

## THE DEVELOPMENT OF ENGLISH VOCABULARY PRONUNCIATION SKILLS THROUGH BRAIN-BASED LEARNING FOR GRADE 3 STUDENTS AT BAN BUAK PAO SCHOOL

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### Abstract

This research aims to: 1) test the effectiveness of the English vocabulary pronunciation skill practice for grade 3 students at Ban Buak Pao School according to the 70/70 standard criteria; 2) compare the achievement in English vocabulary pronunciation before and after learning using brain-based learning management for grade 3 students at Ban Buak Pao School; and 3) examine the satisfaction of grade 3 students towards the brain-based learning management approach. The experimental group consisted of grade 3 students at Ban Buak Pao School, selected through simple random sampling. The research design was quasi-experimental, using a single-group pre-test and post-test approach. The research instruments included lesson plans, pre- and post-tests, and a student satisfaction survey. Data were analyzed using basic statistical methods, including mean, standard deviation, percentage, and t-test.

The results of the research revealed that: 1) The effectiveness of the English vocabulary pronunciation skill practice for grade 3 students at Ban Buak Pao School was 74.78/73.77, which is higher than the standard criteria of 70/70; 2) The achievement in English vocabulary pronunciation after learning through brain-based learning management was significantly higher than before learning at the .05 level; and 3) The satisfaction of grade 3 students towards the brain-based learning management approach was at the highest level.

Keywords: Pronunciation skills, Vocabulary, Brain-based learning management

### Introduction

The characteristics of 21st-century learners (3R8C) emphasize essential skills in knowledge areas, including reading skills. Learners must be able to read fluently for communication in daily life. This aligns with the National Education Act of 1999, which states that education is a process aimed at promoting the growth of individuals and society through the transmission of knowledge, training, practice, and the preservation of culture. Section 22 of the Act stipulates that education management must be based on the principle that every learner has the ability to learn and develop themselves. The educational process must

support learners in developing naturally and using their full potential. This is also in accordance with the Ministry of Education (2008), which specifies that the quality of learners upon completing grade 6 should be able to correctly read sentences, texts, short stories, and poems according to reading and writing principles, as well as provide information about themselves, their friends, and their immediate surroundings.

English vocabulary pronunciation refers to the act of producing sounds from the spelling of words. The spelling can be both in regular and irregular forms, which can be studied based on patterns. It requires the use of observation and memorization principles to pronounce words that do not follow conventional spelling rules. Additionally, attention must be given to aspects such as pitch (high-low), stress (strong-weak), intonation, rhythm, tone, body language, eye contact, and other forms of expression. These pronunciation methods are widely accepted and easily understood. Observations made at Ban Buak Pao School, with grade 3 students, along with feedback from teachers, revealed that the students could not pronounce English vocabulary correctly according to standard pronunciation rules. It was found that they faced challenges in reading aloud, often producing weak sounds, and had difficulty spelling words correctly. These issues stemmed from a lack of foundational English language skills and a lack of confidence in using the language. This aligns with the results of the National O-Net examination for grade 6 students, which showed an average score of 33.57% for the academic year 2022, falling below the required standard. In a study by Ratchadakan Yaidee (2022), titled "The reading aloud skill development by using phonics exercises of grade 4 students at Bannontarod school, Kamphaengphet province," it was found that students struggled to pronounce English words correctly, even though they could recognize and understand the meaning of the words when spoken. However, when the words appeared in written form, most students were unable to pronounce them correctly or comprehend their meanings. This was evident during classroom reading activities where students appeared anxious due to their inability to perform the activities or perform them poorly, and their reading scores were lower than in other skill areas. Similarly, Lalida Thongrat (2020) conducted research on The Development of English Reading Aloud skill through the Use of Phonics based on the Davies Instructional Model of Grade 11 Students. It was found that Grade 5 students faced difficulties in pronouncing English vocabulary, which is a fundamental skill for correct pronunciation and communication. This was due to their lack of understanding of the phonetic system of letters, both vowels and consonants, which led to difficulties in pronunciation, mistakes in sounding out words, and low confidence in reading aloud. This resulted in slow vocabulary retention, communication failure, and a lack of interest in learning English. In addition, Ailada Chanloy (2019) researched English Pronunciation with Using Peer-Assisted Learning for Prathomsuksa 4 Students. It was found that students were either unable or reluctant to pronounce English words due to fear of

mispronunciation. This fear led them to avoid reading aloud, ultimately resulting in incorrect pronunciation of the words.

