on time.</td>
<td>1</td>
<td>1</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>12</td>
</tr>
<tr>
<td>5.</td>
<td>Students can make notes to summarize the group’s ideas.</td>
<td>1</td>
<td>1</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>10</td>
</tr>
<tr>
<td>6.</td>
<td>Students like to lead their friends in doing activities in the reading task.</td>
<td>1</td>
<td>1</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>13</td>
</tr>
<tr>
<td>7.</td>
<td>Students like learning vocabulary from the pictures.</td>
<td>1</td>
<td>1</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>15</td>
</tr>
</tbody>
</table>
Table 8.1 Trainee teachers’ observation (Journal was kept for experimental group only) (continued).

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Group activity (Teaching/Learning Activities)</th>
<th>Trainee Teacher</th>
<th>School</th>
<th>Lesson Plan for sixteen Periods based on Cooperative Learning</th>
<th>Total score</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td>Students can guess the meaning of the words from pictures.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Students can solve the problem/puzzle in reading assignments.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Students could put the story into the correct order.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Students can complete the cloze exercise with the correct words.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Students can find the correct answers to the reading questions.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 8.2  Trainee teachers’ observation (Journal was kept for experimental group only).

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Group activity (Classroom interaction)</th>
<th>Trainee Teacher</th>
<th>School</th>
<th>Lesson Plan for sixteen Periods based on Cooperative Learning</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Students learn more when they study in small groups.</td>
<td>1</td>
<td>1</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2.</td>
<td>Students have more opportunity to participate in activities among their friends.</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3.</td>
<td>Students like to talk or study in groups like this.</td>
<td>1</td>
<td>1</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>4.</td>
<td>Students learn a lot from the teacher.</td>
<td>1</td>
<td>1</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>5.</td>
<td>Students like their English teacher so much.</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>-</td>
<td>✓</td>
</tr>
<tr>
<td>6.</td>
<td>Students can discuss their hobbies and their future plans with their teacher.</td>
<td>1</td>
<td>1</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>7.</td>
<td>Students like the way of their teacher teaches them English reading.</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8.</td>
<td>Students can talk informally about the reading assignment to their teacher.</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Tables 8.1 and 8.2 show that the three trainee teachers used the group activities through all sixteen experimental lessons in all three schools (see table 8.1). The most frequently recorded aspect was *students liked to listen to their friends' ideas about what they read. Then students like to do activities in groups.* The total scores are 14, 16, and 15 for the three schools. Next, *they can understand better when doing activities with their friends and they like learning vocabulary from the pictures.* The least frequently recorded aspect was *students can find the correct answers to the reading questions* with the total scores 6, 6, and 6. This means that trainee teachers thought that this item was difficult for the students to do, so this action occurred less often. In classroom interaction (see table 8.2), the most frequently mentioned item was item 6 with the total scores 14, 15, and 15, *students can discuss their hobbies and their future plans with their teachers.* Next, *students like to talk, or study, in groups like this* with the total scores 12, 15, and 13. The least frequently recorded aspect was *students talking informally about the reading assignment with their teachers,* total scores 9, 8, and 8. This means trainee teachers thought that it was difficult for the students to do and this action occurred less often. This means that after teaching using cooperative learning, students developed desirable learning characteristics on their own. Activities in task work and interaction helped them to become capable of working on their own, and it developed their self-confidence. Their roles as group members made the students take higher responsibility which helped the students to do the work on time, become good leaders, and present their work in front of the class very well.

It was found that, at first, students were not familiar with cooperative learning, so some characteristics were not always apparent (see Tables 8.1, 8.2). The aspects of lowest frequency recorded were that students could not find the correct answers to the reading questions which means that they could not do the gap-filling exercises or answer the questions. They were difficult for them to complete. Students talking informally about the reading assignment to their teacher recorded the next lowest frequency. This means they thought it was not easy to talk about the work with the teacher, or explain the work to the teacher in class. Some students could not solve the problem or puzzle in the reading assignment and this was recorded as the next lowest frequency. Some students could solve the problem in class but sometimes they thought that it was not easy to do, but after they studied for a while, they found that they could.
The research question.

What are Thai trainee teacher self-reported attitude and behaviour to teaching English using cooperative learning and Thai communicative methods?

The answer to the research question is that the trainee teachers learned the value of the new methodology. Some felt enthusiastic because it was new to them. Trainee teachers found that the aspects of highest frequency during teaching were students liked to listen to their friends' ideas about what they read, and do activities in groups. Next, they could understand better when doing activities with their friends and they liked learning vocabulary from the pictures. The aspect of lowest frequency was students can find the correct answers to the reading questions. This means cooperative learning changed the nature of their learning experience from that dependent on the teacher to one where they relied on each other. For trainee teachers, they got the benefits in preparing them for the teaching profession, because they had the chance and experience to practice solving problems that they found during their teaching.

The next chapter provides a summary of the study, bringing all the conclusions together, and discussing the implications.
CHAPTER NINE

SUMMARY, RESEARCH QUESTIONS, AND IMPLICATIONS

Summary of the study

This study had three aims. One, to test if it is better to teach English as a Second Language using a cooperative learning method than with a Thai communicative teaching method. That is, do Prathom 6 students learn English reading comprehension better when taught using cooperative learning than with Thai communicative teaching methods? Two, to test if Prathom 6 students self-reported attitude and behaviour, in regard to English reading comprehension, are better when they are taught English as a Second Language using a cooperative learning or a Thai communicative method of reading comprehension. Three, to investigate trainee teachers’ self-reported attitude and behaviour in teaching English reading comprehension with a cooperative learning and a Thai communicative teaching method.

The sample for the study was 32 Prathom six students at each of Wat Chong Lom, Wat Pikulthong and Wat Don-Ta-Lung schools who were studying Fundamental English in Ratchaburi province, Thailand. They were allocated by random sampling, with 16 Prathom six students each to an experimental group and a control group at each of the three schools. That means that there were 48 students in an experimental group and 48 in a control group. Three trainee teachers taught the three experimental groups and the corresponding three control groups under supervised, controlled conditions, whereby the timing, content and methodology were checked because another adult, either a class teacher or researcher, was present at all times.

There were two measures. One instrument consisted of 32 items in English reading comprehension (multiple choice format), and the second consisted of 40 items measuring attitude and behaviour towards learning English. Data were collected from 300 students and analysed with a Rasch measurement model to produce two linear scales. These scales were used in the experiment.

In regard to controls, before the experiment, random sampling was used to allocate the students to the control and the experiment groups so that the characteristics of the students in each group were similar. The teaching of three trainee teachers was controlled so that the treatment of the students was the same. During the experiment,
the texts, visual aids assignments, activities, exercises, and materials from the lesson plans were made as similar as they could be. The teaching times were the same, one hour or three periods per day. The planned time schedules were taken in turn. The amount of Thai used by trainee teachers was similar. In summary, a great deal of care was taken to treat the experimental group and the control group the same, except for teaching methodology. Then, if there were any measured differences in reading comprehension, or in attitude and behaviour, those differences could reasonably be attributed to the different teaching method.

Pretest Rasch (linear) measures were taken for reading comprehension, and for attitudes and behaviours. After 16 periods of teaching, similar posttest measures were taken for the control and experimental groups. The measures were analysed for significant differences using ANOVA (SPSS).

The Thai trainee teachers self-reported attitudes and behaviour to teaching English using cooperative learning were investigated by two methods. In one, the teachers kept a journal of comments for the 16 period experiment and in two, regular meetings were held with the teachers where they were asked about their attitudes and behaviour towards cooperative learning, and traditional teaching.

**Summary of the Findings**

**The English Reading Comprehension**

The main findings are set out below:

1. Posttest versus pretest results for the experimental group.
The students in the experimental group did significantly better on the posttest than the pretest in regards to reading comprehension in English ($F = 53.25$, $df = 1$, $p < 0.001$).

2. Posttest versus pretest results for the control group.
The students in the control group did significantly better on the posttest than the pretest in regards to reading comprehension in English ($F = 53.25$, $df = 1$, $p < 0.001$).

3. Pretest versus pretest results for the experimental versus the control group.
The students in the experimental group were not significantly better than those in the control group in regards to reading comprehension in English ($F = 0.40$, $df = 1$, $p = 0.53$). That is, the control and experimental groups were 'equal' in reading comprehension at the beginning of the experiment.

4. Posttest versus posttest result for the experimental versus the control group.
The students in the experimental group were significantly better in reading comprehension than those in the control group (F = 53.23, df 1, 94, p <0.001) at the end of the experiment.

5. The reading comprehension interaction effect of the experimental versus the control group.

The experimental group achieved better than the control group after the treatment. The cooperative learning method has a larger effect on reading comprehension than the Thai communicative teaching method.

The conclusion is that the students’ reading comprehension was better when taught by the cooperative learning method than by the Thai communicative teaching method. Thus, the evidence supports the view that the cooperative learning method could be superior to the Thai communicative teaching method, in regards to teaching ESL to Prathom 6 students in Thailand.

The attitude and behaviour questionnaire

The main findings are set out below.

1. Posttest versus pretest results for the experimental group.

The students in the experimental group did significantly better on the posttest than the pretest for the experimental group in regards to attitude and behaviour towards learning English (F = 56.85, df = 1, p < 0.001).

2. Posttest versus pretest results for the control group.

The students in the control group did significantly better on the posttest than the pretest for the control group in regards to attitude and behaviour towards learning English (F = 56.85, df = 1, p < 0.001).

3. Pretest versus pretest results for the experimental versus the control group.

The students in the experimental group were significantly better than those in the control group (F = 27.48, df 1, 94, p < 0.001) to start with, as measured on the attitude and behaviour questionnaire.

4. Posttest versus posttest result for the experimental versus the control group.

The students in the experimental group were significantly better than those in the control group (F = 56.85, df 1, 94, p < 0.001).

5. The attitude and behaviour questionnaire interaction effect of the experimental versus the control group. The experimental group improved their attitude and behaviour more than the control group, although both increased.
The conclusion is that the students' attitude and behaviour towards reading comprehension increased significantly more when they were taught by the cooperative learning method than by the Thai communicative method. Thus, the evidence supports the view that the cooperative learning method could be superior to the Thai communicative teaching method, in regards to improving attitudes and behaviour for Prathom 6 students learning ESL in Thailand.

Trainee teacher Journals

The trainee teacher journals provided data to show the teachers' attitude and behaviour during the 16 teaching periods. The conclusion is that the trainee teachers enjoyed teaching English through cooperative learning. There was strong agreement between the trainee teachers at the three schools in regard to their attitude and behaviour. They found students liked to listen to their friends ideas during the reading tasks (highest frequency aspect). It is noticed that sharing ideas in groups may lead to respecting each other. Moreover, during the exercises, students liked to do activities with their friends in group work. They could answer the questions (which come from the content) better during studying with their friends, and could talk with their teacher about the reading assignment anytime.

Group discussion

The four-stage agenda for the group sessions were based on TEST (Trigger, Explore, Strategies and Treat) (Matthews, 1993). Initially, the three regular teachers did not support the idea of cooperative learning, which they thought was the same as the Thai communicative teaching method that they normally used. After they became involved in the cooperative learning process, they found it interesting and wanted to investigate more about it. Little by little they came around to the view that there were good points about it. They have found that the cooperative learning method produced better results than the Thai communicative teaching method. Moreover, teachers suggested that there should be carefully constructed tasks, and carefully chosen materials, regularly introduced into the lower grade curriculum. Finally, the regular teachers agreed that it was better for their students and for them, and they accepted the new method of teaching because they thought it was more effective than the Thai communicative method of teaching ESL. The recommendation for better classroom implementation in English reading comprehension in primary schools was that
cooperative learning should continue to be used in teaching classroom English, and it should continue to be used for the teacher training course.

Research questions

The research questions can now be answered.

Research question 1

Do the students improve their English reading comprehension as a result of being taught using a cooperative learning method compared with when they are taught using a Thai communicative method?

1. Students improved their reading comprehension in English as a second language under both the cooperative learning and Thai communicative methods of teaching.
2. Students improved their reading comprehension in English as a second language under the cooperative learning method significantly more than under the Thai communicative teaching method.

It should be pointed out that part of the improvement in reading comprehension could be due to either or both the novelty effect and the Hawthorne effect (Bracey, 2002; Adair, Sharpe & Huynk, 1989). The Hawthorne effect refers to part of the improvement as being due to just being in the research study or to the extra attention that students get by being in the research study.

Research question 2

What are Thai student self-reported attitudes and behaviour to learning English when taught using a cooperative learning method? And are these different to those of students taught by the Thai communicative method?

1. Students improved their attitude and behaviour towards learning English as a second language under both the cooperative learning and the Thai communicative methods of the teaching.
2. Students improved their attitude and behaviour towards learning English as a second language significantly more under the cooperative learning method than under the Thai communicative method of teaching.

It should be pointed out that part of the improvement in attitude and behaviour could be due to either or both the novelty effect and the Hawthorne effect.
Research question 3

What are Thai trainee teacher self-reported attitudes and behaviour to teaching English using cooperative learning and the Thai communicative methods?

Trainee teachers liked the idea of what they learnt. They enjoyed their teaching of English through cooperative learning. They found that the highest frequency characteristics that happened during the 16 periods of teaching were that during task work, students like to listen to their friends ideas which means that they accept the ideas of others during group activities. They can answer the questions which come from the content better during studying with their friends. It is noticed that pictures help them in learning vocabulary. Sometimes students cannot choose the right answer to the reading questions and they think it is difficult for them to do it. There are the desirable characteristics arising from teaching with cooperative learning. For trainee teachers, they learned the benefits in preparing them for the teaching profession, because they have the chance to experience and practice solving the problems that they found during the experimental teaching.

Research question 4

What recommendations can be given for better classroom implementation in English reading comprehension in the primary schools based on a group discussion by some of those involved in implementing the approach?

For better classroom implementation in English reading comprehension in primary schools, cooperative learning should be used in teaching classroom English, and it should continue to be introduced in the teacher training course in Thailand.

Research question 5

Can a linear measure of English Reading comprehension, based on three activities (understanding the main idea, sequencing the order, and understanding the meaning), be constructed using a Rasch measurement model?

A linear measure of English Reading comprehension can be constructed using a Rasch measurement model. Persons with high measures were able to answer the high, medium difficulty and easy items positively. Persons with medium measures were able to answer only the medium difficulty and easy items positively. Persons with low measures were able to answer only the easy items positively. They were not able to answer the medium and hard items positively.
Research question 6

Can a linear measure of attitude and behaviour towards ESL, based on two aspects of cooperative learning (teaching and learning activities, and classroom interaction), and two perspectives (ideally, this is what should happen, and this is what really happens), be constructed using a Rasch measurement model?

A linear measure of attitude and behaviour of ESL can be constructed using a Rasch measurement model. Persons with high measures were able to answer the high, medium difficulty and easy items positively. Persons with medium measures were likely to answer only the medium difficulty and easy items positively. Persons with low measures were only able to answer the easy items positively. They were not able to answer the medium and difficult items positively.

Implications

For administrators, lecturers and trainee student teachers.

Cooperative learning could be introduced into the regular teacher training in the part of the curriculum for the lecturers as trainee teachers in Thailand in the last year of their studying, before the teacher training courses. It could also be presented in the Ratchaburi Province’s Educational office where the person-in-charge organises the seminar for the in-service teachers and other schools. A summarised plan of the course description is presented in table 9.1

Table 9.1
Possible topics for an inservice course on cooperative learning for teachers in Thailand.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Definition and explanation of cooperative learning.</td>
<td>(2 periods)</td>
</tr>
<tr>
<td>2. The rotating group roles.</td>
<td>(2 periods)</td>
</tr>
<tr>
<td>3. Tasks used in cooperative learning.</td>
<td>(2 periods)</td>
</tr>
<tr>
<td>4. Reading comprehension measurement and attitude and behaviour questionnaires.</td>
<td>(2 periods)</td>
</tr>
<tr>
<td>5. Practice in implementation and reports</td>
<td>(4 periods)</td>
</tr>
</tbody>
</table>

The 12 period course could be presented to the students at Rajabhat Institutes as a teacher training course seminar before they go out for their teaching. During the Thai Educational Reformation period, the Educational office, especially in Ratchaburi province, often conducts seminars for the teachers and has already given an invitation for the researcher to explain cooperative learning to them. Cooperative learning could be used, as the regular teachers suggested in the group discussion, by having teachers trained in cooperative learning methods, as part of their regular teacher training, where task work, including group roles, are implemented and taught.

It may be important to bring the results of this experiment to the notice of administrators in the Ministry of Education (Bangkok). Administrators may want to support inservice training in cooperative learning for other primary school teachers in Thailand.

For students learning ESL

In this study, it was found that the cooperative learning process was not only good for improving English reading comprehension development that consists of cooperative learning tasks, activities, and roles, but it was also good for classroom management and control. The model helped students to learn ESL effectively, and it helped teachers to keep the students interested. The tasks allow the students to check their understanding of the main ideas, sequence the order of events and understand the meaning, using pictures. Pair work, group work, and interaction activities used in the learning process are important in helping the students to develop higher-level thinking skills and increase students learning motivation during interaction among them (Bennett & Cass, 1988; Peterson et al., 1984; Swing & Peterson, 1982; Webb, 1982; Webb & Palincsar, 1996). The four roles as group members made students take higher responsibility which allowed them to do the work on time, and students can become good leaders and present their work in front of the class very well. Moreover, grade 6 students adapted their attitude and behaviour to learning very well and improved their English reading comprehension, when taught by cooperative learning. This model was based on two factors, teaching and learning activities (tasks) and classroom interactions (behavioural controls). The model can be used to help students learn ESL in Thai classrooms at primary schools.
For further research

There are at least five further studies that could be done.

One, this study could be replicated for English reading comprehension development in the other parts of Thailand, using larger experimental samples and/or different grade groupings.

Two, this study could be replicated for English reading comprehension development in the other Asian countries by using larger samples.

Three, a study could test the Rasch measures of attitude and behaviour with other samples and larger samples in Thailand.

Four, another study could test the Rasch measures of reading comprehension with other samples and larger samples in Thailand.

Five, this study could be done with the younger students (Grade 1-2 or Prathom 1-2), and older students (Grade 9-10-11-12 or Mathayom suksa 3-4-5-6) in Thailand.

It should be possible and, potentially very helpful, to investigate other aspects of cooperative learning and teaching that would improve English reading comprehension, and attitude and behaviour, in Thai classrooms. These might include computerising the pictures, tasks and activities, or tailoring the tasks and pictures to suit particular developmental groups of students, perhaps with a computerised adaptive program. Other modifications might include varying the times spent on the pictures, tasks and activities to see if there were different teaching times that optimised learning for groups at particular Piagetian levels.

Mention should also be made of the need to continue to use the latest Rasch computer programs to create proper linear scales of variables for use in future research. The reading comprehension test and scale needs revising and extending to lower grade levels in primary school and to higher grade levels in secondary school in Thailand, as does the attitude and behaviour questionnaire and scale. Wright (1999) has indicated that the use of linear scales is causing a minor revolution in educational psychology. Its use permits errors to be reduced and it may lead to the discovery of ‘laws’ for cooperative learning, much as there are laws in Physics and chemistry. It would be a useful development for educators in Thailand to discover some ‘laws’ relating to optimising learning in, and attitude and behaviour towards, cooperative learning.


128


Lesson Plan For Experimental Group

Period 1-2 (2 hours)

Topic : Relationships
Sub-Topic : Family
Subject : Fundamental English 4

Communicative Goal : Students are able to comprehend what they have read from the given story.

Objectives : 1. Explain the meaning of the vocabulary, subject pronoun, objective pronoun, possessive apostrophes.
2. Explain and answer questions on the details of the story.
3. Perform roles and take the responsibility in telling details of “Pim’s family” as follows:
   3.1 first member stimulates group members to elicit their ideas in filling Pim’s family chart from the given story.
   3.2 second member takes a note about the members’ idea and presents the group’s conclusion.
   3.3 third member gets the material from the teacher for the group.
   3.4 fourth member controls the time to do activities and fill out Pim’s family member chart on time.

Function : Identifying family members.
Grammar : Possessive apostrophes
Vocabulary : father, mother, sister, brother, student, doctor, nurse, soldier, teacher.
Activities : group work

Teaching Materials : family pictures, word cards, work sheet 1 (Pim’s family), exercise 1 (family chart), exercise 2

Procedure :
Step 1 Teacher tells the objective of the lesson which is about the family and occupations of family members and explains about the roles of cooperative learning (L1 & L2).
Step 2 Divide students into groups of four. Each team should have high and low reading ability students as well as boys and girls. The group member which has the responsibility in preparing stationery gets materials from the teacher (the big chart paper, outline paper, magic colored-pen, English-Thai dictionary, Thai-English dictionary). Teacher shows word cards and pictures to explain new words on the board. Teacher pronounces them first, then students pronounce them after the
teacher twice, in the whole class, groups, and individually. Teacher uses gesture or mime to explain some new words, and tries to elicit the meaning. Teacher revises subject pronoun and possessive pronoun by using the chart.

Ex:  
Peter - he  
Susan - she  
Peter and Susan - they

Teacher revises object pronouns by using the chart
Ex:  
I like Peter - I like him

Then teacher explains possessive apostrophes
Ex:  
Pim’s family

Step 3

The student who has responsibility in getting the materials from the teacher goes and gets the worksheet 1 and exercise 1 to the group members. First, after understanding the new words on the board. Students in groups try to help each other to understand the text. Students who have responsibility for suggestion and stimulating the members to lead them into the lesson, encourage by giving ideas and trying to get the ideas from the members. Students who have responsibility in taking notes write the members’ ideas and read the conclusion when it is finished. Teacher asks questions to gauge their understanding.

Ex:
Teacher : What is Pim? Students : She is a student.
Teacher : Who does she live with?
Students : She lives with her father and her mother.
Teacher : What’s the name of Pim’s father? Students : Pon
Teacher : What is he? Students : He is a doctor.
Teacher : What’s the name of Pim’s mother? Students : Porn
Teacher : What is she? Students : She is a teacher.
Teacher : How many brothers and sisters does she have?
Students : She has one brother and one sister.
Teacher : What are their names? Students : Pat and Pan.
Teacher : What are they?
Students : Pat is a soldier and Pan is a nurse

After they get the conclusion from reading “Pim’s Family” then the chart in the exercise 1 will be filled out. All members try to help each other in writing the conclusion on the big chart paper to be presented in class. Student who controls the time has the responsibility in warning the member to do the work on time.

Step 4

Evaluate by observing while they are doing activities and group work process, check understanding by examining the answers on the big chart paper that they present in class. Then check individual cloze exercises in exercise 2. Teacher blanks out every 3rd word of the story of “Pim’s family”. Students decide which word makes sense in the blanks. The goal is to fill in the missing words with the exact words or others with suitable meaning.

Step 5

The highest score of the team is displayed on the bulletin board.
Lesson Plan For Control Group
Period 1-2 (3 hours)

Topic : Relationship
Sub-Topic : Family
Situation : -
Communicative Goal : Students are able to comprehend what they have read from the given story.

Objectives : 1. Explain the meaning of the vocabulary, subject pronoun, object pronoun and possessive apostrophes.
2. Explain and answer the details of the story they have read.
3. Complete their individual work in groups.

Function : Identifying family members.
Grammar : - Possessive apostrophes.
- Subject Pronoun.
- Object Pronoun.

Vocabulary : father, mother, sister, brother, student, doctor, nurse, soldier, teacher.

Activities : Group work.

Teaching Materials : family pictures, word cards, work sheet 1(Pim's family), work sheet 2 (family chart)

Procedure :
Step 1 Teacher tells the objective of the lesson which is about the family and their occupation. Then, teacher shows the new words with word cards. (L1 and L2)

Step 2 Students practice by pronouncing the new words after the teacher two or three times in whole class, groups and individually. Teacher uses gesture or mime to explain some words they don't understand, try them to elicit the meaning. Then, teacher revises object pronouns (me, you, him, her, it, us, them)

Ex. I like Peter : I like him.
Teacher revises Subject Pronouns (I, you, he, she, it, we, they)

Ex. Peter : he
Susan : she
Peter and Susan : they

Teacher explains Possessive apostrophes.

Ex. Pim’s family.
Teacher shows Pim’s family chart to the students then students read the whole passage after teacher twice. After that divide them to read the whole passage in groups. Teacher ask questions to gauge their understanding, try them to get the answers. Students try to answer these questions.

Ex :
Teacher : What is Pim? Students : She is a student.
Teacher : Who does she live with ?
Students : She lives with her father and her mother.
Teacher : What's the name of Pim’s father? Students : Pon
Teacher : What is he ? Students : He is a doctor.
Teacher : What’s the name of Pim’s mother? Students : Porn
Teacher : What is she ? Students : She is a teacher.
Teacher : How many brothers and sisters does she have ?
Students : She has one brother and one sister.
Step 3

Teacher: What are their names?
Students: Pat and Pan.
Teacher: What are they?
Students: Pat is a soldier and Pan is a nurse

Students write the name of Pim’s family and their occupation in exercise 1. Then students do the cloze exercise (exercise 2) in the work sheet for individual work.
**Story: work sheet 1**

**Pim’s Family**

Pim is a student. She lives with her father and mother. She has one brother and one sister. Pon is a doctor. He is not her brother. Pan is a nurse. She is not her mother. Pat is a soldier and Porn is a teacher. Can you tell who is in Pim’s family?

**Exercise 1**

Read the story above then complete the following diagram with the names of Pim’s family members and their occupations.

(ให้นักเรียนอ่านเรื่องราวในภาษาอังกฤษแล้ววาดรูปภาพให้ชื่อและอาชีพของสมาชิกในครอบครัวของพิมให้ครบถ้วน)

![Diagram of Pim's Family](image)

**Exercise 2** Fill in each blank with one word using the exact words or others with a suitable meaning.

(ให้นักเรียนเติมคำที่เหมาะสมในช่องว่างให้ถูกต้อง)

Pim is...a...student. She...lives...with her...father...and mother. She...has one...brother...and one...sister... Pon is...a...doctor. He...is...not her...brother... Pan is...a...nurse. She...is...not her...mother... Pat is...a...soldier and...Porn...is a ...teacher.... Can you...tell...who is...in...Pim’s family?
Lesson Plan For Experimental Group
Period 3-5 (3 hours)

Topic : Feelings
Sub-topic : Personal feelings
Subject : Fundamental English 4

Communicative Goal : Students are able to comprehend what they have read from the given text.

Objectives : 1. Explain the meaning of the vocabulary.
2. Explain the use of feeling words and their verb patterns.
3. Perform their roles and take the responsibility in telling details of “Personal feelings” as follows:
   3.1 first member does his/her responsibility in taking notes about the members' ideas and present the group conclusion.
   3.2 second member gets the material from the teacher for the group.
   3.3 third member controls the time to do activities and complete the words in the worksheet on time.
   3.4 fourth member stimulates group members to elicit their ideas in completing the words in the worksheet.

Function : Identifying personal feelings.

Grammar : Verb Patterns. Subject + [feel] + adj. (feeling words) is, am are

Vocabulary : surprised, interested, happy, sad, frightened, bored, angry, afraid, tired, hurt, shy, sleepy, lazy.

Activities : Group work.

Teaching Materials : personal feeling pictures, word cards, worksheet 1, exercise.

Procedure :

Step 1 Teacher tells the objective of the lesson which is about personal feelings. After that the role of cooperative learning (L1 and L2) is reviewed.

Step 2 Teacher shows word cards and pictures in the worksheet 1 to explain the various personal feeling pictures. Teacher pronounces them first, then students pronounce them after the teacher twice in the whole class, groups and individually. Teacher uses gesture to explain some words they don't understand, trying to elicit the meaning. Then, teacher explains verb patterns of using feeling words in the sentence. Ex. Sam [feels] tired.

Step 3 Student who has responsibility in getting materials from the teacher goes and gets worksheets for the group members. After understanding the new personal feeling words, students in groups try to help each other to understand the text. Student who has responsibility in suggesting and stimulating the member tries to lead the other students into the lesson, encourages by giving ideas, and tries to get ideas from the members and help each other to get the words to complete personal feeling words in the worksheet. Teacher asks some questions from exercise 1 to gauge their understanding. Ex:
Teacher : Is Suda very happy ? Students : Yes, she is
teacher : Why ?
Students: Because her mother promised to take her to Magic Land.
Teacher: How does Supa feel? Students: She is frightened.
Teacher: Why?
Students: She finds her face full of black spots.
Teacher: How did he feel?
Students: He was frightened or afraid.

Student who has the responsibility in taking notes writes the words they choose after they get the conclusion and presenting them in class. Student who control the time has the responsibility in warning the member to do the work on time.

Step 4 Evaluate by observing while they are doing activities and group work. Check understanding by marking the answers on the worksheet that they present in class. Then mark the personal feeling exercises for each individual.

Step 5 The highest team score of the team is displayed on the bulletin board.
Lesson Plan For Control Group
Period 3-5 (3 hours)

Topic : Feelings
Sub-Topic : Personal feelings

Communicative Goal : Students are able to comprehend what they have read from the given text.

Objectives : 1. Explain the meaning of the vocabulary items.
2. Explain the use of feeling words and their verb patterns.
3. Complete their individual work in groups.

Function : Identifying personal feelings.

Grammar : Verb Patterns. Subject + [feel] + adj. (feeling words)

Vocabulary : surprised, interested, happy, sad, frightened, bored, enjoy, angry, afraid, tired, hurt, doubtful, shy, sleepy, lazy.

Activities : Group work.

Teaching Materials : personal feeling pictures, word cards, worksheet, exercise.

Procedure:

Step 1 Teacher tells the objective of the lesson which is about personal feelings. Then, teacher shows the new words with word cards. (L1 and L2)

Step 2 Students practice by pronouncing the new words after teacher two or three times in whole class, groups and individually. Teacher uses gesture and pictures to explain some words they don't understand. Then, teacher explains verb patterns of using feeling words in the sentence.

Ex. Sam [feels] tired.

Step 3 Teacher gives the worksheets to the students. Then students read the text in the exercise after the teacher twice. After that divide them to read it in groups of four. Students in groups help each other to complete personal feeling words in the worksheet. Teacher tries to ask the questions for each section to gauge their understanding

Ex:
Teacher : Is Suda very happy ? Students : Yes, she is
Teacher : Why ? Students : Because her mother promises to take her to Magic Land.
Teacher : How does Supa feel ? Students : She is frightened.
Teacher : Why ? Students : She finds her face full of black spots.
Teacher : How did he feel ? Students : He was frightened or afraid.

Step 3 Students in groups help each other to complete personal feeling words in the worksheet. Then students write the personal feeling words to match each picture as an exercise for individual work.
Personal feelings

Content

- surprised
- interested
- happy
- sad
- frightened
- bored
- angry
- afraid
- tired
- shy
- sleepy
- lazy
Exercise 1

Look at the pictures and words. They tell you something.

Suda’s mother promises to take her daughter to Magic Land. So, Suda is very _________.

sad    hungry    happy

Supa looks at the mirror. She finds her face full of black spots. She gets _________.

happy    frightened    smiling

Tim watered the plants in his garden yesterday. He saw a big snake. He was very _______ of it. He ran away to the house.

afraid    glad    sad

The teacher gives Wichai a lot of homework. It's very difficult. He won’t do it. He is a very _______ boy.

sad    happy    lazy
Bob got a new book from his father as a present. He is _______ in that book.

bored  surprised  interested

Pranee eats noodles everyday at school. Today her mother makes noodles for lunch again. She is _______ with them.

bored  interested  excited

Pong is on the way back home. The dog is going to bite him. He is very ________

happy  angry  sad

Sunee went to bed very late last night. Today she feels ________.

happy  sleepy  upset
On the Children's Day Tom's mother hangs the toy in Tom's bedroom. Tom is very_______.

surprised interested bored

Tom makes his room dirty. His mother hits him. So he is _________.

angry afraid sad

This morning Preecha exercised for almost one Hour without resting. What did he feel? He felt_______.

angry tired sad

He dresses so smartly. He feels_______ when everybody looks at him.

shy hurt worried
Lesson Plan For Experimental Group  
**Period 6-8 (3 hours)**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Recipe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub Topic</td>
<td>Potato cakes</td>
</tr>
<tr>
<td>Subject</td>
<td>Fundamental English 4</td>
</tr>
</tbody>
</table>

**Communicative Goal**: Students are able to understand a recipe.

**Objectives**:
1. Tell the meaning of the vocabulary.
2. Tell and report the details of the text they have read.
3. Operate their own role and take the responsibility in telling details of how to make “Potato cakes”.

**Function**: Identifying recipe instructions.

**Grammar**: Verb Pattern $\text{vt} + \text{direct object}$
- Peel + potatoes

**Vocabulary**: potatoes, flour, butter, cheese, salt, sugar, eggs, tomatoes, garlics, onions, water, bacon.

**Activities**: Group work.

**Teaching Materials**: word cards, pictures, worksheet 1, exercise

**Procedure**:

**Step 1**  
Teacher tells the objective of the lesson which is to read a recipe and after that revises the roles of cooperative learning (L1 and L2).

**Step 2**  
Teacher shows word cards and pictures to explain some words which is the materials that always use in cooking. Teacher pronounces them first, then students pronounce them after the teacher twice in the whole class, groups and individually. Teacher uses gesture to explain some words they don’t understand, trying to elicit the meaning. Teacher revises countable and uncountable nouns by using the chart. Then, teacher explains verb patterns.

Ex. Peel potatoes into the bowl.
Mash potatoes in the bowl.

**Step 3**  
Student who has responsibility in getting materials and stationery from the teacher goes and gets worksheet 1 for the group members. After understanding the words (ingredient) which are always used in cooking, students in groups try to help each other to understand the text. Students who have responsibility for suggestion and stimulating the members to lead them into the text, and encourage by giving ideas, trying to elicit the idea in worksheet 1 (instructions) from the members. Try to help each other to understand instructions for potatoes cakes. Teacher asks questions to gauge their understanding.

Ex:

Teacher : How much flour do we need to make potato cakes?
Students : 125 g.

Teacher : What are the ingredients to make potato cakes.
Students : Potatoes, flour, butter, cheese, salt and water.

Teacher : How many steps are there in making potatoes cakes.
Students : 8 steps.

Student who has the responsibility for taking notes writes the conclusion in choosing the picture of how to make potato cakes in order in exercise 1. Student who controls the time has the responsibility in warning the
members to do the work on time.

Step 4 Evaluate by observing while they are doing activities and group work, check understanding by examining the answers on the worksheet. Then individually they also write the recipe of how to make apple cake using a model with blanks to fill in for apple cake that given in exercise 2.

Step 5 The highest score of the team is displayed on the bulletin board.
Lesson Plan For Control Group
Period 6-8 (3 hours)

Topic : Recipe
Sub-Topic : Potato cakes
Subject : Fundamental English 4
Communication Goal : Students are able to understand a recipe they have read.
Objectives : 1. Tell the meaning of the vocabulary.
2. Tell and report the details of the story they have read.
3. Complete their individual work in groups.

Function : Identifying recipe instructions.
Grammar : Verb Pattern vt + direct object
- Peel + potatoes
Vocabulary : Potatoes, flour, butter, cheese, salt, sugar, eggs, tomatoes, garlics, onions, water, bacon
Activities : Group work
Teaching Materials : word cards, pictures, worksheet 1, exercise

Procedure:
Step 1
Teacher tells the objective of the lesson which is about the recipe.
Then, teacher shows the new words with word cards. (L1 and L2)

Step 2
Students practice by pronouncing the new words after the teacher two or three times in whole class, groups and individually. Teacher uses gesture to explain some words they don’t understand. Then, teacher explains verb patterns in doing potatoes cakes.
Ex : Peel potatoes into the bowl.
Mash potatoes in the bowl.
Teacher gives the worksheets to the students. Then students read the text in the worksheet 1 after the teacher twice. Then teacher asks questions to gauge their understanding.
Ex :
Teacher : How much flour do we need to make potato cake?
Students : 125 g.
Teacher : What are the ingredients to make potato cake?
Students : Potatoes, flour, butter, cheese, salt and water?
Teacher : How many steps are there in making potatoes cake?
Students : 8 steps.
After that divides them to read it in groups of four. Students in groups help each other to understand the instruction of potatoes cakes they read.

Step 3
Students in group help each other to choose the pictures of how to put the pictures of how to make Potato cake in order in exercise 1. Then group members write one of the recipes they want to do for exercise 2.
Potato cake

Ingredients

400g potatoes
125g flour
40g butter
40g cheese
salt, water

Instructions
1. Peel the potatoes and slice them.
2. Put the potatoes in a saucepan with some water.
3. Put a bit of salt and boil them for 20 minutes.
4. Mash the potatoes.
5. Put the mashed potatoes, the flour and the butter into a bowl and mix them with a fork.
6. Put the oil into the frying pan then fry the potato cake with mixture in it until they are brown on both sides.
7. Cover the cake with the cheese.
8. Put it in a dish and keep it warm in the oven.
Exercise 1
These are 8 pictures of how to make potato cake but they are not in order. Put these 8 pictures in order to make potato cake.

(ดูภาพการทำเค้กมันฝรั่ง 8 ภาพนี้ ยังไม่ได้เรียงลำดับขั้นตอนการทำที่ถูกต้อง ให้เรียงลำดับขั้นตอน 8 ภาพ นี้ตามขั้นตอนการทำเค้กมันฝรั่งให้ถูกต้อง)
Exercise 2

Fill in the blanks with suitable words for making apple cakes.
(งงข่าวกันเช่นนี้ค่ะอาหารโดยมีคำสั่งไปวังวังคงต่อไปฝึก)

Apple Cakes

Ingredients

........g apples
........g flour
........g butter
........g cheese, salt, water

Instructions

1. Peel the ............ and ...........them.
2. Put the ............ in a saucepan with some ............
3. Put a bit of ............ and ........... them for 20 minutes.
4. Mash the ............
5. Put the ............ ..........., the flour and the butter into a bowl and mix them with a fork.
6. Put the ............ into the frying pan then fry the ............cake with mixture in it until it is........... on the both .............
7. Cover the cake with the ............
8. Put it in a ............ and keep it warm in the ...............

154
Lesson Plan For Experimental Group
Period 9-11 (3 hours)

Topic : Animals
Sub-Topic : A Special Bird
Subject : Fundamental English 4
Communicative Goal : Students are able to comprehend what they have read.

Objective :
1. Explain the meaning of the vocabulary include adjective describing the features.
2. Answer the questions and taking a note with special features about the Ostrich.
3. Perform their own roles and take the responsibility in telling details of “A Special Bird”

Function :
Grammar : Comprehend a description of an ostrich.
Vocabulary : Adjectives describing the features.
Activities : ostriches, special, feathers, wing, habit, nail, sand, stone, wood, stomach, female, omelette, lay, hide, fight
Teaching Materials : Group work.
pictures, word cards, worksheet 1, exercise 1, exercise 2.

Procedure :
Step 1 Teacher tells the objective of the lesson which is about “A Special Bird” and after that revises the roles of cooperative learning. (L1 and L2)

Step 2 Students in groups of four do their duty. Student who has the responsibility for preparing stationery gets materials from the teacher. Teacher shows word cards and pictures to explain the new words in the text. Teacher pronounces them first, then students pronounce them after the teacher twice, in the whole class, groups and individually. Teacher uses gesture to explain some words they don’t understand, trying to elicit the meaning. Then teacher explains the vocabulary describing the features.
Ex : largest, feather, wing, long leg, run very fast, long neck, lay eggs in the same place, swallow anything, sharp, long living.

Step 3 Student who has responsibility for getting materials from the teacher goes and gets worksheet 1, 2, and 3 for the group members. After understanding the new words in each worksheet that the teacher explains, students in groups try to help each other to understand the text in each worksheet. Students who have responsibility in suggesting and stimulating the members to lead them into the lesson, encourage by giving ideas, trying to elicit the ideas from the members. Teacher asks some questions to gauge their understanding.
Ex :

Question : What are the largest birds in the world ?
Answer : Ostriches

Question : How long can ostriches live?
Answer : More than 70 years.

Question : What do they do if a lion or a person comes near ?
Answer : Run away or hide in some trees.

Question : How fast can they run ?
Answer : 64 kms. per hour.
Students help each other to match the questions with headings in exercise 1 and fill in the blanks with one word about ostriches in exercise 2 after studying the worksheet 1, then do the exercise 3 after studying worksheet 2 and exercise 4 after studying worksheet 3. Student who has responsibility in taking notes writes the words they choose after they get the conclusion and presenting them in class. Student who controls the time has the responsibility for warning the member to do the work on time.

**Step 4** Evaluate by observing while they are doing activities and group work process, check understanding by examining the answers on the worksheet that they present in class. Then individually students do exercise 5 which is about taking a short note about the 3 or 4 special features of the ostriches.

**Step 5** The highest score of the team is displayed on the bulletin board.
Lesson Plan For Control Group
Period 9-11 (3 hours)

Topic : Animals
Sub-Topic : A Special Bird.
Subject : Fundamental English 4

Communicative Goal : Students are able to comprehend what they have read.

Objectives :
1. Tell the meaning of the vocabulary including adjectives describing the features.
2. Answer the questions and take notes of special features about the Ostrich.
3. Complete their individual work in groups.

Function : Comprehend a description about the Ostrich.
Grammar : Adjectives describing the features.
Vocabulary : ostriches, special, feathers, wing, habit, nail, sand, stone, wood, stomach, female, omelette, lay, hide, fight.

Activities : Group work.

Teaching Materials : pictures, word cards, worksheet 1-3, exercise 1-5

Procedure :
Step 1
Teacher tells the objective of the lesson which is about “A Special Bird”. Then, teacher shows the new words with word cards. (L1 and L2)

Step 2
Students practice by pronouncing the new words after the teacher two or three times in whole class, groups and individually. Teacher uses gesture or mime to explain some words they don’t understand. Then teacher explains the adjectives describing features.
Ex : largest, feather, wing, long leg, run very fast, long neck, lay eggs in the same place, swallow anything, sharp, long living.

Teacher gives the worksheets 1, 2 and 3 in order to the students. Then students read the text in worksheet 1, 2 and 3 after teacher twice, before dividing them to read it in groups of four. Teacher tries to ask the questions for each section to gauge their understanding.

Example :

Question : What are the largest birds in the world?
Answer : Ostriches

Question : How long can ostriches live?
Answer : More than 70 years.

Question : What do they do if a lion or a person comes near?
Answer : Run away or hide in some trees.

Question : How fast can they run?
Answer : 64 kms. per hour.

Teacher tries them to get the answer first before matching the questions with headings in exercise 1 and fill in the blanks with one word in exercise 2 after studying worksheet 1. Then do the exercise 3 after studying worksheet 2 and exercise 4 after studying worksheet 3.

Students in groups help each other to complete the exercises.

Step 3
Students in groups help each other to match the questions with heading in exercise 1 and fill in the blank with one word in exercise 2 for the worksheet 1. Then do the exercise 3 after studying worksheet 2 and exercise 4 after studying worksheet 3. Then individually students
take short notes about the 3 or 4 special features of the ostriches in the exercise 5.
A Special Bird

Worksheet 1
Ostriches are a special kind of bird.

Ostriches, the largest birds in the world, are not like other birds. They have feathers but no wings. Their long legs and necks make them more than two meters tall. Ostriches are also very long living. Some of them live more than 70 years.

Worksheet 2
The habits of ostriches are also unusual. Although they like plant food, in fact they will eat almost anything. People have found keys, nails, sand, stones, wood and even money in their stomachs. When the females lay their eggs, several ostriches use the same place. After that, they take turns to keep the eggs warm. The eggs themselves are almost round and about 6 inches in diameter. One egg is enough to make an omelette for twelve people.

Worksheet 3
People say that ostriches hide their heads in the sand when they are frightened. This is not true. If a lion or a person comes near, the ostrich runs away or hides in some trees. Usually he can get away because he can run up to 64 kms per hour. Even one-month old ostriches can run as fast as older ones. If an ostrich has to fight he kicks with his long legs and two sharp toes. Yes, he has only two.

You can see that ostriches are very special.
Exercise 1  :  Matching the question from column A with the heading in column B then write the heading in front of each question.
(จงจับคู่ระหว่างหัวข้อในคอลัมน์ B กับคำถามในคอลัมน์ A แล้วเขียนหัวข้อที่ถูกต้องหน้าคำถามแต่ละข้อ)

**Column A**

1. What do ostriches eat ?
2. What do ostriches do when they fight?
3. How fast do they run?
4. How many people can they eat for an ostrich eggs to make an omelette ?
5. How old are some ostrich live?

**Column B**

a. 64 kms per hour
b. twelve
c. about 70 years
d. kick
e. keys

Exercise 2  Fill in each blank with one word using the exact words or others with a suitable meaning. (from paragraph 1)
(ลงตัวสี่ในการว่าให้ความสมบูรณ์ ณ หน้าจากคอลัมน์ที่ 1)

Ostriches are ...the... largest birds...in...the world. ...They... have features ...but... no wings. ...Their... long legs ...and... necks make ...them... more than ...two... meters tall.

Exercise 3  Fill in each blank with one word using the exact words or others with a suitable meaning. (from paragraph 2)
(ลงตัวสี่ในการว่าให้ความสมบูรณ์ ณ หน้าจากคอลัมน์ที่ 2)

The habits of ...ostriches... are unusual. They ...will... eat almost anything. People ...have... found keys, nails, sand, ...stones..., wood and even money ...in... their stomachs. When the ...females... lay their eggs several ...ostriches... use the same place. ...One... egg is enough to ...make... an omelette for twelve ...people....
Exercise 4  Fill in each blank with one word using the exact words or others with a suitable meaning. (from paragraph 3)

People say that ostriches ...*hide*... their heads in the ...*sand*... when they are frightened. ...*This*... is not true. If ...a... lion or a person ...*comes*... near, the ostrich runs ...*away*... or hides in some ...*trees*... Usually he can get ...*away*... because he can run ...*up*... to 64 kms per ...*hour*... If an ostrich has ...*to*... fight he kicks with ...*his*... long legs and two ...*sharp*... toes.

Exercise 5  From this story can you find 3 or 4 special things about the ostrich?

<table>
<thead>
<tr>
<th>Special Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long living</td>
</tr>
<tr>
<td>No wings</td>
</tr>
<tr>
<td>Long legs</td>
</tr>
<tr>
<td>Run 64 kms. per hour</td>
</tr>
</tbody>
</table>
Lesson Plan For Experimental Group

Period 12-13 (2 hours)

Topic : Sickness

Sub topic : Sickness

Subject : Fundamental English 4

Communicative Goal : Students are able to comprehend what they have read.

Objectives : 1. Explain the meaning of the vocabulary.
2. Explain the use of verb patterns to express sickness.
3. Students talk about sickness.

Function : Identifying sickness.

Grammar : Verb Patterns

Vocabulary : headache stomach ache rash on the skin sore ankle
backache toothache cough sore throat
earache cold fever

Activities : Group work

Teaching Materials: parts of the body chart, word cards, worksheet 1, exercise 1 and 2

Procedure :

Step 1: Teacher tells the objective of the lesson which is about “Sickness” after that revises the roles of cooperative learning. (L1)

Step 2: Teacher shows the part of the body chart to revise part of the body. Teacher pronounces them first, then students pronounce them after the teacher twice in the whole class, groups and individually. Teacher points out parts of the body to tell the meaning. Then, teacher explains verb patterns for use with sickness in the sentence.

Ex: Pim has got a headache/ a stomach ache/ a toothache.
    Noi has got a fever/ a sore ankle/ a sore throat.
    Sri has got an earache.
    Porn has got a rash on the skin.
    They have got a cold.
    They have got a cough.

Step 3: Student who has responsibility in getting materials from the teacher goes and gets exercise 1 for the group members. After understanding the new words, students in groups try to help each other to understand the text in worksheet 1. Students who have responsibility for suggesting
and stimulating the members try to lead them into the lesson, encourage by giving ideas, trying to elicit the ideas from the members. They help each other to get the sickness words to complete the sickness of the people in the exercise 1. The student who has responsibility in taking notes writes the words they choose after they get the conclusion and present them in class. The student who controls the time has the responsibility in warning the member to do the work on time.

**Step 4**
Evaluate by observing while they are doing activities and group work process, check understanding by examining the answer on the exercise 1 that they present in class. After finishing exercise 1, students do exercise 2.

**Step 5**
The highest score of the team is displayed on the bulletin board.
Lesson Plan For Control Group
Period 12-13 (2 hours)

Topic : Sickness
Sub topic : Sickness
Subject : Fundamental English 4

Communicative Goal : Students are able to comprehend what they have read.

Objectives : 1. Explain the meaning of the vocabulary.
2. Explain the use of illness words in Verb Patterns.
3. Students complete their individual work in groups.

Function : Identifying sickness.

Grammar : Verb Patterns

Vocabulary : headache stomach ache rash on the skin sore ankle
backache toothache cough sore throat
earache cold fever

Activities : Group work

Teaching Materials : parts of the body chart, word cards, worksheet 1, exercise 1 and 2

Procedure :
Step 1 Teacher tells the objective of the lesson which is about sickness. Then, teacher shows parts of the body chart. (L1)

Step 2 Students revises the parts of the body words by pronouncing the parts of the body after the teacher two or three times in whole class, groups and individually. Teacher points out parts of the body to tell the meaning. Then, teacher explains verb patterns of using in sickness in sentences.

Ex : Pim has got a headache/ a stomach ache/ toothache.
Noi has got a fever/ a sore ankle/ a sore throat.
Sri has got an earache.
Porn has got a rash on the skin.
They have got a cold.
They have got a cough.

Teacher gives exercise 1 to the students. Then students read the text in the exercise 1 after the teacher twice. After that divide them to read it in groups of four. Students in groups help each other to complete the new sickness words of the people in the exercise 1.

Step 3 Students in groups help each other to match the sickness with the pictures in exercise 1. Then students do sickness exercise in exercise 2 for individual work.
Parts of the Body

Use some of the words below to write the name of each part of the body on the chart.