Brain-based learning refers to an approach to teaching and learning that places the student at the center, acknowledging the structural and functional differences of individuals' brains. Teachers should encourage and guide students in a way that aligns with their developmental stage, applying various methods and preparing them adequately before the learning process. This approach ensures students are ready for learning. According to Witthayakorn Chiangkul (2005), brain-based learning is a theory that aligns with the brain's functioning. It suggests that learning is rooted in the brain's structure and processes. If the brain is not hindered in its natural processes, learning will occur. In essence, all individuals with a normal brain naturally learn for survival. The brain is an incredibly powerful processing tool. However, traditional educational practices often hinder the brain's learning processes, leading to discouragement, neglect, or even punishment for natural learning processes. This perspective is supported by Akhrapoom Wongsothorn and Pornpilai Lertwicha (2007), who argue that understanding the brain and the learning process, based on knowledge of how the brain works, allows the design of educational practices that focus on the factors that induce brain change. The development of neural networks and the brain's responses to teaching methods should be considered in the design of learning activities. Changes in the brain during learning reflect how students' understanding and proficiency are shaped. This approach raises questions about how learning success can be measured and what methods should be used for assessment. Nattaphong Tangphet (2013) adds that brain-based learning focuses on applying knowledge of brain functioning to design learning activities that align with the brain's natural learning processes, ensuring that the steps in the learning process are effective.

The researcher has focused on studying the development of English vocabulary pronunciation skills through brain-based learning for grade 3 students at Ban Buak Pao school. The study utilizes an innovative approach to learning management to enhance the classroom learning environment and improve its effectiveness. Brain-Based Learning consists of five steps: 1) Preparation; 2) Acquisition; 3) Elaboration; 4) Memory Formation; and 5) Functional Integration. These steps are designed to foster deep understanding and the application of knowledge in various contexts. Additionally, the approach emphasizes the creation of long-term memory, the development of analytical and creative thinking skills, and the ability to solve problems and apply knowledge in everyday life. The goal is to enhance students' ability to pronounce English words correctly, solve challenges, and improve their skills in a way that meets quality standards and aligns with the desired characteristics of learners.

## Objectives

1. To test the effectiveness of the English vocabulary pronunciation skill practice for grade 3 students at Ban Buak Pao School according to the 70/70 standard criteria.
2. To compare the achievement in English vocabulary pronunciation before and after learning using brain-based learning management for grade 3 students at Ban Buak Pao School.
3. To examine the satisfaction of grade 3 students towards the brain-based learning management approach.

## Research Methodology

This study is conducted as quasi-experimental research using a one-group pretest-posttest design.

### 1. Scope of the Research

1.1 Population and Sample: The population consists of students from Grade 1 to Grade 9 at Ban Buak Pao School, located in Nong Yaeng Subdistrict, San Sai District, Chiang Mai Province, under the jurisdiction of the Chiang Mai Primary Educational Service Area Office 2, in the first semester of the 2024 academic year, totaling 176 students. The experimental sample group consists of 23 grade 3 students at Ban Buak Pao School, divided into 12 male students and 11 female students, selected using a specific sample method. This is due to the school being a network school and the grade level being authorized for research.

1.2 Content Area: The study focuses on the foreign language curriculum as outlined in the Basic Education Core Curriculum B.E. 2551 (2008), specifically in the Foreign Language subject. The content focuses on English vocabulary under the standard indicator "T 1.1, 3rd grade/2: Understanding and interpreting content from listening and reading various types of media and providing reasonable opinions."

1.3 Duration: The research is conducted during the first semester of the 2024 academic year, from June to September 2024, for a total of 6 weeks. The activities held once a week, for 1 hour per session, including pre- and post-assessments across 6 sessions.

1.4 Study Variables: Independent Variable: 1) Brain-Based Learning Instructional Plan. Dependent Variables: 1) English vocabulary pronunciation skills, 2) Students' satisfaction with the Brain-Based Learning approach.

### 2. Research Tools

The research tools used include: Brain-Based Learning Instructional Plan, with an efficiency value of 3.63. English vocabulary pronunciation skill test, with reliability of 0.73. A student satisfaction survey regarding the instructional approach, using a 5-point Likert scale, with an average rating of 4.46, evaluated by experts.

### 3. Steps in the Research Process

3.1 Orientation: Students provided with an understanding of the learning activities, including the objectives, preparations, and participation in activities according to the correct procedures.