1. foot  
2. ankle  
3. shoulder  
4. back  
5. elbow  
6. knee  
7. stomach  
8. throat  
9. head  
10. arm
Match the sickness with the pictures.

a headache  a stomach ache  a sore knee  a sore ankle
a backache  a toothache  a cough  a sore throat
an earache  a cold  a fever
Exercise 2

Match the sickness with picture.

--------- I have got a cold
--------- I have got a toothache.
--------- I have got a backache.
--------- I have got a headache.
--------- I have got a sore throat.
--------- I have got a stomach ache.
--------- I have got a temperature.
Lesson Plan For Experimental Group
Period 14 (1 hour)

Topic

Sub-Topic
They are like those for Experimental Group

Subject
period 12-13

Communicative Goal

Objective

Function

Grammar :

Vocabulary
take an aspirin, go to bed, have a rest, go to see the dentist
go to see the doctor, stop working, go for a walk

Activities
Group work

Teaching Materials
word cards, sickness chart, worksheet 1, exercise 1 and 2

Procedure :

Step 1
Teacher tells the objective of the lesson which is about sickness and how to make people better and after that revises the roles of cooperative learning. (L1 & L2)

Step 2
Teacher revises the sicknesses in worksheet 1. Teacher revises by pronouncing them first, then students pronounce them after the teacher twice, in the whole class, groups and individually. Teacher shows the pictures with the phrase cards of how to solve the problems as shown:

- take an aspirin
- go to bed
- have a rest
- go to see the dentist
- go to see the doctor
- stop working
- go for a walk

Student who has responsibility in getting materials from the teacher goes and gets exercise 1 for the group members. After understanding how to solve the problems, students in groups try to help each other to understand the text in the exercise 1. Teacher asks some questions to gauge their understanding.

Ex:
Teacher : Has Jim got a toothache?
Students : No, he hasn't. He has got an earache.
Teacher : What should he do?
Students: He should take an aspirin, or he should go to see the doctor.

Student who has responsibility in suggesting and stimulating the members tries to lead them into the lesson, and encourages them by giving ideas, trying to get the ideas from the members. They help each other to check the sicknesses of eight people in the exercise 1 and write their ideas to solve the problems by using the phrases that teacher explained to them before. Student who has responsibility in taking notes writes the answers they choose after they get the conclusion and present them in class. Student who controls the time has the responsibility in warning the members to do the work on time.

Step 4 Evaluate by observing while they are doing activities and group work process, check understanding by examining the answers on the exercise 1 while they are presenting in class. Then individually test understanding by doing exercise 2.

Step 5 The highest score of the team is displayed on the bulletin board.
Lesson Plan For Control Group
Period 14 (1 hour)

Topic
Sub-Topic
They are like those for Control Group
Subject
period 12-13
Communicative Goal
Objective
Function
Grammar : -
Vocabulary : take an aspirin, go to bed, have a rest, go to see the dentist
go to see the doctor, stop working, go for a walk
Activities : Group work
Teaching Materials : word cards, sickness chart, worksheet 1, exercise 1 and 2
Procedure :

Step 1 Teacher tells the objective of the lesson which is about sickness.
Then, teacher shows eleven people with sicknesses in the chart.
(L1 & L2)

Step 2 Students revises the chart about eleven people with sicknesses in
worksheet 1 by pronouncing them after teacher. Then, teacher shows
the pictures with the phrase cards of how to solve the problems from
these sicknesses as shown:

- take an aspirin
- go to bed
- have a rest
- go to see the dentist
- Go to see the doctor
- stop working
- go for a walk

Teacher pronounces them first, then students pronounce after teacher
two or three times in whole class, groups and individually.
Teacher gives exercise 1 to the students. Then students read the text in
exercise 1 after teacher. Teacher asks some questions to gauge their
understanding
Ex :
Teacher : Has Jim got a toothache ?
Students : No, he hasn’t. He has got an earache.
Teacher : What should he do ?
Students: He should take an aspirin, or he should go to see the doctor.

After dividing them to read it into groups of four, students in groups help each other to check the sicknesses of eight people in the exercise 1 and write their idea to solve that problem by using the phrases that teacher explained to them before.

Students in groups help each other to check the sicknesses of eight people and write their idea to solve that problem by using the phrases that teacher had explained for them before in exercise 1. Then individual test understanding by doing exercise 2.
Worksheet 1

Sickness

Jim: an earache
Peter: a cold
Suda: a fever

Anne: a toothache
David: a cough
Mrs. Green: a sore throat

Preecha: a sore knee
Betty: a sore ankle
Mr. Lake: a backache

Tom: a stomach ache
John: a headache
Exercise 1
Study the 11 pictures again then tick true (√) for the sickness of each person. Write what each should do for his / her sickness.

(สุภาพ ทั้ง 11 ภาพอีกครั้ง หลังจากนี้ให้ทำเครื่องหมาย√ ของโรคต่าง ๆ ของคนเจ็บแต่ละคน รวมทั้งให้บอกวิธีการรักษาโรคคนด้วย)

## Sickness

<table>
<thead>
<tr>
<th>Ache</th>
<th>Headache</th>
<th>Toothache</th>
<th>Sore Throat</th>
<th>Backache</th>
<th>Cold</th>
<th>Cough</th>
<th>Stomach Ache</th>
<th>Rash on the Skin</th>
<th>What to do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>John</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mr. Lake</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jim</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ann</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peter</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>David</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suwit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Exercise 2

Study advertisements about medicines carefully, then decide which medicine is the best for each sickness.

1. Noi has a rash on his skin, so he needs ..............
2. Somsri has got a headache, so she needs ..............
3. Chai has got a stomach ache, so he needs ..............
4. Jit has got a sore throat, so she needs ..............
5. Peter has got a toothache, so he needs ..............
6. Lek has got a temperature, so he needs ..............
7. David gets pain in his arm, so he needs ..............
8. Nong coughs so much, so he needs ..............
Lesson Plan For Experimental Group
Period 15-16 (2 hours)

Topic : Markets

Sub-Topic : The Floating Markets

Subject : Fundamental English 4

Communicative Goal : Students are able to comprehend what they have read.

Objectives : 1. Explain the meaning of the vocabulary.
2. Explain and answer questions on the details of the story.
3. Students give details about “The Floating Markets”.

Function : Comprehend a description about “The Floating Markets”

Grammar : -

Vocabulary : land, water, canal, vegetables, float, fresh,
sell, buy, townpeople, tourist

Activities : Group work

Teaching Materials : pictures, word cards, worksheet 1-2, exercise 1-4, real objects

Procedure :

Step 1
Teacher tells the objective of the lesson which is about “The Floating Markets” and after that revises the roles of cooperative learning.

(L1&L2)

Step 2
Teacher revises vocabulary as shown:
Oranges, grapes, papaya, cabbages, beans and onions.
Then teacher shows word cards and picture to explain the new words in the text. Teacher pronounces them first, then students pronounce them after the teacher twice, in the whole class, groups, and individually. Teacher uses gesture to explain some words they don’t understand, encouraging them to get the meaning.

Step 3
Student who has responsibility in getting materials from the teacher goes and gets worksheets 1 and 2 for the group members. After understanding the new words, students in groups try to help each other to understand the text. Teacher asks some questions to gauge their understanding.

Ex :

Teacher : What time can the tourist go and buy things at the Floating markets?

Students : From 7 am to 11 am.

Teacher : Where is Damnoensaduak?

Students : In Ratchaburi.

Teacher : Are floating markets on land or on water?

Students : They are on water.

Teacher : Who had a good idea to bring water to the farms?
Students : The king.
Teacher : How many canals are there?
Students : There are more than 200 canals.
Teacher : Does everybody like the floating markets?
Student : Yes, they do.

Student who has responsibility in suggesting and stimulating the members to lead the other students into the lesson, by getting ideas from the members and helping each other to answer by ticking true (√) for the true sentences and ticking false (X) for the false sentences in exercise 1 and 3. Student who has the responsibility in taking notes ticks the answer they choose after they get the conclusion and presenting them in class. Student who controls the time has the responsibility in warning the member to do the work on time.

Step 4 Evaluate by observing while they are doing activities and group work. Check understanding by marking the answers on the exercise 1 and 3 that they present in class. Then individual complete the crossword from exercise 2 and 4.

Step 5 The highest team score is displayed on the bulletin board.
Lesson Plan For Control Group
Period 15-16 (2 hours)

Topic : Markets
Sub-Topic : The Floating Markets
Subject : Fundamental English 4

Communicative Goal : Students are able to comprehend what they have read.

Objectives : 1. Explain the meaning of the vocabulary.
2. Explain and answer questions on the details of the story.
3. Complete their individual work in groups.

Function : Comprehend a description about "The Floating Markets"

Grammar : -

Vocabulary : land, water, canal, vegetables, float, fresh,
sell, buy, townpeople, tourist

Activities : Group work

Teaching Materials : pictures, word cards, worksheet 1-2, exercise 1-4

Procedure :
Step 1 Teacher tells the objective of the lesson which is about "The Floating Markets". Then teacher shows the new words with word cards.
(L1&L2)

Step 2 Teacher revises vocabulary as shown:
Oranges, grapes, papaya, cabbages, beans and onions.
Students practice by pronouncing the new words after teacher two or three times in whole class, groups and individually. Teacher uses gesture and pictures to explain some words they don't understand, trying to elicit the meaning. Teacher gives worksheets 1 and 2 to the students. Then students read the text in the worksheets 1 and 2 after the teacher twice. After that divide them to read it in groups of four. Students in groups help each other to understand "The Floating Markets" in the worksheet 1 and 2. Teacher asks the questions for each section to gauge their understanding.

Ex :
Teacher : What time can the tourist go and buy things at the Floating markets?
Students : From 7 am to 11 am.
Teacher : Where is Damnoensaduak?
Students : In Ratchaburi.
Teacher : Are floating markets on land or on water?
Students : They are on water.
Teacher : Who had a good idea to bring water to the farms?
Step 3

Students in groups help each other to answer by ticking true (✓) for the true sentences and ticking false (X) for the false sentences in exercise 1 and 3. Then students complete the crossword from exercise 2 and 4 for individual.
The floating Markets

Worksheet 1

The markets at Damnoensaduak are special. They are in Ratchaburi province. They are not on land but on water. This is why they have such a nice name, the floating markets. Long long ago there were no rivers in this part of Thailand. Then the king had a good idea to bring water to the farms. He asked the people to dig a long canal between two rivers. Now there are more than 200 canals.

Worksheet 2

The farmers use the canals to take their fruit and vegetables to market by boat instead of by road. Everybody likes the floating markets. Day in and day out, from about 7 am to 11 am, the farmers sell their oranges, grapes, papayas, cabbages, beans and onions and other fresh goods. Sellers, buyers, townpeople and tourists all come to enjoy themselves at the floating markets.
Exercise 1
After reading this story "The Floating Market" tick (√) in front of the sentences if the sentences are true and put a cross (X) in front of the sentences if they are false.
(From worksheet 1)

............1. Damnoensaduak is in Petchaburi.
............2. The farmers at the floating markets sell fruit and vegetable on water.
............3. The people had a good idea to dig a long canal between two rivers.
............4. Long ago there were rivers in Damnoensaduak.
............5. The king asked the people to bring water to the farms by digging canals.

Exercise 2  Crossword
Choose the correct words to finish the crossword. (ให้นักเรียนเลือกคำที่ถูกต้องเพื่อเติมลงไปในกรีฑาคำให้)

<table>
<thead>
<tr>
<th></th>
<th>water</th>
<th>canal</th>
<th>vegetable</th>
</tr>
</thead>
<tbody>
<tr>
<td>fruit</td>
<td>seller</td>
<td>buyer</td>
<td>float</td>
</tr>
</tbody>
</table>

PACIFIC OCEAN

1
2
3
4
5
6
7
8

180
Exercise 3

After reading this story "The Floating Market" tick (✓) in front of the sentences if the sentences are true and put a cross (X) in front of the sentences if they are false. (From worksheet 2)

.........1. Sellers, buyers and tourists can go to buy things at the floating markets from 7 am to 11 am.
.........2. Now there are more than two hundred canals.
.........3. The farmers take their fruit and vegetables to the floating markets by road.
.........4. The farmers sell grapes, papayas, beans and onions at the floating markets.
.........5. Sellers, buyers and tourists don’t enjoy buying things at the floating markets.

Exercise 4  crossword

Write these words in the crossword. (มีคำศัพท์ดังนี้ให้เขียนในกรี๊ดคำศัพท์)

townpeople   tourist   orange   grape

cabbage     beans   onions   papaya

\[1\]  \[2\]  \[3\]  \[4\]  \[5\]  \[6\]  \[7\]  \[8\]

181
Appendix B 1  A letter to students

Rajabhat Institute, Muban
Chombung, Chombung
Ratchaburi, 70150,
Thailand.
Telephone (032) 261790-97
Facsimile (032) 261078

Dear Student

I am managing a study on teaching reading comprehension to Prathom 6 students, and I wish you to help me in this study. You will be chosen to take part in this study by using a simple random sampling of 32 students, 16 to learn by the traditional method and 16 to learn by cooperative learning method. Please show you are willing to participate by signing this form. There is no reward or penalty for participation. It is expected that you will get benefit from extra teaching time, if you choose to participate. You may withdraw from the experiment at any time and your final grade in the course will not be affected by such withdrawal. By signing and returning a copy of this letter you indicate your willingness to participate. In case of withdrawal, you have to send a written request by your parent or guardian asking for such withdrawal and return it to me. Please have your parents also sign this form and then return it to me.

Thank you for your participation and co-operation.

Yours sincerely,

(Ms. Sutaporn Chayarathee)

English Department, Rajabhat Institute, Muban Chombung,
Chombung, Ratchaburi 70150, Thailand.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

I wish to participate in this study. (Please tick the answer)

I understand that I have been assured of confidentiality and that my identity will remain anonymous.

Signature (student) ____________________________________________

Signature (parents / guardian) __________________________________

Date ______ / ______ / 2001.

182
Dear Trainee teacher

You are asked to be a volunteer for this experimental research in the field of teaching reading in English. You have been taught both the traditional method and the cooperative learning method of teaching reading comprehension. In the experiment, you will teach 16 students by the traditional method and 16 students by the other cooperative learning method, in order to compare the results of both teaching methods. This means that you will be teaching two classes of 16 rather than two classes of 32 as you would normally do.

Pretest and posttest will be given to 16 students in both groups to evaluate your pupils’ progress in English reading comprehension. You will be asked to do the questionnaire to see your opinion about these two methods of teaching. Please show you are willing to participate in this teaching experiment by signing this form and returning it to me. You will also be asked to keep notes (a journal) of your teaching these two classes and to participate in a focus group evaluation of the results after the experiment for possible recommendation to school authorities.

Thank you for your participation and co-operation.

Yours sincerely,

(Ms. Sutaporn Chayarathee)

English Department, Rajabhat Institute, Muban Chombung, Chombung, Ratchaburi 70150, Thailand.

---

I wish to participate I this study. (Please tick the answer)

[ ] Yes  [ ] No

I understand that I have been assured of confidentiality and that my identity will remain anonymous.

Signature (Trainee teacher) ____________________________

Date _____ / _____ / 2001.
To : School Principal

We are glad to tell you that your school has been chosen to participate in an experiment in teaching of English reading comprehension by using two methods: traditional method and cooperative learning method. These two methods are expected to improve reading comprehension in English of your students.

There is nothing to lose in participation in this experiment, but much to gain for your pupils. Your pupils will learn better, or improve their English reading comprehension due to the more extensive training received. Please sign this letter and show your agreement to participate in this experiment at an early date, otherwise we would have to offer cooperation to another school that wishes to participate since the National Education Act encourages all schools to participate in such research.

Thank you for your participation and co-operation.

Yours sincerely,

(Mr. Sompong Sakultub)

Dean of the Faculty of Education Rajabhat Institute Muban Chombung, Chombung, Ratchaburi 70150, Thailand

---

I wish to participate in this study. (Please tick the answer) [ ] Yes [ ] No

I understand that I have been assured of confidentiality and that my identity will remain anonymous.

Signature (principal) ________________________________

Date _____ / _____ / 2001. (please return by………………….)
Appendix B 4  A letter to English teacher

Rajabhat Institute, Muban Chombung, Chombung
Ratchaburi, 70150, Thailand.
Telephone (032) 261790-97
Facsimile (032) 261078

Dear English teacher

Your school agreed to participate in this experimental research in the field of teaching English reading by two methods: traditional method and cooperative learning method, through a program of the Rajabhat Institute, Muban Chombung, trainee teachers. However, this study would not be successful without your active help and cooperation in evaluating the methods used by the trainee teachers. It’s my pleasure to invite you to be part of a focus group discussion, gathered by me, with the English teachers at the three participating schools and the three trainee teachers who take part in the experiment. The first focus group meeting will be arranged at a convenient time before the experiment will be started. A second meeting would be after the experiment will be finished, including your recommendations for the teaching of English reading based on your observations of the participating students and trainee teachers.

All information discussed at the focus group will be confidential. Only results and recommendations agreed by the participants will be published. Please indicate your willingness to participate by signing and returning this form with your choice ticked.

Yours sincerely,

(Ms.Sutaporn Chayarathee)

English Department, Rajabhat Institute, Muban Chombung, Chombung, Ratchaburi 70150, Thailand.

---

I wish to participate in this study. (Please tick the answer)

[ ] Yes  [ ] No

I understand that I have been assured of confidentiality and that my identity will remain anonymous.

Signature (English Teachers)__________________________

Date _____ / _____ / 2001.
Dear English Teacher

In your teaching, it may help you to know how your students feel about learning English reading, by evaluating your students’ English reading comprehension and attitudes to teaching.

We have two instruments to develop. The first one is an English reading multiple choice testing instrument, and the second one is an attitudes questionnaire in Thai. These two instruments are being pilot-tested for 300 grade 6 students, and your students have been chosen to participate in order to establish the validity of these instruments, using statistical analysis. You are asked to help, by conducting the test, and administering the questionnaire to your regular grade 6 English class, then return results to us.

The confidentiality of your students test results and questionnaires will be respected, all tests and questionnaires will be returned to you after the statistical analysis. You are free to use these instruments for your own purpose after the study and after receiving validation results. Thank you for your participation and co-operation.

Your sincerely,

(Ms. Sutaporn Chayarathee)

English Department, Rajabhat Institute, Muban Chombung, Chombung, Ratchaburi 70150, Thailand.

---

I wish to participate in this pilot test. (please tick the answer) [ ] Yes  [ ] No

I understand that I have been assured confidentiality of information and that my identity will remain anonymous.
I also will not use these tests and questionnaires outside of this pilot study until validation results are given to me by the researcher. I will always acknowledge the source of these materials when I use it in my work.

Signature (English Teacher) ________________________________

Date ______/______/2001.
Appendix C 1  Students’ attitudes and behaviour questionnaire in relation to learning English (Thai version)
แบบสอบถามทัศนคติในการเรียนการอ่านภาษาอังกฤษ
(ฉบับสำหรับนักเรียน)

ค่าสัม ให้นักเรียนนัดเครื่องหมาย √ ลงในช่องคำตอบที่ตรงกับความรู้สึกของนักเรียนการตอบของนักเรียนครั้งนี้ไม่มีผลต่อการเรียนหรือคะแนนของนักเรียนแต่อย่างใด
- ขอให้นักเรียนปฏิบัติตำงกับความรู้สึกมากที่สุดดัดเครื่องหมาย √ ลงในช่อง
 หมาย 4
- ขอให้นักเรียนปฏิบัติตำงดังที่ความรู้สึกมากที่สุดดัดเครื่องหมาย √ ลงใน
 ช่องหมายเลข 3
- ขอให้นักเรียนปฏิบัติตำงดังที่ความรู้สึกเป็นบางครั้งดัดเครื่องหมาย √ ลงใน
 ช่องหมายเลข 2
- ขอให้นักเรียนไปปฏิบัติตำงหรือแทบไม่ปฏิบัติตำงไม่ตรงกับความรู้สึกหรือแทบจะไม่
 ตรงกับความรู้สึกดัดเครื่องหมาย √ ลงในช่องหมายเลข 1

ในแบบสอบถาม ช่องความคาดหวังคือสิ่งที่นักเรียนมุ่งหวังและปราร']/ว่าควรจะเป็น
ในของความเป็นจริงคือสิ่งที่เป็นจริงที่ทำได้รับหรือปฏิบัติตำงด้วงอย่าง

<table>
<thead>
<tr>
<th>หัวข้อคำถาม</th>
<th>ความคาดหวัง</th>
<th>ความเป็นจริง</th>
</tr>
</thead>
<tbody>
<tr>
<td>นักเรียนสามารถเรียนรู้ข้ามภาษาที่แตกต่างกัน</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>

จากตัวอย่างหมายความกว่านักเรียนคิดว่านักเรียนสามารถเรียนรู้ข้ามภาษาที่แตกต่างกัน
ก่อน-หลังได้บางเป็นบางครั้ง จึงชี้ต √ เครื่องหมายที่ช่องหมายเลข 2 แต่ในความเป็นจริงนักเรียน
สามารถเรียนรู้ข้ามภาษาที่แตกต่างกันก่อน-หลังได้มาก จึงชี้ต √ เครื่องหมายในช่องหมายเลข 3

187
<table>
<thead>
<tr>
<th>หัวข้อคำถาม</th>
<th>ความคาดหวัง</th>
<th>ความเป็นจริง</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ต้นงานกลุ่ม</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2 นักเรียนชอบพิจารณาความคิดเห็นของเพื่อนในเรื่องที่อ่าน</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-4 นักเรียนชอบทำกิจกรรมเป็นกลุ่มอย่าง</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-6 นักเรียนเข้าใจบทเรียนได้ดีกว่าเมื่อทำกิจกรรมร่วมกับเพื่อน ๆ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-8 นักเรียนสามารถคุยเพื่อน ๆ ให้ทำงานได้ เสร็จตามเวลา</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9-10 นักเรียนสามารถเขียนบันทึกสรุปแนวคิดต่าง ๆ ของเพื่อนในกลุ่มได้</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-12 นักเรียนชอบที่จะเป็นผู้นำในการทำกิจกรรมกลุ่ม</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ต้นความหมาย</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13-14 นักเรียนชอบเรียนคำศัพท์จากรูปภาพ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-16 นักเรียนสามารถตระหนักระหว่างความหมายของคำศัพท์จากรูปภาพได้</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ต้นการอ่านเพื่อความเข้าใจ</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17-18 นักเรียนสามารถบอกวิธีปฏิบัติดังเพื่อง่าย ปัญหาความเข้าใจปัญหา ๆ ได้ร่างภาพได้</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-20 นักเรียนคิดว่านักเรียนสามารถเรียงเรื่องราวที่มีขึ้น ก่อน-หลังได้</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-22 นักเรียนคิดว่านักเรียนสามารถคิดค่าที่ถูกต้องในช่วงวาระให้เป็นประโยชน์ที่สามารถได้</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23-24 นักเรียนคิดว่านักเรียนสามารถตอบคำถามโดยเขียนคำตอบจากเรื่องที่อ่านได้ถูกต้อง</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ลำดับการจัดการ</td>
<td>ความคาดหวัง</td>
<td>ความเป็นจริง</td>
</tr>
<tr>
<td>------------------------------------------------------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
<tr>
<td>ปฎิบัติการที่จะทำให้นักเรียนรู้กับนักเรียนในห้องเรียน</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>25-26 นักเรียนได้รับความรู้จากการสอนอ่านภาษาสังกษัปของครู</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27-28 นักเรียนเข้าสู่สอนวิชาภาษาสังกษัป</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29-30 นักเรียนสามารถทุกครุภิกำลังคุณกับงานอดิเรก และแผนการในอนาคตของนักเรียนได้</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-32 นักเรียนชอบวิธีการสอนอ่านภาษาสังกษัปของครู</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33-34 นักเรียนสามารถทุกครุภิกำลังคุณกับงานอดิเรก และแผนการในอนาคตของนักเรียนได้</td>
<td></td>
<td></td>
</tr>
<tr>
<td>การทำงานเป็นกลุ่มระหว่างนักเรียนกับนักเรียน</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35-36 นักเรียนชอบทุกครุภิกำลังคุณกับงานอดิเรก และแผนการในอนาคตของนักเรียนได้</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37-38 นักเรียนมีโอกาสที่จะมีส่วนร่วมในการทำกิจกรรมกับเพื่อน ๆ มาก</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39-40 นักเรียนชอบการทำงานเป็นกลุ่ม</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix C 2  Students’ attitudes and behaviour questionnaire in relation to learning English (English version)

Please rate the 40 statements according to the following response format and check the column corresponding to your attitude (prior to studying) and your behavior (during study) on the appropriate line opposite each statement:

- Always and nearly always put ✓ on column 4
- Sometimes put ✓ on column 3
- Mostly not put ✓ on column 2
- Never or rarely put ✓ on column 1

Instructions: Check ✓ in the one column of the 4 scales that you feel most describes your feeling. Any response in the questionnaire will not affect your score in the course.

Subscale: Teaching / Learning Activities

Example:

<table>
<thead>
<tr>
<th>Questionnaire item</th>
<th>This is what ideally should happen</th>
<th>This is what really happens</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1. I like to do activities in groups.</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

Check ✓ on the questionnaire item, if you believe, prior to learning, that you mostly don't like to do activities in groups, check ✓ on column 2, if you sometimes achieve this, check ✓ on column 3.
Subscale: Teaching/Learning Activities (24 items)
(expected beliefs and expected actions about teaching/learning activities in English reading classes as subjective norm.)

<table>
<thead>
<tr>
<th>Questionnaire item</th>
<th>This is what ideally should happen</th>
<th>This is what really happens</th>
</tr>
</thead>
<tbody>
<tr>
<td>item no.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Tasks for meaning**

1-2 I like learning vocabulary from pictures
3-4 I can guess the meaning of the words from pictures

**Tasks for group work.**

5-6 I like to listen to my friends’ idea about what we read.
7-8 I like to do activities in groups.
9-10 I can understand better when I do activities with friends.
11-12 My group finishes the work on time.
13-14 I can make notes to summarize about the group’s ideas.
15-16 I like to lead my friends in doing activities.

**Tasks for reading Comprehension**

17-18 I like to solve the problem/puzzle in reading assignment.
19-20 I can put the story into the correct order.
21-22 I can complete cloze exercises with the correct words.
23-24 I can find the correct answers to the reading questions.
**Subscale: Classroom interaction (16 items)**

(expected beliefs and expected actions about student/teacher and student/student relationships in English reading classes)

<table>
<thead>
<tr>
<th>Questionnaire item</th>
<th>This is what ideally should happen</th>
<th>This is what really happens</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Item no.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Student / student relationship</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-26</td>
<td>I learn more when I study in small groups.</td>
<td></td>
</tr>
<tr>
<td>27-28</td>
<td>I can have more opportunity to participate in activities among friends.</td>
<td></td>
</tr>
<tr>
<td>29-30</td>
<td>I like to talk or study in groups.</td>
<td></td>
</tr>
<tr>
<td><strong>Student / teacher relationship</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-32</td>
<td>I learn a lot from the teacher.</td>
<td></td>
</tr>
<tr>
<td>33-34</td>
<td>I like my English teacher.</td>
<td></td>
</tr>
<tr>
<td>35-36</td>
<td>I can discuss my hobbies and my future plans with my teacher.</td>
<td></td>
</tr>
<tr>
<td>37-38</td>
<td>I like the way my teacher teaches me English reading.</td>
<td></td>
</tr>
<tr>
<td>39-40</td>
<td>I can talk to my teacher informally about my reading assignment.</td>
<td></td>
</tr>
</tbody>
</table>
Appendix C3 Teachers’ attitude and view of behaviour in relation to learning English (Thai version).
แบบสอบถามทัศนคติในการเรียนการสอนภาษาอังกฤษ
(ฉบับสำหรับครู)

คำสั่ง ให้นักเรียนชี้ตั้งเครื่องหมาย √ ลงในช่องคำตอบที่ตรงกับความรู้สึกของนักเรียน
การตอบของนักเรียนครั้งนี้ไม่มีผลต่อการเรียนหรือคะแนนของนักเรียนแต่อย่างใด
- ขอให้นักเรียนปฏิบัติต่อตรงกับความรู้สึกมากที่สุดชี้ตั้งเครื่องหมาย √ ลงในช่อง
 หมายเลข 4
- ขอให้นักเรียนปฏิบัติต่อตรงกับความรู้สึกมากที่สุดชี้ตั้งเครื่องหมาย □ ลงใน
 ช่องหมายเลข 3
 ช่องที่นักเรียนปฏิบัติต่อตรงกับความรู้สึกบางเป็นบางครั้งชี้ตั้งเครื่องหมาย □ ลงใน
 ช่องหมายเลข 2
- ขอให้นักเรียนไม่ปฏิบัติหรือแทนจะไม่ปฏิบัติต่อตรงกับความรู้สึกหรือแทนจะไม่
 ตรงกับความรู้สึกชี้ตั้งเครื่องหมาย □ ลงในช่องหมายเลข 1

ในแบบสอบถาม ช่องความคาดหวังคือสิ่งที่นักเรียนมุ่งหวังและประสบการณ์ความจะเป็น
ในช่องความเป็นจริงคือสิ่งที่เป็นจริงที่ทำให้เจริญรูปปฏิบัติต่อด้วยกัน

<table>
<thead>
<tr>
<th>ลำดับข้อ</th>
<th>สามารถตั้ง</th>
<th>ความเห็นชอบ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td>√</td>
</tr>
</tbody>
</table>

จากด้านล่างหมายความว่านักเรียนคิดว่านักเรียนสามารถเรียนรู้รายตามลำดับที่เกิดขึ้น
ก่อน-หลังได้บางเป็นบางครั้ง จึงชี้ √ เครื่องหมายที่ช่องหมายเลข 2 แต่ในความเป็นจริงนักเรียน
สามารถเรียนรู้รายตามลำดับที่เกิดขึ้นก่อน-หลังได้มาก จึงชี้ √ เครื่องหมายในช่องหมายเลข 3
<table>
<thead>
<tr>
<th>ลำดับที่</th>
<th>ชื่อกรุ๊ป</th>
<th>ความแตกต่าง</th>
<th>ความเข้าใจ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>นักเรียนของจั๊ฟเว่อร์ที่มีความคิดเห็นของ เพื่อนในเรื่องที่อ่าน</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-4</td>
<td>นักเรียนของจั๊ฟเว่อร์ที่มีความคิดเห็นเป็นกลุ่ม อย่าง</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-6</td>
<td>นักเรียนของจั๊ฟเว่อร์ที่มีความคิดเห็นเป็นกลุ่ม อย่าง</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-8</td>
<td>นักเรียนของจั๊ฟเว่อร์ที่มีความคิดเห็นเป็นกลุ่ม เพื่อน ๆ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9-10</td>
<td>นักเรียนของจั๊ฟเว่อร์ที่มีความคิดเห็นเป็นกลุ่ม เพื่อน ๆ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-12</td>
<td>นักเรียนของจั๊ฟเว่อร์ที่มีความคิดเห็นเป็นกลุ่ม เพื่อน ๆ</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ลำดับที่</th>
<th>ชื่อกรุ๊ป</th>
<th>ความแตกต่าง</th>
<th>ความเข้าใจ</th>
</tr>
</thead>
<tbody>
<tr>
<td>13-14</td>
<td>นักเรียนของจั๊ฟเว่อร์ที่มีความคิดเห็นเป็นกลุ่ม เพื่อน ๆ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-16</td>
<td>นักเรียนของจั๊ฟเว่อร์ที่มีความคิดเห็นเป็นกลุ่ม เพื่อน ๆ</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ลำดับที่</th>
<th>ชื่อกรุ๊ป</th>
<th>ความแตกต่าง</th>
<th>ความเข้าใจ</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-18</td>
<td>นักเรียนของจั๊ฟเว่อร์ที่มีความคิดเห็นเป็นกลุ่ม เพื่อน ๆ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19-20</td>
<td>นักเรียนของจั๊ฟเว่อร์ที่มีความคิดเห็นเป็นกลุ่ม เพื่อน ๆ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-22</td>
<td>นักเรียนของจั๊ฟเว่อร์ที่มีความคิดเห็นเป็นกลุ่ม เพื่อน ๆ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23-24</td>
<td>นักเรียนของจั๊ฟเว่อร์ที่มีความคิดเห็นเป็นกลุ่ม เพื่อน ๆ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ลำดับรายการ</td>
<td>ความคาดหวัง</td>
<td>ความเป็นจริง</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>-------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
<td></td>
</tr>
<tr>
<td>ปฏิสัมพันธ์ระหว่างนักเรียนครูกับนักเรียนในห้องเรียน</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-26 นักเรียนของข้าพเจ้าได้รับความรู้จากกรองสอนอ่านภาษาอังกฤษของครู</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27-28 นักเรียนของข้าพเจ้าขยับครูสู่สอนวิชาภาษาอังกฤษ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29-30 นักเรียนของข้าพเจ้าสามารถหยุดคุยปรึกษาครูเกี่ยวกับงานอดิเรก และแผนการในอนาคตของนักเรียนได้</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31-32 นักเรียนของข้าพเจ้าตอบวิเคราะห์สอนอ่านภาษาอังกฤษของข้าพเจ้า</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33-34 นักเรียนสามารถพูดคุยกับข้าพเจ้าเกี่ยวกับเรื่องต่าง ๆ ในห้องข้างกับงานที่ข้าพเจ้ามอบหมายได้ทุกเวลาเมื่อมีโอกาส</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>การทำงานเป็นกลุ่มระหว่างนักเรียนกับนักเรียน</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35-36 นักเรียนของข้าพเจ้าชอบพูดคุยหรือคิดค้นงานจากกลุ่มอื่น</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37-38 นักเรียนของข้าพเจ้ามีโอกาสที่จะมีส่วนร่วมในการทำกิจกรรมกับเพื่อน ๆ มาก</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39-40 นักเรียนของข้าพเจ้าชอบการทำงานเป็นกลุ่ม</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix C 4  Teachers’ attitude and view of behaviour in relation to learning English (English version).

Please rate the 40 statements according to the following response format and check/ the column corresponding to your attitude (prior to studying) and your behavior (during study) on the appropriate line opposite each statement:

- Always and nearly always put / on column 4
- Sometimes put / on column 3
- Mostly not put / on column 2
- Never or rarely put / on column 1

Instruction : Check ✓ in the one column of the 4 scales that you feel most describes your feeling. Any response in the questionnaire will not affect your score in the course.

Subgroup : Teaching / Learning Activities

Example:

<table>
<thead>
<tr>
<th>Questionnaire item</th>
<th>This is what ideally should happen</th>
<th>This is what really happens</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1  2  3  4</td>
<td>1  2  3  4</td>
</tr>
<tr>
<td>1. My students like to do activities in groups.</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

Examine the check ✓ on the questionnaire item in the example. If you believe, ideally, prior to learning, that you mostly shouldn’t do activities in the groups, check ✓ on column 2 and, if you sometimes do this in class, check ✓ in column 3.
### Subgroup: Teaching/Learning Activities (24 items)
(expected beliefs and expected actions about teaching/learning activities in English reading classes as subjective norm.)

<table>
<thead>
<tr>
<th>Questionnaire item</th>
<th>This is what ideally should happen</th>
<th>This is what really happens</th>
</tr>
</thead>
<tbody>
<tr>
<td>item no.</td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>

#### Tasks for group work.
1-2 My students like to listen to their friends’ ideas about what they read.
3-4 My students like to do activities in groups.
5-6 My students can understand better when they do activities with friends.
7-8 My student groups finish the work on time.
9-10 My students can make notes to summarize about the group’s ideas.
11-12 My students like to lead their friends in doing activities.

#### Tasks for meaning
13-14 My students like learning vocabulary from pictures.
15-16 My students can guess the meaning of the words from pictures.

#### Tasks for reading Comprehension
17-18 My students like to solve the problem/puzzle in reading assignment.
19-20 My students can put the story into the correct order.
21-22 My students can complete cloze exercises with the correct words.
23-24 My students can find the correct answers to the reading questions.
Subgroup: Classroom interaction (16 items)
(expected beliefs and expected actions about student/teacher and student/student relationships in English reading classes)

<table>
<thead>
<tr>
<th>Questionnaire item</th>
<th>This is what ideally should happen</th>
<th>This is what really happens</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 2 3 4</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item no.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Student / student relationship</strong></td>
</tr>
<tr>
<td>25-26 My students learn more when they study in small groups.</td>
</tr>
<tr>
<td>27-28 My students can have more opportunity to participate in activities among friends.</td>
</tr>
<tr>
<td>29-30 My students like to talk or study in groups.</td>
</tr>
<tr>
<td><strong>Student / teacher relationship</strong></td>
</tr>
<tr>
<td>31-32 My students learn a lot from me.</td>
</tr>
<tr>
<td>33-34 My students like me.</td>
</tr>
<tr>
<td>35-36 My students can discuss their hobbies and their future plans with me.</td>
</tr>
<tr>
<td>37-38 My students like the way I teach them to read English.</td>
</tr>
<tr>
<td>39-40 My students can talk to me informally about their reading assignment.</td>
</tr>
</tbody>
</table>
Appendix D

Initial Reading Comprehension Test (60 items)

Class: Prathom 6

1.30 hours

Direction: There is one word missing in each sentence. Circle the letter of the correct word for each blank. An example has been done for you.

1. แบบทดสอบนี้มี 32 ข้อ ใช้เวลาทำ 1 ชั่วโมง
2. ข้อสอบทั้ง 32 ข้อให้นักเรียนตอบในกระดาษคำตอบที่แจกให้
3. ให้นักเรียนเขียนเครื่องหมาย X ลงในช่อง ที่ตรงกับข้อคำตอบที่คิดถูก
4. ถ้าคิดถูกการเปลี่ยนคำตอบให้ข้อ ข้อความถูกเหมาะสม
don't
5. สำเนาแบบทดสอบพร้อมกระดาษคำตอบก่อนออกจากห้องสอบ
type

(0) I............. a student.

(A) is
(B) am
(C) are
(D) do

A B C D

X

เมื่อต้องการเปลี่ยนคำตอบจากข้อ B เป็นข้อ C ให้ทำเครื่องหมาย X ในกระดาษคำตอบตั้งแต่
Read “Old Ginger Nut’s Holiday” and answer questions 1 to 5.

Old Ginger Nut’s Holiday

One Tree Farm
Kangaroo Valley

Dear Mum

MONDAY
When you left me at Grandad's I cried. Grandad said, "Come on, Old Ginger Nut, dry those tears and let’s see if Aunty Irene has got our tea ready." I don’t like being called 'Old Ginger Nut'! I want to come home.

TUESDAY
Bubbles made such a fuss and licked me all over. Aunty Irene told me not to cuddle him as he had fleas. Grandad said, "A few fleas never hurt anybody." I don’t want to get fleas. I wish I was at home.

WEDNESDAY
When I was helping Aunty Irene collect eggs I found a rat’s nest. Grandad said, "Rotten pests, they’re a rotten nuisance!" I'd like a pet rat when I get home.

THURSDAY
Grandad took me fishing in the creek this afternoon but we didn’t catch any fish. Grandad kept saying, "We’ll have a fish as big as a whale in a minute." Aunty Irene cooked fishfingers for tea. I wish we had a creek at home.

FRIDAY
We had a picnic today. All we could hear were bees buzzing. Grandad said, "It’s going to be a lot quieter next week without you buzzing around!" Aunty Irene says I’d better post this letter today, otherwise I’ll beat it home.

Lots of love from Old Ginger Nut.

P.S. PLEASE let me stay here a little longer. I don’t want to come home yet.

1. Who wrote this letter?

(A) Old Ginger Nut
(B) Grandad

(C) Aunty Irene
(D) Old Ginger Nut’s mum
2. On what day did Old Ginger Nut start to feel a little better about being at his Granddad’s farm?
   (A) Monday  (B) Tuesday  (C) Wednesday  (D) Friday

3. When Granddad says, “It’s going to be a lot quieter next week without you buzzing around!” he really means
   (A) you’re so loud I can’t wait for you to go home.
   (B) your constant noise reminds me of buzzing bees.
   (C) I’ll be able to work harder on the farm when you go.
   (D) I am going to miss you when you’re not here next week.

4. If Old Ginger Nut wrote a story about his holiday the best title would be
   (A) “Holidays with Mum”.
   (B) “My Time at Granddad’s.”
   (C) “Helping Aunty Irene”.
   (D) “Fishing with Granddad.”

5. These pictures are in the wrong order. Put these pictures into the correct order to show what Old Ginger Nut did during the week.

The correct order for the pictures is
(A) 4, 2, 1, 3  (B) 2, 4, 3, 1
(C) 3, 2, 1, 4  (D) 2, 3, 4, 1
Your Skin

Your skin is waterproof, elastic and tough. It protects your body, keeping your insides in and harmful germs out.

Skin is dead on the outside. Dry specks brush off your body every day. New skin grows underneath.

6. Your scalp is part of your...
   (A) leg   (B) arm   (C) head   (D) back

7. What does your skin do to help you cool down?
   (A) It stretches   (B) It sweats   (C) It grows   (D) It moves

8. What stops sweat from dripping into your eyes?
   (A) new skin   (B) nerves   (C) your scalp   (D) eyebrows

9. You can feel pain because your skin
   (A) has tiny nerves   (B) loses dry specks
   (C) has small hairs   (D) sweats salt water
10. A noun is a naming word. Which word in this sentence is a noun?

"New skin grows underneath."

(A) (B) (C) (D)

11. Which of the following words is closest in meaning to the word "elastic"?

(A) tiny (B) dry (C) harmful (D) stretchy

Wombats

A wombat is a marsupial. The baby wombat grows in its mother's pouch. (12) pouch faces backwards so, when the mother digs a burrow, the dirt (13) not get inside it. The burrow is a place for sleeping and for hiding (14) enemies. Wombats have strong front legs (15) claws for digging.

From number 12-15, choose the best words to complete the passage.

12. (A) What (B) An (C) The (D) Which
13. (A) do (B) does (C) done (D) did
14. (A) at (B) in (C) from (D) after
15 (A) and (B) so (C) by (D) if

In the Mirror

16. Which of the following is the title of this poem?

(A) "Elizabeth Fleming" (B) "On the wall" (C) "Looking back again" (D) "In the Mirror"

17. Which of these words from the poem rhymes with "stare"?

(A) "are" (B) "there" (C) "eyes" (D) "small"

18. The face that is mentioned in the poem looks (A) rather large (B) happy (C) round and pink (D) rude

19. Which of these words from the poem tells you that the poem is about a girl (A) "she" (B) "it" (C) "me" (D) "I"
For steps 1 to 8 (items 20 to 27).
Match the pictures (A, B, C or D) with the sentence about how to make an apple cake.

HOW TO MAKE AN APPLE CAKE

20. **Step 1**  Peel the apples and slice them.

![Picture Options](A) ![Picture Options](B) ![Picture Options](C) ![Picture Options](D)

21. **Step 2**  Put the apples in a frying pan with some water.

![Picture Options](A) ![Picture Options](B) ![Picture Options](C) ![Picture Options](D)

22. **Step 3**  Put the apples in a frying pan with some water and a bit of salt, and boil them for 20 minutes.

![Picture Options](A) ![Picture Options](B) ![Picture Options](C) ![Picture Options](D)

23. **Step 4**  Mash the apples.

![Picture Options](A) ![Picture Options](B) ![Picture Options](C) ![Picture Options](D)
24. **Step 5**  Put the mashed apples, the flour and the butter into a bowl and mix them with a fork.

25. **Step 6**  Put the oil into the frying pan, then fry the apple cake mixture until it is brown on the both sides.

26. **Step 7**  Cover the cake with the cheese.

27. **Step 8**  Put it in a dish and keep it warm in the oven.
How to Make a Kazoo

What am I making?
You are making a kazoo, a simple musical instrument

What do I need?
A comb
A piece of greaseproof paper
Scissors
Ruler

What are the six steps (things I have to do?)
1. Cut the greaseproof paper into a seven-centimetre square.
2. Fold the paper in half.
3. Place the comb inside the folded paper.
4. Hold the paper—with the comb inside—to your lips.
5. Hum through the paper.
6. Slide the kazoo back and forth as you hum.

28. A kazoo is a type of
   (A) grease proof paper.  (B) material.
   (C) music            (D) musical instrument.

29. The information about the six steps tells me...
   (A) how to make a kazoo.
   (B) what materials and equipment are needed.
   (C) how long it takes to make a kazoo
   (D) where to buy the materials.

30. What do I need to complete step 1?

31. How many times is the paper folded?
   (A) once    (B) twice    (C) three times    (D) four times
32. An adjective is a word that describes a noun.

Which of the following underlined words is an adjective?

“The goal is to make a kazoo, a simple music instrument.”

(A) (B) (C) (D)

33. The sound of the kazoo can first be heard during step

(A) three (B) four (C) five (D) six

Fill in the missing words in the sentence under each of the pictures below by choosing them from the following list.

34. He has got.................

(A) a headache (B) a cold (C) a stomach ache (D) a toothache

35. She has got.................

(A) a headache (B) a cold (C) a stomach ache (D) a toothache
36. He has got .................
(A) a headache  (B) a cold  (C) a stomach ache  (D) a bad cough

37. She has got ..................
(A) a headache  (B) a cold  (C) a toothache  (D) a bad cough

38. He has got .................
(A) a headache  (B) a cold  (C) a toothache  (D) a bad cough
In numbers 39 - 43, the children are sick. Match the suggestions with the sickness. Match the sentences with pictures.

39.

Sickness: I have got a pain on my knee.

Suggestion: ........................................

(A) Why don't you see the dentist?

(B) Why don't you go home and lie down?

(C) Why don't you sit down?

(D) Why don't you use some pain relieving cream?

40.

Sickness: I have got flu.

Suggestion: ........................................

(A) Why don't you see the dentist?

(B) Why don't you go home and lie down?

(C) Why don't you use some pain relieving cream?

(D) Why don't you see the doctor?
41.

Sickness: I have got a backache.

Suggestion: ..............................................................

(A) Why don’t you see the dentist?
(B) Why don’t you use some cream?
(C) Why don’t you go home and lie down?
(D) Why don’t you see the ophthalmologist?

42.

Sickness: I have got a headache.

Suggestion: ..............................................................

(A) Why don’t you see the dentist?
(B) Why don’t you take an aspirin?
(C) Why don’t you use some pain relieving cream?
(D) Why don’t you go home?

43.

Sickness: I have got a toothache.

Suggestion: ..............................................................

(A) Why don’t you see the dentist?
(B) Why don’t you go home and lie down?
(C) Why don’t you use some pain relieving cream?
(D) Why don’t you see the doctor?

From number 44-47, choose the best words to complete the passage.

**A Naught Boy’s Reward**

There is a monkey in the ...44..... He wants to eat a banana so he walks to a .....45...... tree. He sees a snake. He runs.....46......... A boy shoots it with a slingshot. He runs away very.....47....... and picks up the boy’s cap from the ground. The boy is very angry.

44. (A) room (B) basket (C) tree (D) bench
45. (A) mango (B) lemon (C) jackfruit (D) banana
46. (A) away (B) above (C) along (D) by
47. (A) well (B) slow (C) quickly (D) easy

**The Ostriches**

Ostriches are the largest birds in the world. They have feathers but no wings. The habits of ostriches are unusual. They will eat almost anything. People have found keys, sand, stones even money in their stomachs. When the females lay their eggs, they use the same place. One egg is enough to make an omelette for twelve people. Ostriches run very fast, sometimes 64 kilometers per hour. If an ostrich has to fight it kicks with its long legs and two sharp toes.

48. What are the largest birds in the world?
   (A) parrots (B) doves (C) ostriches (D) peacocks
49. Do the ostriches have wings?
   (A) Yes they do  (B) No, they do not
   (C) Yes, sure (D) A and B are correct
50. How fast do they run? They can run .......... kilometers per hour.
   (A) 64 (B) 70 (C) 46 (D) 50
51. What do ostriches do when they fight? They ............
   (A) hit (B) kick (C) bite (D) bump
52. What have people found in ostrich stomachs?

- (A) money  
- (B) keys  
- (C) stones  
- (D) all are correct

53. How many ostrich eggs do we need to make an omelette for twelve people?

- (A) 1  
- (B) 2  
- (C) 3  
- (D) 4

54. It's very tall. It cannot fly. It lays big eggs.

What's it?

- (A) a bear  
- (B) a dove  
- (C) an ostrich  
- (D) a parrot

---

**The Floating Markets**

The floating markets at Damnoensaduak are on water. It is in Ratchaburi province. Long ago the king had an idea to bring water to the farms. He asked the people to dig a long canal between two rivers. Now there are more than 200 canals to take their fruit and vegetables to market by boat.

People go to buy things from 7 am to 11 am at Damnoensaduak. The farmers sell their fruit, vegetable and other fresh goods. Sellers, buyers, and tourists come to enjoy themselves at the floating markets.

55. Where is Damnoensaduak?

- (A) in Bangkok  
- (B) in Nakhon Pathom  
- (C) in Petchaburi  
- (D) in Ratchaburi

56. The farmers sell fruit and vegetable in the floating market on .........

- (A) water  
- (B) land  
- (C) market  
- (D) shop

57. Who asked the people to dig a long canal?

- (A) the students  
- (B) the queen  
- (C) the king  
- (D) the farmers

58. How many canals are there now? There are more than.......

- (A) twenty  
- (B) one hundred  
- (C) two hundred  
- (D) three hundred

59. How do the farmers take their fruit and vegetables to market?

- (A) by car  
- (B) by road  
- (C) by boat  
- (D) by plane

60. If you want to buy things at the floating market, what time can you go?

- (A) 6.15 am  
- (B) 8.40 pm  
- (C) 10.25 am  
- (D) 11.05 am
Appendix E

Final Reading Comprehension Test items

After Rasch analysis (32 items)

Class: Prathom 6

1.30 hours

Direction: There is one word missing in each sentence. Circle the letter of the correct word for each blank. An example has been done for you.