3.2 Conducting the Learning Activities: Learning activities organized according to the steps of the innovation plan, summarizing key activities for each instructional plan.

3.3 Data Collection: The researcher collected data from student scores on vocabulary pronunciation to analyze the data further.

#### 4. Data Collection and Analysis

4.1 Student Performance: Student scores on basic word reading and writing tasks collected for analysis using basic statistics, including: Mean, Standard deviation, and T-test.

4.2 Student Feedback: Student feedback on the learning process analyzed using basic statistical methods.

5. The statistical methods used in this research include the mean, standard deviation, and dependent sample t-test.

### Research Findings

Objective 1: To test the effectiveness of the English vocabulary pronunciation skill practice for grade 3 students at Ban Buak Pao School according to the 70/70 standard criteria. The results revealed the following: The average score obtained from the in-class practice activities was 44.25 out of 60, with a standard deviation of 1.29. The process efficiency (E1) was 74.78, which exceeds the established standard. The total score for the post-test was 509 points, with an overall average score of 21.63 and a standard deviation of 4.65. These results indicate that Grade 3 students at Ban Buak Pao School, who learned using the English vocabulary pronunciation practice materials, had higher average post-test scores compared to pre-test scores. The effectiveness of the English listening practice materials for comprehension (E2) was 73.77, which also exceeded the established standard.

Objective 2: To compare the achievement in English vocabulary pronunciation before and after learning using brain-based learning management for grade 3 students at Ban Buak Pao School. The results revealed that: The post-learning achievement in English vocabulary pronunciation had an average score and standard deviation of ( $\bar{x} = 21.63$ , S.D. = 4.65), which was higher than the pre-learning scores, which had an average score and standard deviation of ( $\bar{x} = 9.69$ , S.D. = 2.69). This difference was statistically significant at the .05 level.

Objective 3: To examine the satisfaction of grade 3 students towards the brain-based learning management approach. The results showed that: The students were highly satisfied with the Brain-Based Learning approach, with an average satisfaction score of ( $\bar{x} = 4.69$ , S.D. = 0.48)

## Discussion of the Research Results

1. The effectiveness of the English vocabulary pronunciation skill practice for grade 3 students at Ban Buak Pao School showed scores higher than the established standard (74.78/73.77). This is because the English vocabulary pronunciation practice aligns appropriately with the content, reaching a moderately high level, which provided the students with a challenging yet enjoyable learning experience. This finding is consistent with the research by Nattanan Jantasok and Warangkana Tesana (2021), who studied Improving Reading and Spelling Skills of Prathomsuksa 6 Students by Using Exercises with Brain-Based Learning (BBL). Their results showed that the effectiveness of the reading and spelling plan was 82.07/80.86, meeting the established standards. Furthermore, this is in line with the research by Ratchadakan Yaidee. (2022), who studied the reading aloud skill development by using phonics exercises of grade 4 students at Bannontarod school, Kamphaengphet province, using phonics-based pronunciation practice materials. The study found that the phonics-based pronunciation practice for improving English vocabulary pronunciation skills achieved an effectiveness of 80.30/82.00, exceeding the set standard.