1. แบบทดสอบฉบับนี้ มี 32 ข้อ ใช้เวลาทำ 1 ชั่วโมง
2. ข้อสอบทั้ง 32 ข้อให้นักเรียนตอบในกระดาษคำตอบที่แจกให้
3. ให้นักเรียนจัดเครื่องหมาย X ลงในช่อง ที่ตรงกับข้อคำตอบที่ต้องการ
4. ถ้าต้องการเปลี่ยนคำตอบให้ขีด = ทับเครื่องหมาย X เดิมเสียก่อน
5. ส่งแบบทดสอบพร้อมกระดาษคำตอบก่อนออกจากห้องสอบ

ตัวอย่าง

(0) I ........ a student.

(0) จะเห็นว่าคำตอบคือข้อ B เมื่อจะตอบให้ตำแหน่งรวม
X ให้กระดาษคำตอบดังนี้

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

เมื่อต้องการเปลี่ยนคำตอบจากข้อ B เป็นข้อ C ให้ตำแหน่งรวม = ให้กระดาษคำตอบดังนี้

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
I. Understand the main idea
Read “In the Mirror” and answer these questions.

In the Mirror

In the mirror
On the wall
There’s a face
I always see;
Round and pink,
And rather small,
Looking back again
At me.

It is very
Rude to stare,
But she never
Thinks of that,
For her eyes are
Always there;
What can she be
Looking at?

(old 16.) new2. Which of the following is the title of this poem?
(A) “Elizabeth Fleming”
(B) “On the wall”
(C) “Looking back again”
(D) “In the Mirror”

(old 18.) new 17. The face that is mentioned in the poem looks
(A) rather large
(B) happy
(C) round and pink
(D) rude

II. Understand the Vocabulary

(old 19) new 31. Which of these words from the poem tells you that the poem is about a girl?
(A) “she”
(B) “it”
(C) “me”
(D) “I”

Choose the best words to complete four passages below.

The Floating Markets

The floating markets at Damnoensaduak are on water. It is in Ratchaburi province. Long ago the king had an idea to bring water to the farms. He asked the people to dig a long canal between two rivers. Now there are more than 200 canals to take their fruit and vegetables to market by boat.

People go to buy things from 7 am to 11 am at Damnoensaduak. The farmers sell their fruit, vegetable and other fresh goods. Sellers, buyers, and tourists come to enjoy themselves at the floating markets.

(old 57) new 4. Who asked the people to dig a long canal?
(A) the students  (B) the queen  (C) the king  (D) the farmers

(old 58) new 9. How many canals are there now? There are more than……
(A) twenty  (B) one hundred  (C) two hundred  (D) three hundred
The Ostriches

Ostriches are the largest birds in the world. They have feathers but no wings. The habits of ostriches are unusual. They will eat almost anything. People have found keys, sand, stones even money in their stomachs. When the females lay their eggs, they use the same place. One egg is enough to make an omelette for twelve people. Ostriches run very fast, sometimes 64 kilometers per hour. If an ostrich has to fight it kicks with its long legs and two sharp toes.

(10) Do the ostriches have wings?
(A) Yes they do (B) No, they do not
(C) Yes, sure (D) A and B are correct

(15) What are the largest birds in the world?
(A) parrots (B) doves (C) ostriches (D) peacocks

Wombats

A wombat is a marsupial. The baby wombat grows in its mother’s pouch. ___(20)___ pouch faces backwards so, when the mother digs a burrow, the dirt does not get inside it. The burrow is a place for sleeping and for hiding from enemies. Wombats have strong front legs and claws for digging.

Choose the best words to complete the passage.

(20) (A) What (B) An (C) The (D) Which

A Naughtly Boy’s Reward

There is a monkey in the ___5___. He wants to eat a banana so he walks to a ___22___ tree. He sees a snake. He runs___24___. A boy shoots it with a slingshot. He runs away very___23___ and picks up the boy’s cap from the ground. The boy is very angry.
Your skin is waterproof, elastic and tough. It protects your body, keeping your insides in and harmful germs out.

Skin is dead on the outside. Dry specks brush off your body every day. New skin grows underneath.

Your hair keeps in heat and protects your scalp.

Skin contains tiny nerves that can sense touch, heat, cold, moisture and pain.

Skin is stretchy and moves when you do.

Skin is waterproof. It protects you when you wash or go swimming.

When you are hot, your skin sweats salt water to cool you down.

If you are cold, the hairs on your skin stand up and trap warm air to keep you warm.

Read “Your Skin” and answer question 32
Which of the following words is closest in meaning to the word "elastic"?

(A) tiny  (B) dry  (C) harmful  (D) stretchy

III. Sequence the order.

For steps 1 to 7 (items 6 to 12)
Match the pictures (A, B, C or D) with the sentence about how to make an apple cake.

**HOW TO MAKE AN APPLE CAKE**

Step 4  Put the mashed apples, the flour and the butter into a bowl and mix them with a fork.

(A)  (B)  (C)  (D)

Step 3  Mash the apples.

(A)  (B)  (C)  (D)
Step 6  Cover the cake with the cheese.

Step 5  Put the oil into the frying pan, then fry the apple cake mixture until it is brown on both sides.

Step 2  Put the apples in a fryingpan with some water and a bit of salt, and boil them for 20 minutes.
Step 1  Peel the apples and slice them.

Step 7  Put it in a dish and keep it warm in the oven.

How to Make a Kazoo

What am I making?
You are making a kazoo, a simple musical instrument

What do I need?
A comb  Scissors
A piece of greaseproof paper  Ruler

What are the six steps (things I have to do?)
1. Cut the greaseproof paper into a seven-centimetre square.
2. Fold the paper in half.
3. Place the comb inside the folded paper.
4. Hold the paper-with the comb inside-to your lips.
5. Hum through the paper.
6. Slide the kazoo back and forth as you hum.
(old 29) new 11. The information about the six steps tells me...

(A) how to make a kazoo.
(B) what materials and equipment are needed.
(C) how long it takes to make a kazoo
(D) where to buy the materials.

(old 30) new 25. What do I need to complete step 1?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(A)</td>
<td></td>
</tr>
<tr>
<td>(B)</td>
<td></td>
</tr>
<tr>
<td>(C)</td>
<td></td>
</tr>
<tr>
<td>(D)</td>
<td></td>
</tr>
</tbody>
</table>

Old 32) new 30. An adjective is a word that describes a noun.

Which of the following underlined words is an adjective?

"The goal is to make a kazoo, a simple music instrument."

(A) (B) (C) (D)

IV. Understand the meaning using pictures

Fill in the missing words in the sentence under each of the pictures below by choosing them from the following list.

(A) a headache (B) a cold (C) a stomach ache (D) a bad cough

(old 36) new 1. He has got..................
(Old 34) new 18.

He has got.................

(A) a headache (B) a cold (C) a stomach ache (D) a toothache

(old 35) new 19.

She has got.................

(A) a headache (B) a cold (C) a stomach ache (D) a toothache

(old 37) new 21.

She has got.................

(A) a headache (B) a cold (C) a toothache (D) a bad cough

(old 38) new 27.

He has got.................

(A) a headache (B) a cold (C) a toothache (D) a bad cough
In numbers 21 - 24, the children are sick. Match the suggestions with the sickness.
Match the sentences with pictures.

(21) Sickness: I have got a toothache.
Suggestion: .................................................................
(A) Why don’t you see the dentist?
(B) Why don’t you go home and lie down?
(C) Why don’t you use some pain relieving cream?
(D) Why don’t you see the doctor?

(22) Sickness: I have got a pain on my knee.
Suggestion: .................................................................
(A) Why don’t you see the dentist?
(B) Why don’t you go home and lie down?
(C) Why don’t you sit down?
(D) Why don’t you use some pain relieving cream?

(23) Sickness: I have got a headache.
Suggestion: .................................................................
(A) Why don’t you see the dentist?
(B) Why don’t you take an aspirin?
(C) Why don’t you use some pain relieving cream?
(D) Why don’t you go home?

(old 40) new 29.

Sickness: I have got flu.
Suggestion: ..........................................................
(A) Why don’t you see the dentist?
(B) Why don’t you go home and lie down?
(C) Why don’t you use some pain relieving cream?
(D) Why don’t you see the doctor?
Appendix F  Trainee Teachers’ journals entries about the experimental method of teaching (Thai version).

ชื่อหนังสือภาษาไทย  น.ส.สมร
ชื่อโรงเรียน โรงเรียนเทพบาล 2 วัดช่องลม

บันทึกสังเกตพฤติกรรมการสอน

บทที่ 1-2

เรื่อง  Pim’s family and their occupations.

บทที่ 1

นักเรียนมีไม่ค่อยเข้าใจกระบวนการของ cooperative learning ยิ่งไปกว่ายังคง
คงเรื่องอีกหนึ่งที่น่าสนใจคือการแบ่งหน้าที่ติดต่อกับผู้สอนด้วย.

บทที่ 2

เป็นคำแนะนำของการเรียนวิธี cooperative learning นักเรียนต้องเรียนมาก่อน เพื่อ
จากต้องจัดได้ เก้า และทดลองทันทีในกลุ่มว่าใครจะทำหน้าที่ที่ 2 3 หรือ 4 นัก
เรียนบางคนอาจทำหน้าที่ของตนเองไม่ได้ต้องอยู่ในกลุ่มที่ตนเองรู้จักติดตาม
กระทำอีกครั้ง เวลาส่วนใหญ่จะไปกับการจัดโครงภารกิจและการตอบกลับภายใน
กลุ่ม นักเรียนเข้าใจ subject pronoun และ possessive pronoun ได้ง่ายขึ้นเนื่อง
จากใช้แผ่นกระดาษทำให้นักเรียนเข้าใจอย่างชัดเจน นักเรียนพบว่าได้รับความรู้จากการ
สอนอ่านของครูและบอกถึงขอคุณูปสน

บทที่ 3

ช่วงที่นักเรียนฉุนที่ 3 มีการเปลี่ยน นักเรียนสุขภาวะดีกว่าที่จะออกมาบทบ นักเรียนแต่
ละคนทำหน้าที่ตามหน้าที่ที่ได้รับได้ไม่ยากโดยเฉพาะนักเรียนคนที่มีหน้าที่คอย
กระชับเพื่อน นักเรียนชอบพึ่งความคิดเห็นของเพื่อนจากในเรื่องที่อ่านและ
โอกาสที่ส่วนใหญ่ในการทำกิจกรรมกันเพื่อนมาก แต่กระษัตร์เข้าใจเนื่องจากเรื่องนี้
โดยสุขภาพดีถูกต้องตามเนื้อหาเป็นคำพิพก นักเรียนน่าจะทีทบทับที่มี
หัตถศิลป์ที่ทำซ้ำแล้วหลายครั้งและเรียนรู้ค่าคืนจากสุขภาพในควบ
เรื่องที่ 2 นักเรียนมั่นใจกว่าสามารถคาดตามความหมายของค่าคืนจากสุขภาพได้มาก
นักแต่ยังไม่สามารถคาดตามความหมายของค่าคืนจากสุขภาพได้มาก

บทที่ 4

จากกระชับกิจกรรมการทำจากกลุ่ม พบว่า นักเรียนแต่ละกลุ่มช่วยกันออกความคิดติ
นักเรียนจะเรียนรู้ที่สูงขึ้นในคิดต่างๆ ในกลุ่มได้เป็น คะแนนจากการตอบ
คำถามใน exercise 1 และ exercise 2 สร้างคู่ข้อมูลในระดับเดิมมาก โดยสามารถ
เดิมค่าที่ถูกต้องลงในช่องว่างและเรียนค่าตอบที่ถูกต้องลงได้
บทที่ 5 กลุ่มที่ได้คะแนนสูงสุดมี 2 กลุ่ม จึงนำขั้นตอนเบื้องต้นเข้าไปในกระบวนการพิจารณา

อุปสรรคปัญหา นักเรียนเสียเวลาไปกับการจัดสิ่งที่ไม่จำเป็นหรือไม่จำเป็นที่จะต้องทำ บางครั้งนักเรียนที่มีบัตรสอบของตนเองไม่ได้

การแก้ไข พยายามกระชับเวลาในแต่ละช่วง และติดสติกเกอร์บนหน้าที่ใช้เวลา

ข้อเสนอแนะ วันนี้รักษาการอ้างอิงอยู่ในบู๊ดท์ที่สูงกว่าเป็นอย่างมาก ทำให้นักเรียนตัดใจได้กลับบ้านอย่างเดียว ควรจัดไว้ในช่วงเข้าหรือก่อนที่ไม่ใช่ก่อนสุดท้าย

บทที่สังเกตพฤติกรรมการสอน

บทที่ 3-5 เรื่อง Personal Feelings.

ขั้นตอนที่ 1 นักเรียนรับทราบว่าจะประสบการเรียนรู้และเข้าใจการสับเปลี่ยนหน้าที่ในกลุ่มรวดเร็วทันท่วงที นักเรียนจำต้องพูดหน้าที่ได้

ขั้นตอนที่ 2 นักเรียนแก้ไขความเข้าใจและภาษาได้ มีบางภาษาที่ไม่เข้าใจ จึงใช้วิธีสื่อคำเรื่อง เช่นคำ interested, surprised ว่าภาษา happy นักเรียนตัดคำเป็นรูป "ดีใจ" เป็นคำต้องอย่างมาก ว่าที่กลับและแสดงท่าทางประกอบ มีการนำการออกเสียงทำงคำอย่างมาก เนื่องจากตัวใหญ่ทำให้เสียเสียง ed ออกเสียง /d/ , /t/ , และ /id/ ต้องคำว่า lazy ออกเสียงแบบ voice sound ที่ก่อนหน้านี้เพื่อให้นักเรียนแตะต่องอกเสียงได้จริง ๆ ส่วน verb pattern นักเรียนเข้าใจเร็ว เนื่องจากมีพื้นฐานอยู่แล้ว ที่ 3 เป็น เอกพจน์สูงสุดที่ 3 กริยาตัดคิ้ม s นักเรียนเข้าใจเร็ว แต่หาไม่ได้รับความรู้จากการสอนอ่านของครูทุกคน นักเรียนเข้าใจต้องอธิบายในบทที่ 4 และชอบใช้การสอนอ่านภาษาอังกฤษของครูในบทที่ 3 และ 5

ขั้นตอนที่ 3 นักเรียนแตะต่องทำหมาที่เสียหมดความ นักเรียนชอบพิจารณาความคิดเห็นของเพื่อนช่วงที่ออกมา present นักเรียนที่มีหน้าที่ออกทำท่าทางต่าง ๆ ตามรูปเป็นที่ต้องกล่าวขันกันในห้อง นักเรียนชอบทำกิจกรรมกลุ่มโดยชอบพูดคุยกันและเรียนจากกลุ่มอย่างมากจากการสังเกตพบว่านักเรียนเข้าใจง่ายที่เรียนได้ดีกว่าเนื่องจากทำกิจกรรมรวมกันเพื่อน ๆ ในบทที่ 5 นักเรียนพอจะเขียนบันทึกสรุปแนวคิดต่าง ๆ ได้บ้างและสามารถเรียนรู้เรื่องที่เกิดขึ้นก่อนหลังได้ในบทที่ 4-5 นักเรียนพร้อมเป็นผู้ร่วมในการทำกิจกรรมกลุ่มในบทที่ 5 นักเรียนที่เข้าเวลาสามารถคุยกันเพื่อนให้ทำงานได้เสร็จตามเวลา นักเรียนมีโอกาสที่จะร่วมในการ
การทำกิจกรรมเพิ่มเติมๆ ในบทที่ 4-5 นักเรียนชอบการทำงานเป็นกลุ่มแบบฟีนิ คบทที่ 3-4 และเรียนมีความสามารถที่จะพูดคุยกับครูเกี่ยวกับเรื่องต่างๆ หรือหัวข้อ อันที่เกี่ยวข้องกับงานที่ครูมอบหมายได้ทุกเวลาเมื่อมีโอกาสในบทที่ 5 มีนักเรียนมาพูดถึงการได้ทำกิจกรรมแบบแผนการในอนาคตของตนเองใน

ขั้นที่ 4 นักเรียนแต่งกลุ่มสรุปแล้วตอบ คะแนนส่วนใหญ่ได้มากกว่า 10 คะแนน

ขั้นที่ 5 วันนี้นักเรียนได้คะแนนเต็มจานวนหน่อยเพราะส่วนใหญ่จะสะกดตลอด

อุปสรรค/ปัญหา นักเรียนออกเสียง lazy ไม่ค่อยได้

การแก้ไข ตั้งใจที่จะสอน โดยให้ใช้นั้นๆที่ลากอลงจับความแตกต่างได้

ข้อเสนอแนะ -

บทที่สี่แลกสภาพพฤติกรรมการสอน

คำที่ 6-8 เรื่อง Potato Cake.

ขั้นที่ 1 นักเรียนเรียนรู้ความกุตสัญญารถการเรียนรู้ ตั้งแต่จะได้ทำ Potato cake จริงๆ นักเรียนไม่ลับสนในการเปลี่ยนหน้าที่

ขั้นที่ 2 นักเรียนมีความสนใจการทำอาหารจริงๆและสามารถบอกความหมายจากภาษาได้ในทุกคBAB นักเรียนเข้าคัดหลักที่ได้เนื่องจากเป็นเรื่องใกล้ตัว ได้ทำอาหารจริงๆ เจอถึงอุปกรณ์จริงๆ นักเรียนเข้าใจ countable noun กับ uncountable noun ได้ง่ายเนื่องจากใช้คำว่า chart บัตรภาพ และของจริง เช่น เกลือ น้ำ ฯลฯ นักเรียนเข้าใจ verb pattern ได้รวดเร็ว เพราะเป็นรูปประโยคที่ใช้กับคำตัวอย่างเพื่อช่วยให้นักเรียนทำความเข้าใจได้เร็วขึ้น นักเรียนชอบเรียนคำศัพท์จากบุรุษภาพทุกคBAB นักเรียนได้รับความรู้จากการสอนอันของครูใน

คำที่ 6 และเรียนชอบมีความสึกสันภาษาอังกฤษในบทที่ 8 นักเรียนบอกว่าชอบวิธีการสอนอ่านภาษาอังกฤษของครูในบทที่ 7-8

ขั้นที่ 3 นักเรียนใช้เวลาในการอ่านและทำความเข้าใจงาน เนื่องจากต้องเปิด dictionary เพื่อหาความหมายคำพิทักษ์ เช่น mixture, both, etc. นักเรียนชอบกับเกมปัญหาในบทเรียนได้และช่วยกันเรียนสักตัวการทำ potato cake ที่เกิดขึ้นก่อน-หลังได้ใน exercise 1 ได้ถูกต้องทุกคำตอบแม้ว่าและสามารถแก้ปัญหาและชอบพื้นความคิดเห็นของเพื่อนๆ ในเรื่องที่ย่านทุกคำตอบ จาก
การสังเกตุพบว่านักเรียนชอบทำการกิจกรรมกลุ่ม นักเรียนเข้าใจบทเรียนได้ดีเมื่อทำการกับเพื่อนๆทุกคน สามารถดีมีคำที่ถูกต้องรองในช่วงเวลาที่นักเรียนสามารถตอบคำถามได้ในทุกคูณ นักเรียนชอบทำการกิจกรรมกลุ่มอยู่ทุกคูณ นักเรียนเรียนรู้แบบกิจกรรมงานที่นักเรียนสนใจและมีแนวคิดต่างๆของเพื่อนในกลุ่มได้ในคูณที่ 8 และชอบเป็นผู้นำในการทำการกิจกรรมกลุ่มทุกคูณ นักเรียนสามารถดูมเพื่อนให้ทำงานได้เสร็จตามเวลาในคูณที่ 8 และ 8 สามารถพูดคุยกับคูณที่ทำกิจกรรมและแผนการในอนาคตของนักเรียนได้ในทุกคูณ นักเรียนสามารถบอกบริบูรณ์ติดพื้นผิวปัญหาความเข้าใจต่างๆของเรื่องได้ในทุกคูณ นักเรียนชอบพูดคุยหรือศึกษาจากกลุ่มอยู่ในคูณที่ 8 และ 8 และนักเรียนมีโอกาสมีส่วนร่วมในการทำการกิจกรรมกับเพื่อนๆมากทุกคูณ นักเรียนชอบการทำงานเป็นกลุ่มแบบมีคูณที่ 8 และ 8 สามารถพูดคุยกับคูณที่ทำกิจกรรมเรื่องต่างๆหรือหัวข้ออื่นที่เกี่ยวข้องกับงานที่คูณมอบหมายได้ทุกเวลาเมื่อมีโอกาสในคูณที่ 8

ชั่วที่ 4
นักเรียนหญิงส่วนใหญ่ช่วยกันทำงานแบบติดต่อกันไปถึงการเรียนลัดับ การออกมาก present บทหน่อย นักเรียนไม่มีส่วนร่วมในการทำการกิจกรรมกับเพื่อนๆมาก แต่ นักเรียนเข้าใจบทเรียนได้ทั้งนักเรียนหญิงในกลุ่มแสดงสิ่งมีนักเรียนทำ exercise 2 ได้ เพราะเป็น exercise ที่ล้อประโยชน์ของเรื่อง potato cake

ชั่วที่ 5
นักเรียนกลุ่มที่ได้คะแนนสูงสุดเรื่องนี้ไม่ได้คะแนนเต็มเพราะเข้าใจจำกัดคิด จึงติดบอร์ดให้เพื่อนๆกลุ่มอื่นๆดู

อุปสรรค/ปัญหา
1. นักเรียนเสี่ยงเวลาในการใช้ dictionary
2. นักเรียนไม่เข้าใจคำถามเกี่ยวกับเนื้อเรื่อง
3. นักเรียนเขียนคำศัพท์ยังไม่ถูกต้องที่คูณ

การแก้ไข
1. แนะนำวิธีการใช้ dictionary และฝึกใช้
2. ติดป้ายคำถามที่นักเรียนไม่เข้าใจนั้น
3. ให้นักเรียนฝึกเขียนคำถามสำคัญๆและให้รางวัลคนที่เขียนถูกต้องมากที่สุด

ข้อเสนอแนะ -
บทที่ 9-11 เรื่อง A Special Bird.

ขั้นที่ 1
นักเรียนรู้จักหัวที่ดีขึ้นมาก

ขั้นที่ 2
นักเรียนซ้อมอุปสรรภาษเพราะไมเคยเรียนเรื่องกรรภแทนทศ เมื่อเห็นรูปที่สามารถเดาความหมายของคำพิพนท์ได้หมดทุกคับ เข้าใจคำที่อธิบายถึง features ได้ค่อนข้างดี นักเรียนได้รับความรู้จากกรรภสองอย่างของครูในคบที่ 9
นักเรียนแยกว่านักเรียนเรียนครอบครัวยุคล่วงหายากุทธในคบที่ 10-11

ขั้นที่ 3
นักเรียนแต่ละคนทำหน้าที่ได้ดี นักเรียนจะเรียนรู้คำพิพนท์

จากกรรภมากมายในทุกคำแต่ละความหมายของคำพิพนท์ไม่ค่อยจะได้ นักเรียนสามารถดูเพื่อให้ทำงานได้เสร็จตามเวลาที่กำหนดในคบที่ 10-11 นักเรียนสามารถเดาคำที่ถูกต้องในข้อที่ถามได้เป็นประโยคที่สมบูรณ์ได้ในทุกคับและสามารถตอบคำจากโดยเขียนคำจากกรรภที่ถูกคัดในข้อที่ถามได้ถูกต้องในทุกคับด้วย นักเรียนซ้อมอุปสรรภาษเพื่อให้กรรภที่สำคัญมีคุณค่าไม่ค่อยจะได้กรรภที่สำคัญได้ นักเรียนซ้อมอุปธิ์นี้เพราะขุนเป็นผู้นำในการทำกรรภกลุ่มมากในทุกคับ นักเรียนเรียนซ้อมอุปธิ์และเรียนจากกลุ่มอย่างในคบที่ 11 และขอทำงานเป็นกลุ่ม นักเรียนมีความร่วมในการทำกรรภกลุ่มเพื่อ สามารถอธิบายเป็นต้นเพื่อแก้ปัญหาความเข้าใจของข้อที่ถามได้ในคบที่ 10-11 นักเรียนสามารถเรียนรู้เรื่องราวที่เกิดขึ้นเป็น-หลังได้ในคบที่ 10-11 นักเรียนมีโอกาสที่จะทำกรรภอย่างนี้และขอทำงานเป็นกลุ่มมากในทุกคับสามารถซ้อมอุปธิ์ของภึกษาที่เกี่ยวกับคำและแผนการนั้นๆในแบบของนักเรียนได้ในคบที่ 10-11 และขอการทำกรรภแล้วของครูในคบที่ 10-11 กลับที่จะปรับทำหรือพูดคุยกับครูเกี่ยวกับเรื่องต่างๆ หรือหาข้ออื่นๆ ที่เกี่ยวกับกรรภที่ครูมอบหมายได้ทุกวันตามที่มีโอกาสในคบที่ 10-11

ขั้นที่ 4
นักเรียนสามารถเดาคำที่ถูกต้องในข้อที่ถามให้เป็นประโยคที่สมบูรณ์ได้ และสามารถจำความหมายของคำพิพนท์ขณะที่ทำงานแล้วได้ใน exercise 5 นักเรียนชอบทำ mind mapping มากโดยสามารถเรียนสำหรับที่เกิดขึ้นเป็น-หลังได้

ขั้นที่ 5 มีกลุ่ม 1 กลุ่มที่ได้ค่อนข้างสุดยอดได้นำผลงานเข้ามาถวาย

อุปสรรค/ปัญหา
1. เนื้อหามากมายเกินไป ทำให้ไม่เข้าใจในการอ่านมาก
2. ส่วนใหญ่เป็นคำพิพนท์ใหม่ที่นักเรียนไม่เคยพบจึงต้องใช้ dictionary
บัณฑิตสังเกตพฤติกรรมการสอน

บทที่ 12-13 เรื่อง Sickness.

ขั้นที่ 1 นักเรียนรับทราบจุดประสงค์การเรียนรู้ นักเรียนปฏิบัติรู้หน้าที่ได้

ขั้นที่ 2 นักเรียนดูภาพแล้วรู้กันว่าเป็นอะไร นักเรียนเข้าใจการใช้ has got กับ have got ได้ดี เพราะท่านมีประสบการณ์ที่มีแบบฝึกไร้ has ส่วนประจำตาม พฤกษ์ใจใช้ have นักเรียนชอบเรียนคำศัพท์จากอรุณภาพมากในทุกษาและสามารถตกความหมายของคำศัพท์จากอรุณภาพได้ในทุกษาได้ นักเรียนได้รับความรู้จากการสอนอธินของครูในบทที่ 1-2 แต่นักเรียนชอบครูผู้สอนในบทที่ 13

ขั้นที่ 3 นักเรียนเรียนรู้ความคิดถึงที่จะทำงานที่บริการด้วยตนเองได้ นักเรียนชอบพิจารณาเห็นของเพื่อนในที่ที่สุดทุกษาและนักเรียนชอบทำกิจกรรมกลุ่มอยู่ทุกษาด้วย นักเรียนที่มีหน้าที่จดบันทึกสามารถเรียนบันทึกสรุปความคิดเห็นของเพื่อนได้ในบทที่ 13 นักเรียนที่มีหน้าที่จับเวลาสามารถดูมีเพื่อนๆให้ทำงานเสร็จตามเวลาได้ในบทที่ 13 นักเรียนผ่านความพยายามทำ Exercise 1 ที่เป็นงานกลุ่มได้ สามารถเรียนเรื่องราวที่เกิดขึ้นก่อน-หลังได้ในบทที่ 13 และสามารถตัดคำที่ถูกต้องในช่องว่างให้เป็นประโยคที่สมบูรณ์ได้ในทุกษา นักเรียนชอบการทำงานเป็นกลุ่มแบบนี้จึงทุกษาด้วย สามรถออกมา present หน้าห้องได้ดีโดยเฉพาะอย่างยิ่งของการเขียนประโยคได้เหมือนจริง นักเรียนสามารถบอกวิธีปฏิบัติเพื่อสนุกปัญหาความเข้าใจต่างๆ ของงาน Điềuได้ในทุกษา นักเรียนเข้าใจบ่อยเรียนได้ในทุกษาเมื่อทำงานกับเพื่อนๆ ในบทเรียนนั้นนักเรียนชอบเป็นผู้นำในการทำกิจกรรมกลุ่มทั้งบทที่ 12-13 นักเรียนชอบวิธีการสอนอานาจการจัดการครูอยู่ทุกษา สามารถครูปฏิบัติการกับบ้านฉันอดิเรกและแผนการเรียนมากพอต่อตนเองได้ในทุกษาและสามารถทดสอบครูกับครูที่มากับ เรื่องต่างๆ หรือหัวข้ออื่นๆที่เกี่ยวข้องกับงานที่ครูมอบหมายได้ทุกว่าะเมื่อมีโอกาสในทุกษา

229
บทที่สิ้นสุดเหตุการณ์การสอน

งบ 14 เรื่อง Sicknesses and Remedies.

บทที่ 1 นักเรียนฟังจุดประสงค์การเรียนรู้จากครู หลังจากนั้นจึงพูดคุยกันเกี่ยวกับวิธีการรักษาอย่างไร ๆ

บทที่ 2 นักเรียนสุขภาพแล้วสามารถถ่ายความหมายคำศัพท์จากข้อความได้ นักเรียนชอบเรียนคาย
เรียนคำศัพท์จากข้อความหากนักเรียนสามารถออกเสียงคำศัพท์ได้เร็วเพียงจาก
เป็นคำสำคัญ ยกตัวอย่าง dentist ต้องให้บอกเสียงท้ายคำกันนาน สมาชิกในกลุ่ม
ที่ทำหน้าที่กระตุ้นเพื่อนทำหน้าที่ได้ นักเรียนสามารถบอกวิธีปฏิบัติเพื่อแก้
ปัญหาความเจ็บป่วยต่าง ๆ ของร่างกายได้ นักเรียนได้รับความรู้จากการ
สอนอ่านของครูมากและบอกขยายความรู้สู่ผู้สอนมาก

บทที่ 3 นักเรียนคนที่ 1 สามารถกระตุ้นให้เพื่อนแสดงความคิดเห็นได้ดี นักเรียนคนที่ 2
ที่มีหน้าที่จดบันทึกสามารถเขียนบันทึกสรุปแนวความคิดต่าง ๆ ของเพื่อนได้ดีกว่า
เดิม นักเรียนคนที่ 4 ที่คอยจับเวลาสามารถควบคุมเพื่อนให้ทำงานให้เสร็จได้ตาม
เวลาที่กำหนด นักเรียนชอบท่องความคิดเห็นของเพื่อน ๆ ในสิ่งที่อ่าน สามารถ
เรียนรู้ราวจากเกิดขึ้น ก่อน-หลังได้และสามารถเดินด้วยทุกต้องถูกใจอย่างง่ายทำให้
เป็นประโยคที่สมบูรณ์ได้ นักเรียนชอบทำกิจกรรมกลุ่มอย่าง เข้าใจบทเรียนได้ดี
เมื่อทำงานเก็บเพื่อน ๆ นักเรียนคนที่ 2 สามารถเขียนบันทึกสรุปแนวคิดต่าง ๆ ของ
เพื่อนในกลุ่มได้ นอกจากนี้ยังชอบเป็นผู้นำในการทำกิจกรรมกลุ่มมากและบอกว่า
ชอบวิธีการเรียนแบบนี้ ชอบพูดคุยกับศึกษาจากกลุ่มย่อยและมีโอกาสได้ถ่าย
ส่วนร่วมในการทำงานเก็บเพื่อน ๆ มา และบอกว่าชอบการทำงานเป็นกลุ่มเน้น
สามารถดูดคุณสมบัติของครูเกี่ยวกับงานอดิเรกและแผนการเรียนในอนาคตของตนเอง

230
The Floating Markets.

Chapter 15-16

Exercise 1

The Floating Markets.

Chapter 15-16

Exercise 1
เรียนได้ติดเส้นทำงานกับเพื่อนในกลุ่ม นักเรียนสามารถเรียนรู้ที่สูงุดควบคุม
เห็นของเพื่อนๆในกลุ่มได้ดีมาก นักเรียนชอบเป็นผู้นำในการทำกิจกรรมกลุ่มมาก
และบอกว่าชอบการทำงานเป็นกลุ่มแบบนี้ในคาบที่ 15-16 และบอกว่าชอบวิธีการ
สอนล้านวิชาอังกฤษของครู สามารถพูดคุยปรึกษาเกี่ยวกับงานอดิเรกและแผน
การ miner อนาคตของตนเองกับครูได้ในคาบที่ 15-16 นักเรียนสามารถพูดคุยกับ
ครูเกี่ยวกับเรื่องต่างๆหรือหัวข้ออื่นๆที่เกี่ยวข้องกับงานที่ครูมอบหมายได้ทุกเวลา
เมื่อมีโอกาสได้ในคาบที่ 16 เห็นนั้น

ขั้นที่ 4 นักเรียนช่วยกันทำกิจกรรมดิฉันก รู้หน้าที่ดีมาก คะแนนใน exercise 1 และ 3
เป็นที่น่าพอใจ ใน exercise 2 และ 4 นักเรียนดูภาพแล้วรู้ว่าคือคำศัพท์คำใด

ขั้นที่ 5 มีกลุ่มที่ได้คะแนนสูงสุด 3 กลุ่ม จึงนำขั้นติดตามบอร์ด

อุปสรรคปัญหา นักเรียนAnswers คำว่า vegetable ไม่ได้

การแก้ไข สื่อให้นักเรียนที่ละคนให้ออกเสียงให้ถูกต้อง

ข้อเสนอแนะ ถ้าได้ไปทบทวนศักยภาพนักเรียนก็จะได้ประสบการณ์ตรง
บันทึกถึงผลพฤติกรรมการสอน

คำถาม 1-2 นักเรียน family และ their Occupations.

ข้อที่ 1 เมื่อกรุณาอธิบายการเรียนรู้และการดังกล่าวของการเรียนแบบ cooperative learning นักเรียนดูอย่างไม่ต้องเข้าใจและแปลงใจว่าทำไมต้องเรียนแบบนี้ ทำไมต้องแบ่งเป็นกลุ่ม นักเรียนไม่ต้องอยากแบ่งกลุ่ม

ข้อที่ 2 แบ่งนักเรียนเป็นกลุ่ม บอกให้นักเรียนทราบว่านักเรียนเป็นสมาชิกคนที่ 1 โดยของกลุ่ม แต่ละคนมีหน้าที่อะไร นักเรียนดูกระดิ่งเรื่องมาจากชั้น อยากเรียนและทำหน้าที่ของตนเอง นักเรียนสามารถรับผิดชอบหน้าที่ตนเองได้ในกลุ่ม การเรียนนักเรียนต้องข้ามมา นักเรียนชอบเรียนคำศัพท์จากบัตรภาพและพอใจตามความหมายของคำศัพท์จากบัตรภาพได้ การออกแบบอยู่ในเกณฑ์ดี การใช้ possessive pronoun นักเรียนเข้าใจได้รวดเร็วจาก chart ที่ครูแสดงบนกระดาษ นักเรียนพอใจจะได้รับความรู้จากการสอนอ่านของครู นักเรียนบอกว่าชอบฟังครูสอนภาษาอังกฤษมาก

ข้อที่ 3 สามารถวิภาษาในกลุ่มช่วยเหลือกันในการอ่านเด็ก ไม่เฉพาะกำหนดทำหน้าที่ของตนเองไปด้วย จากการสังเกต นักเรียนจะกระตุ้นเพื่อนๆ ให้ออกความเห็นได้ดีไม่มีใครแย่ ทุกคนมีส่วนร่วมในการอ่าน นักเรียนชอบเรียนคำศัพท์จากบัตรภาพแต่ไม่สามารถลดความหมายของคำศัพท์จากบัตรภาพได้ นักเรียนชอบพิจารณาความคิดเห็นของเพื่อนๆ จากเรื่องที่อ่านแล้วเปลี่ยนความรู้กันภายในกลุ่ม นักเรียนที่เกี่ยวกับจะช่วยเหลือเพื่อนที่อ่านยาก ส่วนคนที่เรียนอยู่ก็พยายามเรียนรู้คำศัพท์ / เนื้อเรื่องจากเพื่อน นักเรียนยังไม่เข้าใจบทเรียนในขณะที่ทำกิจกรรมกับเพื่อนๆ แต่ยังไม่สามารถแก้ปัญหาจากบทที่ได้รับมอบหมายได้ นักเรียนพอใจจะเรียนเรื่องราวตามลำดับได้รับในบทที่ 2 นักเรียนชอบศึกษาจากกลุ่มอยู่ และสามารถตอบคำถามของครูได้ นักเรียนชอบทำกิจกรรมกลุ่มแต่ละกลุ่มมากสามารถเรียนรู้เป็นชั้นและทำแบบฝึกหัดที่ 1 ได้เสร็จทันเวลาและสามารถเดิมค่าไหวข้อมูลได้ถูกต้องและเรียนคำศัพท์ที่ถูกต้องได้ นักเรียนสามารถเรียนบัตรศัพท์ความคิดเห็นของเพื่อนได้ดี มีโอกาสมีส่วนร่วมในการทำกิจกรรมกับเพื่อนๆในบทเรียนที่ 2 นักเรียนไม่ชอบเป็นผู้นำในการทำกิจกรรมแต่ชอบพวกพุทธศัพท์โดยทั่วไปนักเรียนเป็นกลุ่มอย่างแบบนี้ นักเรียนสามารถพูดคุยได้จากครูเกี่ยวกับงานอธิบายและแผนการในอนาคตของนักเรียนได้บ้างและพอจะกล้าถามเรื่องที่เกี่ยวข้องกับบทที่ครูให้ทำเนื่องจากครูให้ดี นักเรียนพอใจจะได้รับความรู้จากการสอนอ่านของครูบ้าง นักเรียนบอกว่านักเรียนชอบครูผู้สอนบ้างแล้วในการ present งานหน้าชั้น นักเรียนแต่ละกลุ่มสนใจมากกว่ากลุ่มอื่นจะเหมือนกับ...
บทที่ 5 นักเรียนที่ทำคะแนนได้สูงสุดมี 3 กลุ่ม จึงนำผลงานขึ้นติดบอร์ด

อุปสรรค / ปัญหา
นักเรียนยังไม่ค่อยเข้าใจและปรับตัวไม่ได้กับวิธีเรียนและนักเรียนบางคนยังยึดติดกับเพื่อนกลุ่มเดิม ยังมีปัญหาเรื่องการปรับตัวให้เข้ากับเพื่อนในกลุ่มด้วย

การแก้ไข
อธิบายให้นักเรียนเห็นความสำคัญของการเรียนเป็นกลุ่ม การช่วยเหลอกันในกลุ่ม ให้นักเรียนเห็นความสำคัญและประโยชน์ที่จะได้จากวิธีการเรียนแบบนี้

ขอเสนอแนะ
ควรมีห้องเรียนที่สามารถนั่งเข้ากลุ่มได้เลยจะได้ไม่ต้องเสียเวลาในการจัดได้เร็วขึ้น

บันทึกผลเกณฑ์คุณลักษณะการสอน

<i class="fa fa-pencil"></i> ความ 3-5 เรื่อง Personal Feelings.

บทที่ 1
นักเรียนรับทราบจุดประสงค์การเรียนรู้และจัดเวลาเพื่อเข้าสู่บทเรียนและทราบการนำเรียนหน้าที่อยู่ในกลุ่ม

บทที่ 2
ครูแสดงภาพและใช้เทคนิคการเรียนรู้สื่อสารมีพฤติกรรมที่เหมาะสมกับเพื่อนร่วมกลุ่ม ทำให้เข้ากับอารมณ์ต่างๆ ทันท่วงที ทำให้นักเรียนสนุกสนานและเข้าใจตั้งใจเรียน

บทที่ 3
นักเรียนแต่ละกลุ่มช่วยเหลือสมาชิกภายในกลุ่มให้สุขภาพดี ทำตามคำสั่งของครู

บทที่ 4
นักเรียนจะมีความรู้จากกิจกรรมทำข้อสอบข้อสอบและการออกกำลังกาย ทำให้เห็นผลจากการแสดงความรู้การเรียนรู้การออกกำลังกาย

บทที่ 5
นักเรียนจะมีความรู้จากการออกกำลังกายและการเรียนรู้ในบทเรียน ทำให้เห็นผลจากการแสดงความรู้การเรียนรู้การออกกำลังกาย

ขอให้ครูเข้าใจในบทเรียนและให้เรียนรู้อย่างต่อเนื่อง
แนวคิดต่างๆของเพื่อนได้บ้างในคาบที่ 4-5 นักเรียนชอบเป็นผู้นำในการทำกิจกรรมกลุ่มในคาบที่ 4-5 พอสมควร นักเรียนชอบพูดคุยกับศึกษาจากกลุ่มอย่างมากและบอกว่าเรียนชอบวิธีสอนใหม่นั้นแล้ว นักเรียนชอบพูดคุยเป็นกลุ่มแบบนี้และสามารถพูดคุยได้กับครูเกี่ยวกับเรื่องต่างๆและแผนการที่จะทำได้มากคิดของนักเรียนได้สิ่งมาก นักเรียนมีโอกาสได้พูดแล้วในการทำกิจกรรมกับเพื่อนๆในคาบที่ 4-5 นักเรียนชอบการทำแบบกลุ่มแบบนี้ในคาบที่ 3-4

ขั้นที่ 4 จากการทำแบบฝึกหัด นักเรียนที่มีหน้าที่จับเวลาสามารถคุมเพื่อให้ทำงานได้เสร็จตามเวลาในคาบที่ 2และ3 นักเรียนจะลดคำศัพท์ที่ครูน่าสนใจและน้างมาเติมได้เลย ทำให้นักเรียนทำแบบฝึกหัดกันได้มาก

ขั้นที่ 5 กลุ่มที่ได้คะแนนสูงสุดคือ 2 กลุ่มซึ่งนำผลงานที่สูงสุดคิดบอร์ด

อุปสรรค/ปัญหา เวลาไม่พอทำกิจกรรม

การแก้ไข กระชับเวลาในแต่ละขั้นตอนให้มากขึ้น

ข้อเสนอแนะ

บันทึกสังเกตพฤติกรรมการสอน

คาบที่ 6-8 เรื่อง Potato Cake.

ขั้นที่ 1 นักเรียนรู้หน้าที่ที่จะเปลี่ยนกันจาก chart ที่ติดไว้ให้ดูบนบอร์ด ซึ่งไม่สุ่มความและนักเรียนรับทราบอยู่เสมอ นักเรียนเองเลยทำ�าระบบและจัดให้เพื่อชัดเจน

ขั้นที่ 2 นักเรียนมีความสนใจการทำอาหารอยู่แล้ว โดยเฉพาะนักเรียนหญิง การเรียนการสอนซึ่งตีกับเป็นพิเศษเพราะนักเรียนอยากรู้วิธีทำ potato cake นักเรียนมีพื้นฐานเรื่องการทำอาหารอยู่แล้ว แต่ค่อนข้างค่อยๆที่เป็นคำศัพท์ที่ครูนำมาเสนอ นักเรียนจึงรู้จักกันแล้ว ส่วนนักเรียนชายบางคนที่ไม่รู้จักก็ทราบจากเพื่อนคำศัพท์ที่เป็นคำนามก็ได้ร้อนนั้นไม่ได้เมื่อนักเรียนได้ดูภาพและจริง

ประกอบลงรักทำให้เข้าใจได้ดีขึ้น นักเรียนชอบเรียนคำศัพท์จากข้าวปลามากและสามารถคาดความหมายของคำศัพท์จากข้าวปลาได้ในคาบที่ 7-8 นักเรียนได้รับความรู้จากการสอนของครูในคาบที่ 6-7 และออกข้อมูลสอนในคาบที่ 7-8

ขั้นที่ 3 นักเรียนช่วยเหลือกันในกลุ่มเดียวนักเรียนที่เรียนอ่อนดูด้วยจีดีเอ็นว้ีที่เรียนรู้คำศัพท์จากเพื่อน เสนอความคิดเห็นมากขึ้น ชอบฟังความคิดเห็นของเพื่อนเกี่ยวกับเรื่องที่อ่านทุกครั้ง การอ่านเรื่อง (วิชากล) ใช้เวลาค่อนข้างนาน เพราะนักเรียน
ไม่เคยคิดกับเนื้อเรื่องที่เป็นเรื่องนอกหนังสือเรียนทำที่ครับ แต่นักเรียนก็
พยาบาลทำแบบกิจทำจับ çocuklarไปประกอบ / เรียงลำดับเหตุการณ์ วิธีในการทำ
potato cake ค่อนข้างมีปัญหาเพราะนักเรียนต้องการว่าแต่ละภาพเป็นอะไร ครูจึง
ให้ข้อเสนอแนะว่าให้ดูคำพังท้ายที่ติดไว้ที่ข้างขวดหรือกล่อง นักเรียนจึงทำได้ในภาค
ที่ 6 และ 8 และสร้างคำแสดงในภาคที่ 7-8 นักเรียนชอบทำกิจกรรมกลุ่มย่อยทุก
ภาคและเข้าใจบทเรียนได้ดีกว่าในขณะทำกิจกรรมรวมกันเพื่อทุกภาค นัก
เรียนเริ่มเขียนบันทึกสรุปแนวคิดต่างๆ ของเพื่อนในกลุ่มได้ในภาคที่ 7-8 นักเรียน
บอกว่าชอบที่จะเป็นผู้นำในการทำกิจกรรมกลุ่มในทุกภาค นักเรียนสามารถแก้ไข
ปัญหาที่เกิดขึ้นในขณะที่เรียนได้ในภาคที่ 8 นักเรียนสามารถเดินทางที่ถูกต้องใน
นั่นที่ยอมได้เป็นประโยคที่สมบูรณ์ได้ทุกภาคและสามารถตอบคำถามโดยเขียน
คำตอบจากเรื่องที่ถูกต้องทุกภาคด้วยเขียน นักเรียนชอบพูดคุยกันหรือ
ศึกษาจากกลุ่มอย่างในภาคที่ 6 และ 8 แต่มีโอกาสที่ติดต่อกับกิจ
กรรมกันเพื่อนๆมากในภาคที่ 8 นักเรียนชอบการทำงานเป็นกลุ่มแบบนี้ในทุก
ภาค

ขั้นที่ 4
ในการทำแบบฝึกหัดที่เปลี่ยนจาก potato cake เป็น apple cake นักเรียนยัง
ไม่เข้าใจในตอนแรก หลังจากที่ครูอธิบายให้ฟังถึงขั้นตอนหรือวิธีการทำในภาค
พังท้ายครูมีเรื่องเติมที่เป็นสุขใจได้ให้ผ่านนักเรียนแจ้งข้อใจ นักเรียนสามารถพูด
คุยเรื่องราวที่เกี่ยวกับงานติวเข้มและแผนการในอนาคตของนักเรียนได้ในทุก
ภาคและบอกว่าขั้นตอนวิธีการสอนผ่านภาษาอังกฤษของครูในภาค 7-8 นักเรียน
สามารถพูดคุยกับครูเกี่ยวกับเรื่องต่างๆหรือหัวข้ออื่นที่เกี่ยวข้องกับงานที่ครูมอบ
หมายได้ทุกเวลาเมื่อมีโอกาสในภาคที่ 6-7

ขั้นที่ 5
นักเรียนกลุ่มที่ได้คะแนนสูงสุดเรื่องนี้มีกลุ่มเสียงเพราะเนื้อจากเดิมคำพังท้าย
กันมาก

อุปสรรค/ปัญหา
รูปภาพบางรูปภาพยังไม่ชัดเจน นักเรียนยังคงไม่ค่อยออกมาเป็นอะไร

การแก้ไข
นำข้อจริงให้ดู

ชื่อเสนอแนะ
บทที่ 9-11
เรื่อง A Special Bird.