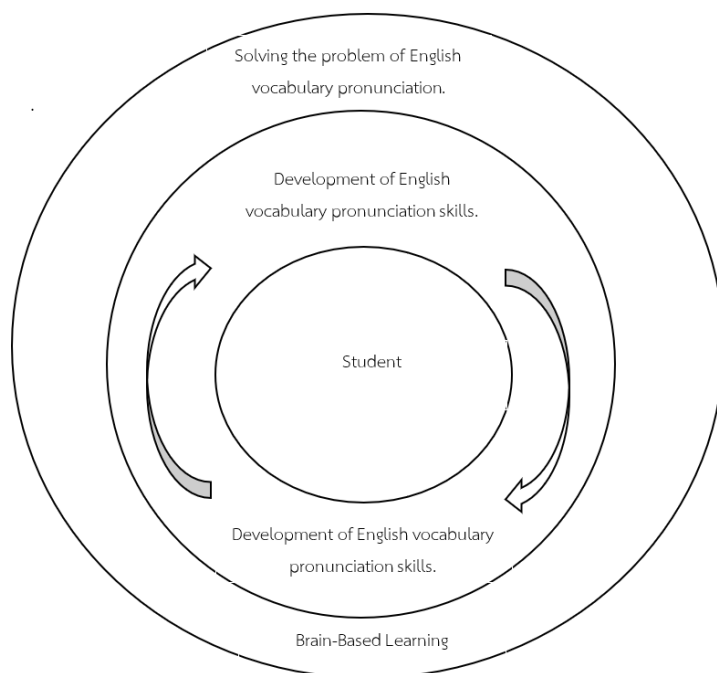
2. The achievement in English vocabulary pronunciation before and after learning using brain-based learning management for grade 3 students at Ban Buak Pao School. The results after the learning process showed a statistically significant increase in the average score compared to before the lesson, with a significance level of .05. This can be attributed to the clear explanation of teaching methods by the instructor, as well as the appropriateness of the learning materials and mid-course tests. The lessons were effectively structured in a logical order that aligned with the content. Knowledge was conveyed in a step-by-step manner, which helped maintain student interest and engagement. However, the use of media and technology in the teaching process was somewhat limited, which occasionally led to student disengagement. This finding is consistent with the research by Kulthida Uansri (2019), who studied Development of English Reading Skills through Reading English Short Stories for Grade 6 Students. The study found that the achievement in English learning increased significantly at the .01 level after using skill development methods to address reading comprehension challenges through short stories. Additionally, this finding aligns with the research by Patcharin Jantee (2022), who investigated Development of English listening comprehension achievement using podcast for grade-10 students at Chiang dao Wittayakom school, Chiang Mai. The study revealed a statistically significant improvement in the students' English listening comprehension achievement at the .01 level after using skill development techniques through podcasts.

3. the satisfaction of grade 3 students towards the brain-based learning management approach expressed a high level of satisfaction with the Brain-Based Learning approach, with an average score of ( $\bar{x} = 4.69$ , S.D. = 0.48). This indicates that the students were eager to

learn new things and actively engaged in various activities. They cooperated well in the teaching and learning process, leading to a high level of satisfaction with the teaching methods. This finding aligns with the research by Nattanan Jantasok and Warangkana Tesana (2021), who studied Improving Reading and Spelling Skills of Prathomsuksa 6 Students by Using Exercises with Brain-Based Learning (BBL). They found that Grade 6 students expressed the highest level of satisfaction with the learning activities focused on reading and spelling skills through BBL, with an average score of ( $\bar{x} = 4.61, S.D. = 0.30$ ). Additionally, this finding is consistent with the research by Khaneangchai Viriyasoonthon (2019), who explored Learning Management to Promote Reading Writing and Critical Thinking Skills of Grade 2 Student. The study revealed that the Grade 2 students showed a high level of satisfaction with the use of Brain-Based Learning innovations in the overall learning process, with an average score of ( $\bar{x} = 2.77, S.D. = 0.29$ ).

### New Knowledge Gained from the Research

The research on the development of English vocabulary pronunciation skills through brain-based learning for grade 3 students at Ban Buak Pao school focuses on addressing the challenges of English vocabulary pronunciation for these students. It aims to enhance their ability to pronounce English vocabulary by utilizing Brain-Based Learning. This approach is designed to improve their English language learning outcomes, allowing students to achieve higher academic performance in English according to their potential, following the model of the learning process outlined in this study.



## Summary

The researcher concludes the findings as follows:

The effectiveness of the English vocabulary pronunciation skill practice for grade 3 students at Ban Buak Pao School was 74.78/73.77, which is higher than the standard criteria of 70/70; 2) The achievement in English vocabulary pronunciation after learning through brain-based learning management was significantly higher than before learning at the .05 level; and 3) The satisfaction of grade 3 students towards the brain-based learning management approach was at the highest level.

1. The effectiveness of the English vocabulary pronunciation skill practice for grade 3 students at Ban Buak Pao School was 74.78/73.77, which is higher than the standard criteria of 70/70

2. The achievement in English vocabulary pronunciation after learning through brain-based learning management was significantly higher than before learning at the .05 level

3. The satisfaction of grade 3 students towards the brain-based learning management approach was at the highest level. ( $\bar{X}$  = 4.69, S.D. = 0.48).

## Recommendations

**1. Suggestions for Learning Activities:** It is recommended to inform students in advance that this innovation will be used for research purposes, in order to request their cooperation in following the learning activities and this innovation should be applied with higher grade students, as they may be more prepared and possess a greater knowledge base.

**2. Suggestions for Future Research:** The researcher can modify the teaching steps by combining certain steps for better alignment with the abilities of the sample group and the researcher should collect pre-learning and post-learning scores to compare with post-learning results, in order to study students' developmental progress.

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