ข้อที่ 1
ฝึกเรียนไตร่จะการรู้จักนักที่ตัดต่อสระกับผีดิษฐจิตชอบซีชาร์ทที่ครูติดไว้และตู
เนื้อเพียงๆ ในกลุ่มตัวเองหน้า ที่จะเรียนชั่วโมงเรียนจริงๆ

ข้อที่ 2
ฝึกเรียนชุดที่จะเรียนรู้คำศัพท์จากธุรกรรมในทุกคำและพอจะคาดความ
หมายของคำศัพท์จากธุรกรรมได้ในค่ายที่ 10-11 ฝึกเรียนเสนอใช้ที่จะเรียนรู้เรื่อง
นิยมการอภิปรายเพราะเป็นความรู้เป็นลักษณะ ฝึกเรียนทราบคำศัพท์ที่เป็นคำ
descriptive วิธีการลักษณะของนิยมการอภิปรายได้เป็นอย่างดี ฝึกเรียนได้รับความรู้
จากการสอนของครูในค่ายที่ 9-10 และฝึกเรียนออกฤทธิ์สอนภาษาอังกฤษ
ในค่ายที่ 10-11

ข้อที่ 3
ฝึกเรียนแต่ละกลุ่มช่วยกันอ่านเนื้อเรื่องใน worksheet และหาคำศัพท์บางคำจาก
dictionary สามารถภายในกลุ่มตนเองใช้ที่จะอ่านหาความรู้จากใบงาน ฝึกเรียนชอบ
ฝึกความคิดเห็นของเพื่อนในเรื่องที่อ่านในทุกคำฝึกเรียนชุดการทำจริงกลุ่ม
ยกย่องทุกคำและฝึกเรียนเข้าใจบทเรียนได้ดีกว่าในขณะที่ทำงานกลุ่มร่วมกัน
เพื่อจะทุกคำ ฝึกเรียนสามารถเขียนบันทึกลักษณะคิดต่างๆ ของเพื่อนใน
กลุ่มให้ทุกคำและสามารถกลุ่มเครื่องๆ ให้ทำงานได้เสร็จตามเวลาในค่ายที่ 10-11
ฝึกเรียนชอบเป็นผู้นำในการทำจริงกลุ่มมากในทุกคำฝึกเรียนสามารถแก้
ปัญหาที่พบในบทเรียนได้ในค่ายที่ 10-11 และสามารถเรียนรู้จากที่เกิดขึ้นก่อน-
หลังได้ในทุกคำ ฝึกเรียนสามารถเข้าใจคำศัพท์ทุกคำในช่วงเวลา ฝึกเรียนเป็นประโยคที่
สมุนไพรได้ในทุกคำและสามารถตอบคำถามโดยเขียนคำตอบจากเรื่องที่อ่านได้
ถูกต้องในทุกคำด้วย ฝึกเรียนชุดการทำจริงเป็นกลุ่มแบบในทุกคำ ฝึก
เรียนขอวิธีการเรียนแบบนี้เพราะชอบพูดคุยเป็นกลุ่มอยู่ในทุกคำ ฝึกเรียน
เพื่อจะมีโอกาสได้ฝึกสร้างในบริบทที่เรียนรู้ที่ที่เกี่ยวกับงานอดิเรกและแผนการในอนาคตของ
ฝึกเรียนได้ในค่ายที่ 10-11 และบอกว่าชอบวิธีการสอนภาษาอังกฤษของครู
ในค่ายที่ 10-11 ซึ่งฝึกเรียนสามารถพูดคุยกับครูเกี่ยวกับเรื่องต่างๆ หรือก่อกำจ
อันๆ ที่เกี่ยวข้องกับภาษาที่ครูมอบหมายได้ทุกคำฉันได้มีโอกาสได้ในค่ายที่ 11

ชั้นที่ 4
แบบฝึกหัดที่จับกลุ่มฝึกเรียนทำได้ แบบฝึกหัดที่ 5 ที่เป็นการทำลักษณะพิเศษของ
นิยมการอภิปราย สามารถกับปัญหาได้โดยนักเรียนสามารถจับประเด็นที่พิเศษออก
มาได้โดยสามารถเริ่มต้นที่เกิดขึ้นก่อน หลังได้การนำเสนอผลงานหน้าขึ้น
ต้องใช้เวลาทำและต้องรับเวลาจึงเริ่มที่จะทำ

ข้อที่ 5
มีกลุ่ม 1 กลุ่มที่ได้ค้นพบสูงสุดจึงได้นำผลงานคัดตอบเบอร์ด

อุปสรรคปัญหา เนื่องมีมากเกินไป ทำให้ใช้เวลาในการอ่านมาก

237
ตามที่ 12-13 เรื่อง Sickness.

นักเรียนเข้าใจในบทบาทและหน้าที่ของตนเองในกลุ่มสังคมและรับทราบถึงประสงค์การเรียนรู้ที่ครูจ้างให้ทราบ

นักเรียนเข้าใจบทบาทจากจริงภาพแตกในทุกภาคและสามารถแสดงความหมายของคำศัพท์จากจริงภาพได้ในทุกภาค นักเรียนได้รับความรู้จากการสอนอ่านของครูในภาคที่ 12 แต่นักเรียนสอนครูผู้สอนในภาคที่ 13

นักเรียนปรับตัวได้มากขึ้นโดยนักเรียนเริ่มที่จะมีความสามารถในการทำงานได้ด้วยตนเอง มีการรับฟังความคิดเห็นของเพื่อนในเรื่องที่กำลังเกิดตัวกับนักเรียนและนักเรียนทำงานโดยกิจกรรมกลุ่มอย่างทุกภาคตัว นักเรียนทุกคนทำหน้าที่ของตนเองได้เป็นอย่างดีและเคยช่วยเหลือเพื่อนในกลุ่มให้เข้าใจตัว นักเรียนทุกคนในกลุ่มมีโอกาสที่จะมีความรู้และเข้าใจในทุกภาค โดยสามารถเรียนรู้ราวที่เกิดขึ้นก่อน-หลังได้ในทุกภาค การ present งานกลุ่มนั้นเข้าใจนักเรียนที่ให้นักเรียนที่เรียนสอนได้มีโอกาสแสดงความคิดเห็น มีความใกล้ชิดกัน นักเรียนเข้าใจเป็นเท่านั้นโดยกิจกรรมกลุ่มในภาคที่ 12-13 นักเรียนโดยที่เป็นผู้นำในการทำงานกิจกรรมกลุ่มในภาคที่ 12-13 สามารถแก้ปัญหาโดยยกกรณีปฏิบัติที่เกิดขึ้นในทุกภาคกลุ่มและสามารถคิดค้นต้องของโครงการได้ในการทำกิจกรรมกลุ่มในภาคที่ 12-13

นักเรียนมีโอกาสในการได้เข้าใจในทุกภาคและสามารถคิดค้นต้องของโครงการได้ในการทำกิจกรรมกลุ่มในภาคที่ 12-13 สามารถมีโอกาสในการทำงานเป็นกลุ่มแบบนี้ในทุกภาคและสามารถคิดค้นต้องของโครงการได้ในการทำกิจกรรมกลุ่มในภาคที่ 12-13 สามารถมีโอกาสในการทำงานเป็นกลุ่มแบบนี้ในทุกภาคและสามารถคิดค้นต้องของโครงการได้ในการทำกิจกรรมกลุ่มในภาคที่ 12-13 สามารถมีโอกาสในการทำงานเป็นกลุ่มแบบนี้ในทุกภาคและสามารถคิดค้นต้องของโครงการได้ในการทำกิจกรรมกลุ่มในภาคที่ 12-13 สามารถมีโอกาสในการทำงานเป็นกลุ่มแบบนี้ในทุกภาคและสามารถคิดค้นต้องของโครงการได้ในการทำกิจกรรมกลุ่มในภาคที่ 12-13 สามารถมีโอกาสในการทำงานเป็นกลุ่มแบบนี้ในทุกภาคและสามารถคิดค้นต้องของโครงการได้ในการทำกิจกรรมกลุ่มในภาคที่ 12-13 สามารถมีโอกาสในการทำงานเป็นกลุ่มแบบนี้ในทุกภาคและสามารถคิดค้นต้องของโครงการได้
กิจวัตรเพื่อนด้วย คณที่เก่งก็จะขออย่างไรให้เพื่อนเข้าใจ นักเรียนช่วยตั้งแง่ปัญหาจากกิจกรรมที่เรียนได้

ชั้นที่ 5
มีกลุ่มที่ได้คะแนนสูงสุดมี 2 กลุ่ม จึงนำขึ้นไปติดบัตร

อุปสรรค/ปัญหา
-

ภารกิจ
-

ข้อเสนอแนะ
-

บัณฑิตสังกัดพฤติกรรมการสอน

 Recap

 Sicknesses and Remedies.

Chapter 14
เรื่อง Sicknesses and Remedies.

Chapter 1
นักเรียนพัฒนารูปแบบการเรียนรู้จากครู นักเรียนสามารถจัดทำคำพจน์และทำการบอกอากาศจับป้ายที่เรียนไปแล้วได้

Chapter 2
วิธีแก้ปัญหาในการจับป้ายมีหลายวิธี นักเรียนเข้าใจได้เร็วเพราะเป็นคำพจน์ที่จับและตกเรียงมาแล้ว นักเรียนแต่ละกลุ่มช่วยกันคิดวิธีที่จะแก้ปัญหาถ้าอย่างสุดยอดที่ต้องใช้เวลาที่มากและมีปัญหาของเรื่องที่น่าสนใจได้ นักเรียนจับคำพจน์จากกรุปราบภาพตัวโดยสามารถแสดงความหมายของคำพจน์จากกรุปราบภาพได้ นักเรียนชอบพิสูจน์ความคิดเห็นของเรื่องที่ยังมีนักเรียนได้รับความรู้จากการสอนอ่านของครูมากและบอกว่าชอบครูที่สอนภาษาอังกฤษ

Chapter 3
จากการสังเกตท่านักเรียนกลุ่มทุกคนรู้หน้าที่และปฏิบัติต่อเป็นอย่างดีและนักเรียนสามารถบอกทุกคนให้ท่านักเรียนได้สร้างเด็กเวลา นักเรียนสามารถบอกวิธีปฏิบัติเพื่อแก้ปัญหาความเข้าใจป้ายต่างๆของเรื่องรายได้สามารถเรื่องเรื่องราวที่เกิดขึ้นก่อน-หลังได้และสามารถติดคำองในช่วงเวลาได้เป็นประโยชน์ที่สมบูรณ์ได้ นักเรียนชอบทำการกิจกรรมกลุ่มยอยและเข้าใจบทเรียนได้ดีมากกว่ามีกิจกรรมร่วมกันเพื่อ นักเรียนสามารถบอกบันทึกสรุปแนวคิดต่างๆของเรื่องในกลุ่มได้ดี นักเรียนชอบเป็นผู้นำในการทำกิจกรรมกลุ่มที่ในคบที่ 12-13 นักเรียนชอบการทำงานเป็นกลุ่มแบบเน้นเรื่องรูปสับสนิยมหรือศึกษาเรื่องเป็นกลุ่มอย่างสามารถพูดคุยกับกันกับเรียนรู้เนื้อหาและวางแผนการในอนาคตของนักเรียนได้และบอกว่าชอบปฏิบัติการสอนอ่านภาษาอังกฤษของครู นักเรียนสามารถพูดคุยกับครูเกี่ยวกับ
กับเรื่องต่างๆหรือหัวข้ออื่นที่เกี่ยวกับงานที่คุณมอบหมายให้ทุกเวลาเมื่อมีโอกาส

ขั้นที่ 4 การทำแบบฝึกหัด นักเรียนสามารถอ่านคำสั่งที่เป็นภาษาอังกฤษได้ และสามารถละเอียดและเขียนได้ที่ใช้ภาษาไทยต่างๆ ใน exercise 2 บางคนจัดลำดับภาษาที่ใช้ภาษาไทยให้เหมาะสมจนกระทั่งการที่คนในครอบครัวของตนใช้

ขั้นที่ 5 นักเรียนได้คะแนนสูงสุด 3 กลุ่ม

อุปสรรคปัญหา -

การแก้ไข -

ข้อเสนอแนะ -

บัตรเกี่ยวกับการทำการสอน

chapter 15-16 เรื่อง The Floating Markets.

ขั้นที่ 1 ครูบอกจุดประสงค์การเรียนรู้ให้นักเรียนทราบ นักเรียนสนใจเรื่องตลาดน้า คำศัพท์สำคัญและมีการพูดคุยกันเกี่ยวกับตลาดน้าอย่างสนใจ

ขั้นที่ 2 นักเรียนออกเสียงตามได้พี่เพราะเป็นคำศัพท์ที่เคยเรียนแล้ว นักเรียนชอบเรียน คำศัพท์จากบริบทภาพมาโดยสามารถเติมความหมายของคำศัพท์จากบริบทภาพได้ นักเรียนได้รับความรู้จากการสอนอ่านของครูมากทุกคนและนักเรียนชอบครูที่ให้ สนองมากทุกคนด้วย

ขั้นที่ 3 นักเรียนมีความรู้ดีมีเรื่องตลาดน้าคำศัพท์อยู่แล้ว แต่เรื่องประวัติของตลาดน้าที่ว่า ดีมีวางภาพจากคำศัพท์เป็นผู้ส่งให้จุดอดคลอง มีนักเรียนบางคนไม่เข้าใจและยังไม่มีตัวอย่าง การอ่านเรื่องและทำหน้าที่ในแต่ละกลุ่มได้เฉพาะเพียงข้อมูลที่มีหน้าที่ กระรุ่นมากกว่ากลุ่มปฏิบัติหน้าที่ได้ดีมาก นักเรียนชอบพิจารณาความคิดเห็นของ เพื่อนในกลุ่มในเรื่องที่อ่าน นอกจากนี้มีผ้าทำกิจกรรมกลุ่มย่อยด้วยและเข้าใจ บทเรียนได้ดีกว่าเมื่อทำกิจกรรมกลุ่มร่วมกันเพื่อนๆ นักเรียนสามารถเขียนบนที่ สุ่มแนวคิดต่างๆ ของเพื่อนในกลุ่มได้ดี และสามารถถือเพื่อนๆให้ทำงานได้เสี่ยง ตามเวลา นักเรียนชอบเป็นผู้นำในการทำกิจกรรมกลุ่มมาก นักเรียนสามารถแก้ไขปัญหาที่พบในบทเรียนได้และสามารถเรื่องราวที่เกิดขึ้นแก่น-หลังได้ สามารถบันทึ้งคำที่อุทุมกว่าในช่องว่างให้เป็นประโยชน์ที่สมบูรณ์ได้ นักเรียนมี โอกาสได้ส่วนร่วมในการทำกิจกรรมกับเพื่อนๆมากในบทที่ 15-16และบอกว่าชอบ
การทำแบบฟอร์มและขอรับการสอนภาษาอังกฤษของครูและสามารถพูดคุยเรียกนายอดิเรกแบบมีผลคัดผลของตนเองกับครูได้ในที่ศึกษา 15-16 นักเรียนสามารถพูดคุยกับครูเกี่ยวกับเรื่องต่างๆ หรือหัวข้ออื่นที่เกี่ยวข้องกับงานที่ครูมอบหมายให้ทุกเวลาเมื่อมีโอกาสได้ทำในที่ศึกษา 15-16

ขั้นที่ 4
นักเรียนทุกคนมีส่วนร่วมในกิจกรรมกลุ่มคิด นักเรียนลงภาพแล้วรู้คำศัพท์ที่ต้องน้ำมาเติมใน cross word ได้ดีโดยสามารถแก้ไขปัญหาที่เกิดขึ้นโดยสามารถหาคำศัพท์มามาเติมได้

ขั้นที่ 5
มีกลุ่มที่ได้คะแนนสูงสุด 3 กลุ่ม จึงนั่งขั้นติดแบบоворธ

อุปสรรค/ปัญหา
นักเรียนมีความรู้เดิมเรื่องตลาดน้า แต่บางคนไม่เชื่อและไม่ยอมรับในประโยชน์ของตลาดน้าคำเนินสะดวก

การแก้ไข
ให้ศึกษาประโยชน์และพร้อมมือกับครูสอนประวัติศาสตร์เล่าประวัติของตลาดน้าคำเนินสะดวกให้ฟังอย่างละเอียด

ข้อเสนอแนะ
ควรจะนำ Brochure (แผ่นพับ) ของตลาดน้าและประวัติที่ ท.ส.ท. หรือสถานที่ทำเนี้ยงจังหวัดราชบุรี มาให้นักเรียนดูเพื่อเป็นหลักฐานหรือเอกสารอ้างอิงจะทำให้ข้อมูลเท่เข็มถือมากยิ่งขึ้น
นักเรียนให้ความสนใจมากเพราะเป็นครั้งแรกของการเรียนด้วยวิธี cooperative learning นักเรียนแข่งขันกันด้วยการเรียนรู้

แบ่งนักเรียนเป็นกลุ่ม บอกให้นักเรียนทราบว่ากลุ่มเป็นสมาชิกคนที่ทำงานของกลุ่ม แต่ละคนมีหน้าที่อะไร นักเรียนทำงานกลุ่ม
นักเรียนพอจะได้รับความรู้จากการสอนล้อเล่นของครู นักเรียนบอกว่าชอบครูผู้สอนมาก

นักเรียนชอบที่จะทำหน้าที่ต่างๆ โดยเฉพาะ นักเรียนที่ทำหน้าที่มาจะสื่อจากครู เพราะจะได้เห็นสิ่งที่ครูให้ก่อนเพื่อสนองเรื่องนั้นๆ นักเรียนชอบพิสูจน์ความคิดเห็นของ
เพื่อนๆจากเรื่องที่เรียน นักเรียนชอบคุยถามรายละเอียดค่าพักในช่วงเวลาและเรียน
ค่าตอบที่ถูกต้องได้จากเรื่องใต้ถูกขอ นักเรียนเรียนรู้คุณค่าของจากครูภาพ

ในบทที่ 2 แต่ยังไม่สามารถแสดงความหมายของค่าพักจากครูภาพได้ นักเรียนเรียนบอกสิ่งต่างๆ ของเพื่อนในกลุ่มได้ แต่ยังไม่สามารถแก้ปัญหาจากงาน
ที่ได้รับมอบหมายได้ นักเรียนพอจะเรียนรู้เรื่องราวตามลำดับได้บ้างในบทที่ 2

สำหรับเรื่องแรกของการเรียนด้วยวิธีใหม่ๆ กว่าที่เคยเรียนมา นักเรียนมีระบบ
งานกลุ่มดีมาก จะช่วยกันทำหน้าที่ที่แต่ละคนได้รับอย่างเต็มที่ และชอบพิสูจน์
คิดเห็นของเพื่อนจากเรื่องที่ทำแสดง present งานแต่ละจะชอบ
มากเพราะถ้าตอบถูกจะได้รับค่าขนำจากการเพื่อนและครู นักเรียนได้รับความรู้จาก
การสอนอ่านของครู นักเรียนไม่เคยชอบทำกิจกรรมกลุ่มและไม่ชอบเป็นผู้นำใน
การทำกิจกรรมกลุ่มเลย นักเรียนไม่ชอบวิธีการเรียนแบบนี้เลย แต่ชอบพิสูจน์
หรือทำงานเป็นกลุ่มย่อยแบบนี้เพราะมีโอกาสมีส่วนร่วมในการทำกิจกรรมกับ
เพื่อนๆมากในบทที่ 2 นักเรียนสามารถจะพูดคุยกันรีบที่เกี่ยวกับงานอีก
และแผนการในการมอบงานของนักเรียนได้ นักเรียนหลังกล่าวเรื่องที่เกี่ยวกับ
ช่องทางงานที่ครูมอบหมายได้ถือว่าครู นักเรียนกล่าวรีบที่ผลงานที่ครูให้
ทำให้ทุกที่เมื่อมีโอกาสทำเรียนบอกกว่าเรียนชอบครูผู้สอนบางแล้ว
บันทึกผลเกณฑ์พฤติกรรมการสอน

ชั้นที่ 1 ครูแจ้งลูกจุดประสงค์การเรียนและแจ้งการหมุนเวียนหน้าที่ภายในกลุ่ม

ชั้นที่ 2 ครูแสดงภาพและอธิบายคำศัพท์ต่างๆ จากภาพ นักเรียนชอบสื่อที่ครูนำมาแสดงโดยเป็นรูปภาพแสดงความรู้สึกต่างๆ นักเรียนชอบเรียนคำศัพท์จากรูปภาพมากและสามารถจำคำศัพท์ได้ นักเรียนชอบที่จะทำการเลือยแบบความรู้สึกต่างๆตามรูปภาพสื่อที่ครูแสดงและจำคำศัพท์ได้ง่าย นักเรียนจะได้รับความรู้จากประสบการณ์ของครูในข้อที่ 3-4 นักเรียนบอกว่าเรียนชอบครูผู้สอนในข้อที่ 5 และเรียนชอบวิธีการสอนอ่านภาษาอังกฤษของครูในข้อที่ 4-5

ชั้นที่ 3 นักเรียนแต่ละกลุ่มช่วยเหลือสมาชิกภายในกลุ่มช่วยกันทำ exercise 1 และทำแบบฝึกหัด โดยสามารถเรียงเรื้อรังเรื่องที่เกิดขึ้นก่อน-หลังได้ในข้อที่ 4-5 ตามเวลาที่กำหนดเพราะนักเรียนเข้าใจรูปภาพที่บางออก anomalนและความรู้สึกต่างๆได้ชัดเจน นักเรียนชอบฟังความคิดเห็นของเพื่อนในเรื่องที่อ่านและขอบกิจกรรมกลุ่มย่อยและสามารถเข้าใจบทเรียนได้ดีกว่าเมื่อกิจกรรมหรือท่าทางภายในร่วมกันเพื่อนๆ นักเรียนสามารถเขียนบันทึกสรุปแนวคิดต่างๆของเพื่อนในกลุ่มได้ในข้อที่ 4-5 นักเรียนชอบเป็นผู้นำในการทำกิจกรรมกลุ่มในข้อที่ 4-5 ผ่านสม ควรและขอบกิจกรรมแก่กลุ่มย่อยมาก นักเรียนสามารถกลุ่มเพื่อนให้ท่าทางได้สร้างความสุขทุกครั้ง นักเรียนสามารถเข้าใจกับกันเกี่ยวกับงานอดิเรกและแผนการในอนาคตของนักเรียนได้ดีมาก นักเรียนชอบเรียนคำศัพท์จากรูปภาพมาก นักเรียนมีโอกาสฝึกอยู่ในขณะการทำกิจกรรมกับเพื่อนๆในข้อที่ 3-4 และบอกว่าชอบการทำงานเป็นกลุ่มแบบนี้ในข้อที่ 3

ชั้นที่ 4 นักเรียนแต่ละกลุ่มชอบที่จะทำงานเพื่อนกลุ่มอื่นๆ present หน้าห้องเพราะจะ
ขั้นที่ 5 เวียนเพียบกับของกลุ่มตัวเองว่าเหมือนกันหรือเปล่า นักเรียนจะลูมมาก กลุ่มที่ได้คะแนนสูงสุดมี 1 กลุ่มจึงนำผลงานอัตถอริต

อุปสรรค/ปัญหา -

การแก้ไข -

ข้อเสนอแนะ นักเรียนชอบรูปภาพและสามารถเจ้าตัวคำพพคำพพของเรื่องนี้ได้ ทำให้ทำแบบฝึกหัดเสริมเรียนรู้เวลาที่กำหนด ดังนั้นควรใช้สื่อประกอบเรื่องราวในกลุ่มคำพพ กับนักเรียนเพื่อให้การเรียนรู้รู้รู้ิขั้นเพื่อเป็นการสร้างความสนใจในการเรียน

บันทึกลังเกณฑ์คุณธรรมการสอน

คานที่ 6-8 เรื่อง Potato Cake.

ขั้นที่ 1 ครูแจ้งจุดประสงค์ให้นักเรียนรับทราบ นักเรียนสนใจมากเพราะอุปกรณ์ในการทำ cake เป็นเรื่องที่ใกล้ตัว

ขั้นที่ 2 นักเรียนมีความสนใจในการทำอาหารจึงมี feedback เกี่ยวกับคำพพคำพพมาก ประกอบกับเป็นคำพพคำพพที่เคยรู้มาบางฝัก นักเรียนชอบเรียนคำพพคำพพจากรูปภาพมากและพอจะแตกความหมายคำพพคำพพจากรูปภาพได้บางในคานที่ 6 นักเรียนได้รับความรู้จากการสอนอ่านของครูในคานที่ 6 นักเรียนมองว่าชอบครูสอนมากในคานที่ 7-8

ขั้นที่ 3 นักเรียนขวางกันทำแบบฝึกหัดได้จากคำพพคำพพที่เพื่อเรียนไป นักเรียนทำแบบฝึกหัดจับกลุ่มระหว่างขั้นตอนการทำ cake กับรูปภาพโดยเรียงลำดับเรื่องราวที่เกิดขึ้นตามลำดับที่เกิดก่อน-หลังไปในทุกภาค นักเรียนที่มีหน้าที่จับเวลาตอบเลยื่อ เพื่อนอยู่ตลอดเวลาในระหว่างการทำแกงกลุ่ม สามารถทำงานได้เสร็จตามเวลา นักเรียนในกลุ่มชอบพงค์ความคิดเห็นของเพื่อนในกลุ่มในเรื่องที่ยังทุกคน นักเรียนชอบทำกิจกรรมกลุ่มอยู่ทุกคนและเข้าใจทำเรียนได้ดีกว่าเมื่อทำกิจกรรมกับเพื่อนๆ ทุกคนนักเรียนพอใจแก่นักเรียนที่สรุปแนวคิดดังกล่าวของเพื่อนในกลุ่มได้บ้างและดูม楣เพื่อนๆให้ทำงานได้เสร็จตามเวลาในคานที่ 7-8 นักเรียนชอบเป็นผู้นำในการทำกิจกรรมกลุ่มในทุกภาคและบอกให้ความถูกต้องในเวลาที่ 7-8 และชอบการเป็นกลุ่มแบบนี้ทุกคนที่สามารถแก้ไขปัญหาเฉพาะหน้าได้ นักเรียนเขียนเรียนบันทึกสรุปแนวคิดต่างๆของเพื่อนในกลุ่ม
โปรดดูในที่ 7-8 นักเรียนสามารถพูดคุยปรึกษาครูก่อนกับเจ้าหน้าที่ และแผนการในรอบภาคของนักเรียนได้ในทุกแห่งและที่นั่นจะเป็นการเรียนทุกครั้งให้ทุกที่เมื่อมีโอกาสในเวลาที่ 7-8 นักเรียนสามารถแก้ไขปัญหาที่พบในหนังสือได้ในเวลาที่ 6 และ 8 นักเรียนสามารถเติมคำที่ถูกต้องลงไปในช่องว่างให้เป็นประโยคที่สมบูรณ์ได้ในเวลาที่ 7-8 และสามารถตอบคำถามโดยเรียนคำตอบจากเรื่องที่อ่านได้ถูกต้องในทุกคร่าว นักเรียนขอบคุณครูหรือศึกษาจากกลุ่มอย่างทุกคราวและมีโอกาสส่งข้อความในการทำกิจกรรมกับเพื่อนร่วมในเวลาที่ 6

ขั้นที่ 4

Exercise ที่ 2 คือเป็นเรื่องจาก potato cake เป็น apple cake นักเรียนแบ่งกลุ่มทบทวนได้เพราะไม่เข้าใจ ครูจะอธิบายให้ฟังเรื่องต่อหรือวิธีการเปลี่ยนคำศัพท์นักเรียนจึงเข้าใจและสามารถเติมคำที่หายไปให้สมบูรณ์ได้แต่สามารถเรียนตอบคำถามได้โดย

ขั้นที่ 5

นักเรียนอยากทราบคณนาลายกลุ่มถูกช่วยกันทำงานนั้นออกมา กลุ่มที่ได้คะแนนสูงสุดเรียงนี้มี 2 กลุ่มจึงนำผลงานขึ้นติดแสดงบนบอร์ด

อุปสรรค/ปัญหา -

การแก้ไข -

ข้อเสนอแนะ -

บั้นที่กลั่นเกลี้ยถิ่นทิศการสอน

คาบที่ 9-11 เรื่อง A Special Bird.

ขั้นที่ 1

นักเรียนสนใจรูปภาพจากศัพท์มากโดยเฉพาะรูปภาพจากภาษาสื่อที่ทำออกมาชัดเจนเดิมมาก นักเรียนสุจริตทั้งมวลแต่ยังไม่เข้าใจ

ขั้นที่ 2

นักเรียนชอบที่จะเรียนรู้ศัพท์จากรูปภาพมากในทุกครับเพราะนักเรียนสามารถเอาความหมายของศัพท์จากรูปภาพได้กันที่้ว่าศัพท์คำนั้นหมายถึงอะไรในทุกครับ นักเรียนได้รับความรู้จากการสอนอย่างครูในคาบที่ 9-10 แต่นักเรียนชอบครูสอนฟังในคาบที่ 11

ขั้นที่ 3

นักเรียนอ่านในกลุ่มช่วยกันอ่านเนื้อเรื่องใน worksheetที่ 1, 2 และ 3 และหาคำศัพท์จาก dictionary สมาชิกในกลุ่มสนใจมาก แต่ละคนต่างทำหน้าที่ของตนเองสมาชิกในกลุ่มมีโอกาสส่งเสริมรวมในการทำกิจกรรมกันเพื่อนๆบุคคล้ นักเรียนชอบฟังความคิดเห็นของเพื่อนในเรื่องที่อ่านทุกครา นักเรียนสามารถเติมคำที่ถูกต้องลงในช่องเรื่องให้เป็นประโยคที่สมบูรณ์ได้ในทุกคราและสามารถตอบคำถามโดย
เรียนค่าตอบจากการเรียนที่ผ่านมาได้ถูกต้องในทุกๆ ด้านและสามารถคุมเพื่อนๆ ให้ทำงานได้เสรีตามเวลาในทุกๆ ระดับ สามารถเรียนรู้เรื่องราวที่เกิดขึ้นก่อน-หลังได้ใน
คำที่ 10-11 นักเรียนบอกว่าชอบทำกิจกรรมกลุ่มอย่างทุกๆ ด้านและเข้าใจบทเรียน
ได้ติ่งกว่าเมื่อทำกิจกรรมกับเพื่อนในกลุ่มในทุกๆ ระดับ นักเรียนสามารถเขียน
บันทึกรูปแบบต่างๆ ของเพื่อนในกลุ่มได้ดีเพียงในคำที่ 11 ในคำที่นัก
เรียนชอบเป็นผู้นำในการทำกิจกรรมกลุ่มมากในทุกๆ ระดับ นักเรียนเร็วชอบพูดคุย
หรือศึกษาจากกลุ่มอย่างในคำที่ 11 สามารถบอกวิธีปฏิบัติเพื่อนกันบัญชา
ความเจ็บป่วยต่างๆ ของร่างกายได้ในคำที่ 10-11 และสามารถพูดคุยกับเพื่อน
เกี่ยวกับงานอัตถ์และวางแผนให้คนมาช่วยของนักเรียนได้ในคำที่ 10-11 และ
บอกว่าชอบการสอนอ่านภาษาอังกฤษของคุณในคำที่ 10-11 นักเรียน
สามารถพูดคุยกับเพื่อนที่อายกับเรื่องต่างๆ หรือหัวข้ออื่นที่เกี่ยวข้องกับงานที่
ท้าทายน้อยมากได้ทุกๆ _LANG_02 linguistics ได้ในคำที่ 10-11 นักเรียนมีโอกาสมีส่วน
รวมในการทำกิจกรรมกับเพื่อนๆ ในคำที่ 9-10 และนักเรียนชอบการทำงานเป็น
กลุ่มแบบในทุกๆ ระดับ

ขั้นที่ 4 นักเรียนชอบที่จะเป็นผู้นำในการทำงานโดยแสดงความจากการที่นักเรียนอยากเป็นผู้
ออกเกม present งานที่กลุ่มของตนเองทำ แล้วทำให้เพื่อนๆ ฟัง

ขั้นที่ 5 มีผลงานดีแบบบอร์ด 2 กลุ่ม

อุปสรรค/ปัญหา เนื่องจากมีมาก และนักเรียนเปิด dictionary ข้า

การแก้ไข 1. ฝึกให้นักเรียนใช้ dictionary ให้มากขึ้น
2. เพิ่มเวลาในการเรียนแบบหนึ่งมากขึ้น

ข้อเสนอแนะ การที่นักเรียนเปิด dictionary ข้า เพราะใช้ผิดวิธี ดังนั้นควรมีการแนะนำวิธีใช้
dictionary ที่ถูกต้องเหมาะสมเพื่อความรวดเร็วในการหาคำศัพท์ และเพื่อเป็น
แนวทางในการใช้ต่อไปในอนาคต

บันทึกสังเกตพฤติกรรมการสอน

บทที่ 12-13 เรื่อง Sickness.

ขั้นที่ 1 ครูบอกจุดประสงค์การเรียนรู้และบทบาทของบทบาทหน้าที่ของสมาชิกในกลุ่ม
นักเรียนเรียนรู้เกี่ยวกับการทำงานกลุ่มแบบ cooperative learning แล้ว

ขั้นที่ 2 ในการนำเสนอการทำจับป่วยในรูปประโยคสมบูรณ์นักเรียนมีความเข้า
ใจและความพูดประโยคได้ถูกต้องสอดคล้องได้จากการตอบคำถามในห้องเรียน

246
นักเรียนซ่อมเวียนค่าสัตพักรูปภาพมากในทุกควบและสามารถแสดงความหมายของค่าสัตพักรูปภาพในทุกควบ นักเรียนได้รับความรู้จากการสอนอ่านคลิปในทุกควบที่ 12 และบอกว่าชอบรู้สึกสอนมากในทุกควบ

ขั้นตอนที่ 3

เนื่องจากเนื้อหาในบทนี้นักเรียนเคยเรียนมาแล้ว นักเรียนจึงสามารถทำแบบฝึกหัดได้เสร็จก่อนเวลาที่กำหนดโดยวิธีการเจ็บป่วยโดยตรงจากรูปภาพที่เรียนไปแล้วโดยสามารถบอกวิธีปฏิบัติเพื่อแก้ปัญหาความเจ็บป่วยต่างๆ ของตนเองได้ในทุกควบ

ขั้นตอนที่ 4

นักเรียนในกลุ่มมีส่วนร่วมในการทำกิจกรรมร่วมกันที่เพื่อนๆ ได้เป็นอย่างดี นักเรียนรับฟังความคิดเห็นของเพื่อนคนอื่นๆ ในเรื่องที่เกี่ยวกับควบและนักเรียนชอบทำกิจกรรมกลุ่มอย่างทุกควบด้วย นักเรียนคนที่ทำห้าที่ควบคุมเวลาสามารถควบคุมเพื่อนๆ ให้ทำงานได้เสร็จได้ตามเวลาได้ในควบที่ 13 นักเรียนชอบทำกิจกรรมกลุ่มอย่างทุกควบและนำประสบการณ์เรียนได้มาที่ควบทำกิจกรรมกลุ่มร่วมกันเพื่อนๆ นักเรียนพอใจเรียนนักที่สรุปแนวคิดที่เกี่ยวกับแบบฝึกหัดในที่เรียนได้ในควบที่ 13 โดยสามารถเรียนเรื่องราวที่เกิดขึ้นก่อน-หลังได้ในทุกควบ นักเรียนชอบเป็นผู้นำในการทำกิจกรรมกลุ่มร่วมในควบที่ 12-13 ซึ่งสามารถแสดงคำที่ถูกต้องลงในข้อความได้เป็นประโยคที่สมบูรณ์ได้ในทุกควบ สามารถยุติปรึกษาหรือกับกิจกรรมและแผนการทำในอนาคตของตนเองได้ในทุกควบและนักเรียนชอบวิธีการทำความรู้จากภาพถ่ายจากควบต่างๆ และสามารถพูดคุยกับควบหรือกับเรื่องต่างๆ หรือหัวข้ออื่นๆ ที่เกี่ยวข้องกับงานที่ครูมอบหมายได้ทุกควบเมื่อมีโอกาสได้พิจารณาควบที่ 12 นักเรียนมีโอกาสอยู่ส่วนร่วมในการทำกิจกรรมกับเพื่อนๆ มากในควบที่ 12 และนักเรียนชอบการทำแผนเป็นกลุ่มแบบนี้ในทุกควบ

ขั้นตอนที่ 5

นักเรียนชอบที่จะนำผลงานของกลุ่มตนเองใต้คะแนนสูงสุดไปคิดบอร์ด หลังคิดบอร์ดแล้วนักเรียนช่วยกันเรียงเพลง Parts of body เป็นการแสดง

อุปสรรค/ปัญหา

การแก้ไข

ข้อเสนอแนะ
บัตรเกิ่ลเกิดพฤติกรรมการสอน

ชั้นที่ 14 เรื่อง Sicknesses and Remedies.

ชั้นที่ 1 คุณแจ้งจุดประสงค์การเรียนรู้ นักเรียนสามารถจับบทบาทหน้าที่ของสมาชิกในกลุ่มและสามารถทำหน้าที่ของตนเองได้

ชั้นที่ 2 นักเรียนสามารถบอกวิธีปฏิบัติเพื่อแก้ปัญหาความเจ็บป่วยต่างๆ เพราะเป็นเรื่องที่พบอยู่ในชีวิตประจำวัน เพราะเป็นเนื้อหาที่เรียนต่อจากบทที่แล้ว นักเรียนชอบเรียนค่าพหุจากกรุปภาพได้ นักเรียนได้รับความรู้จากการสอนอนำของครูมากและบอกว่าชอบครูสอนมากด้วย

ชั้นที่ 3 นักเรียนทำแบบฝึกหัดที่ 1 โดยสามารถบอกวิธีปฏิบัติเพื่อแก้ปัญหาความเจ็บป่วยต่าง ๆ ของร่างกายได้

ชั้นที่ 4 ระบบงานกลุ่มเข้ามาขึ้น นักเรียนรู้บทบาทหน้าที่และชอบพิจารณาคิดเห็นของเพื่อนในเรื่องที่ต้องการตกลงที่จะทำกิจกรรมกลุ่มร่วมกับเพื่อน ๆ นักเรียนสามารถคุมเพื่อน ๆ ให้ทำได้เสร็จตามเวลาและสามารถเขียนบนกระดาษแนวคิดต่าง ๆ ของเพื่อนในกลุ่มได้ นักเรียนชอบเป็นผู้นำในการทำกิจกรรมกลุ่มมาก นักเรียนชอบการทำเป็นกลุ่มแบบนี้และชอบพูดคุยหรือศึกษาเกี่ยวกับเนื้อหาที่เกิดขึ้นก่อนหลังได้และสามารถเติมเต็มที่ถูกต้องลงในช่วงเวลาได้เป็นประโยคที่สมบูรณ์ได้ สามารถพูดคุยเรื่องดีๆ ที่เกี่ยวกับงานตื่นเร้าและแผนการในอนาคตของนักเรียนได้และบอกว่าวิธีการสอนผ่านภาพต่างๆ กลุ่มของครู นักเรียนสามารถพูดคุยกับครูเกี่ยวกับเรื่องต่าง ๆ หรือข้ออื่นที่เกี่ยวกับงานที่ครูมอบหมายได้ก็เวลาเมื่อมีโอกาส

ชั้นที่ 5 นักเรียนได้คะแนนสูงสุด 2 กลุ่ม นักเรียนกลุ่มอื่นชอบที่จะช่วยเพื่อนกลุ่มที่ได้คะแนนสูงสุดน่าพอใจไปด้วยครับ

อุปสรรค/ปัญหา -

การแก้ไข -

ข้อเสนอแนะ -
บัลลังก์กลุ่มผู้รู้ข้อมูลการสอน

ชั้นที่ 1
ครูหนึ่งที่มีประสบการณ์การเรียนรู้ให้นักเรียนทราบ มีการพูดคุยกันเกี่ยวกับเรื่องตลาดตกา
เป็นการนำข้ามบทเรียน

ชั้นที่ 2
นักเรียนให้ความสนใจมากเพราะเป็นเรื่องที่อยู่ในวงหัวของตน นักเรียนออก
เสียงคำพูดตามได้ดีและสามารถทำได้เมื่อทราบคำพัพพ์ นักเรียนชอบที่จะ
เรียนรู้คำพูดจากบุคคลทางสามารถแค่ความหมายของคำพูดจากบุคคลทางได้
นักเรียนจะค่อยๆทำตามคำาบอกไปเรื่อยถึงอนิยมและมีภาพอะไรให้ตูนักเรียน
ได้รับความรู้จากการสอนอ่านของครูเพียงในภาคที่ 15 และนักเรียนชอบครูสอน
มากทุกคนด้วย

ชั้นที่ 3
นักเรียนตอบคำถามจากการเรียนที่ล่าได้ถูกต้องเพราะเป็นเรื่องที่นักเรียนสนใจมาก
เนื่องจากทุกคนรู้จักตลาดนี้คำาบอกและตลาดเพราะเป็นสถานที่ที่อยู่ในชีวิต
ราชบุรี จากความสนใจนี้ทำให้นักเรียนสนใจการทำแบบฝึกหัดมากเป็นพิเศษด้วย
นักเรียนมีโอกาสมีส่วนร่วมในการทำกิจกรรมกับเพื่อน ๆ ในภาคที่ 15-16 ต่อ
ขอการทำกิจานเป็นกลุ่มบนไม้ในภาคที่ 15 เท่านั้น นักเรียนสามารถเดิม
crossword ได้ถูกต้องและสามารถเรียนรู้เรื่องราวที่เกิดขึ้นก่อน-หลังได้ นักเรียน
ชอบพูดความคิดเห็นของเพื่อนในเรื่องที่อ่านและชอบทำกิจกรรมกลุ่มยอยมาก
และยินที่ทำ鲛านที่ได้รับเมื่อทำกิจกรรมร่วมกันเพื่อนในกลุ่มและสามารถกลุ่ม
เพื่อน ๆ ให้ทำงานได้เสรีตามเวลา นอกจากนี้ยังสามารถได้คำาที่ถูกต้องเองใน
ช่องว่างได้เป็นประโยคที่สมบูรณ์ได้ นักเรียนสามารถเขียนนักที่สรุปแนวคิด
ต่าง ๆ จากการทำแบบฝึกหัดได้มาก นักเรียนชอบเป็นผู้นำในการทำกิจกรรม
กลุ่มมาก สามารถแก้ไขปัญหาจากการทำกิจกรรมในบทเรียนได้และสามารถพูด
คุยเรื่องที่เกี่ยวกับงานอดิเรกและแผนการในอนาคตของตนเองกับครูได้ในภาค
ที่ 15-16 และบอกว่าชอบการทำกิจานภาษาอังกฤษของครู นักเรียนสามารถ
พูดคุยกับครูเกี่ยวกับเรื่องต่าง ๆ หรือท้าข้ออื่น ๆ ที่เกี่ยวข้องกับงานที่ครูมอบ
หมายได้ทุกวันเมื่อโอกาสได้ในภาคที่ 16 เท่านั้น

ชั้นที่ 4
นักเรียนทำแบบฝึกหัดที่ 3-4 ได้ถูกต้องเพราะมีรูปภาพประกอบขั้นตอน นักเรียน
ชอบที่จะเรียนรู้คำพูดจากบุคคลทางได้เรียนรู้ได้ง่ายต่อการทำแบบฝึกหัดในบทนี้

ชั้นที่ 5
มีกลุ่มที่ได้คะแนนสูงสุด 3 กลุ่ม เพื่อน ๆ ใจกับนักเรียนติดบ่มรอด

อุปสรรค/ปัญหา

การแก้ไข

ข้อเสนอแนะ

-
Appendix G  Item-person interaction test-of-fit statistics for English reading Comprehension (Rasch analysis).

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>Location</th>
<th>Fit Residual</th>
<th>PERSONS</th>
<th>Location</th>
<th>Fit Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.000</td>
<td>0.604</td>
<td>-0.288</td>
<td>0.233</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>0.389</td>
<td>0.913</td>
<td>0.741</td>
<td>0.667</td>
<td></td>
</tr>
<tr>
<td>Skewness</td>
<td>0.230</td>
<td>-0.329</td>
<td>0.066</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kurtosis</td>
<td>0.000</td>
<td>-0.009</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td>Complete data DF = 0.966</td>
<td>Complete data DF = 9600.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ITEM-TRAIT INTERACTION</th>
<th>RELIABILITY INDICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Item Chi Squ 104.858</td>
<td>Separation Index 0.726</td>
</tr>
<tr>
<td>Total Deg of Freedom 128.000</td>
<td>Cronbach Alpha 0.729</td>
</tr>
<tr>
<td>Total Chi Squ Prob 0.933</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LIKELIHOOD-RATIO TEST</th>
<th>POWER OF TEST-OF-FIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi Squ</td>
<td>Power is GOOD</td>
</tr>
<tr>
<td>Degrees of Freedom</td>
<td>(Based on SepIndex of 0.726)</td>
</tr>
<tr>
<td>Probability</td>
<td></td>
</tr>
</tbody>
</table>
Appendix H  Item-person interaction test-of-fit statistics for students’ attitude and behavior towards reading comprehension (Rasch analysis).

ITEM-PERSON INTERACTION

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>Location</th>
<th>Fit Residual</th>
<th>PERSONS</th>
<th>Location</th>
<th>Fit Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.300</td>
<td>0.226</td>
<td>0.162</td>
<td>-0.285</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>0.399</td>
<td>0.372</td>
<td>0.740</td>
<td>2.019</td>
<td></td>
</tr>
<tr>
<td>Skewness</td>
<td>0.427</td>
<td>-0.409</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-0.233</td>
<td>-0.038</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correlation</td>
<td>-0.002</td>
<td>-0.068</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Complete data DF = 0.965 Complete data DF = 2000.000

ITEM-TRAIT INTERACTION

<table>
<thead>
<tr>
<th>Total Item Chi Squ</th>
<th>Separation Index 0.922</th>
</tr>
</thead>
<tbody>
<tr>
<td>198.279</td>
<td>160.000</td>
</tr>
<tr>
<td>Total Chi Squ Prob</td>
<td>0.021</td>
</tr>
</tbody>
</table>

RELIABILITY INDICES

<table>
<thead>
<tr>
<th>Separation Index 0.922</th>
<th>Cronbach Alpha 0.915</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.922</td>
<td>0.915</td>
</tr>
</tbody>
</table>

LIKELIHOOD-RATIO TEST

<table>
<thead>
<tr>
<th>Power is EXCELLENT [Based on SepIndex of 0.922]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi Squ Degrees of Freedom Probability</td>
</tr>
</tbody>
</table>
Appendix I: Students’ Reading Comprehension and Item ‘Difficulties’

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>STUDENTS</th>
<th>ITEM DIFFICULTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.0</td>
<td>High measures of attitude and behaviour</td>
<td>Hard item</td>
</tr>
<tr>
<td>1.0</td>
<td></td>
<td>32.1</td>
</tr>
<tr>
<td>0.0</td>
<td></td>
<td>38.1</td>
</tr>
<tr>
<td>-1.0</td>
<td></td>
<td>44.1</td>
</tr>
<tr>
<td>-2.0</td>
<td></td>
<td>20.1</td>
</tr>
<tr>
<td>-3.0</td>
<td>Low measure of attitude and behaviour</td>
<td>Easy item</td>
</tr>
</tbody>
</table>

Graph of Students’ reading comprehension scores and item ‘difficulties’ on the same scale (in logits).

Notes on graph (Appendix I)

1. The scale is in logits, the log odds of answering the response categories (about -0.6 to +1.2).
2. Students’ reading comprehension measures are placed on the LHS of the scale and item thresholds (item ‘difficulties’) are placed on the RHS of the scale.
3. 32.1 refers to the threshold between the response categories 0 and 1 for item 32. This thresholds are ordered 32.1 is ‘hardest’ (difficulty’ is 1.2 logits). Other item thresholds are labeled similarly.
Appendix J  Students’ attitude and behaviour and item ‘thresholds’.

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>STUDENT</th>
<th>ITEM DIFFICULTIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0</td>
<td>High measures of attitude and behaviour</td>
<td>Hard items</td>
</tr>
<tr>
<td></td>
<td></td>
<td>26.3</td>
</tr>
<tr>
<td>2.0</td>
<td>X</td>
<td>02.3  30.3  12.3  32.3  08.3</td>
</tr>
<tr>
<td></td>
<td>X</td>
<td>11.3  31.3  25.3</td>
</tr>
<tr>
<td></td>
<td>XX</td>
<td>09.3  28.3  27.3  10.3  29.3</td>
</tr>
<tr>
<td></td>
<td>XXX</td>
<td>41.3  46.3  49.3  06.3  50.3  45.3  05.3</td>
</tr>
<tr>
<td>1.0</td>
<td>XXXXXX</td>
<td>43.3  35.3  07.3  04.3</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXX</td>
<td>42.3  44.3  03.3  01.3  36.3</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXX</td>
<td>08.2  09.2  16.3  17.3  18.3</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXXXXXX</td>
<td>34.3  31.2  30.2  12.2  10.2  32.2  29.2  54.3</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXXXXXXXXX</td>
<td>26.2  33.3  53.3  42.2</td>
</tr>
<tr>
<td>0.0</td>
<td>XXXXXXXXXXXXXXXXXXXXX</td>
<td>04.2  25.2  15.3  44.2  46.2</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXXXXXXXXXXX</td>
<td>50.2  07.2</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXXXXXXXXXXXXX</td>
<td>28.2  49.2  58.3  36.2  34.2  18.2  41.2  02.2</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXXXXXXXXXXXXXX</td>
<td>57.3  11.2  03.2  43.2  06.2</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXXXXXXXXXXXXXXX</td>
<td>17.2  33.2  54.2  27.2  58.2  16.2  10.1  45.2</td>
</tr>
<tr>
<td></td>
<td>XXXXXXXXXXXXXXX</td>
<td>15.2  05.2</td>
</tr>
<tr>
<td></td>
<td>XXXXXX</td>
<td>53.2  09.1  41.1  33.1  01.2  08.1  35.2</td>
</tr>
<tr>
<td>-1.0</td>
<td>XXX</td>
<td>30.1  29.1  04.1  34.1  53.1  44.1  57.1  07.1</td>
</tr>
<tr>
<td></td>
<td>45.1  57.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XXX</td>
<td>02.1  27.1  25.1  50.1  26.1  31.1  32.1  43.1</td>
</tr>
<tr>
<td></td>
<td>12.1  46.1  42.1  49.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>XX</td>
<td>18.1  11.1  03.1</td>
</tr>
<tr>
<td></td>
<td>X</td>
<td>54.1  36.1  35.1  16.1</td>
</tr>
<tr>
<td></td>
<td>X</td>
<td>15.1  28.1  58.1  06.1</td>
</tr>
<tr>
<td>-2.0</td>
<td></td>
<td>01.1  17.1</td>
</tr>
<tr>
<td>-3.0</td>
<td></td>
<td>05.1</td>
</tr>
<tr>
<td>-4.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-5.0</td>
<td>Low measures of attitude and behaviour</td>
<td>Easy items</td>
</tr>
</tbody>
</table>

X = 2 persons
Graph of students' attitude and behaviour scores and item threshold 'difficulties' on the same scale (in logits)

Notes on graph (Appendix J)

1. The scale is in logits, the log odds of answering the response categories (about $-3.0$ to $+2.2$ logits).

2. Students' attitude and behaviour measures are placed on the LHS of the scale and item thresholds (item 'difficulties') are placed on the RHS of the scale.

3. 26.3 refers to the threshold between the response categories 2 and 3 for item 26; 26.2 refers to the threshold between the response categories 1 and 2 for the same item; 26.1 refers to the threshold between the response categories 0 and 1 for the same item. These thresholds are ordered 26.1 is 'easiest' (difficulty is $-1.4$ logits), 26.2 is 'harder' (difficulty is $0.4$ logits), 26.3 is 'hardest' (difficulty is $2.2$ logits), in line with the ordering of the response categories. Other item thresholds are labeled similarly.