THE DEVELOPMENT OF ENGLISH TEXT READING SKILLS BY USING BRAIN-BASED LEARNING FOR GRADE 7 STUDENTS AT CHOOMCHONBANKAI SCHOOL

1. Kanittha Kanthakham*, 2. Phithak Faengkot, 3. Boontham Peanchaipoom

Affiliate: 1., 2., 3. Mahamakut Buddhist University Lanna Campus
*Corresponding Arthor E-mail: givekanthakham@gmail.com

Abstract

This research article aimed to: 1) test the effectiveness of English text reading skill practice exercises for Grade 7 students at Choomchonbankai School according to the standard criteria of 70/70. 2) compare the learning outcomes English text reading before and after using Brain-Based Learning (BBL) for Grade 7 students at Choomchonbankai School. And 3) examine the satisfaction of Grade 7 students regarding the Brain-Based Learning (BBL) approach. The sample group consisted of Grade 7 students at Choomchonbankai School, selected through purposive sampling. The research employed a quasi-experimental design using a single-group pretest-posttest method. Research instruments included lesson plans, pretest and posttest assessments, and a student satisfaction questionnaire. Data were analyzed using basic statistics, including mean, standard deviation, percentage, and t-test analysis.

The research found that:

1) The efficiency of the English text reading skill practice exercises for Grade 7 students at Choomchonbankai School was 72.21/78.33, which exceeded the predetermined standard criteria.

2) The English text reading achievement of Grade 7 students at Choomchonbankai School improved significantly after using the Brain-Based Learning (BBL) approach, with a statistical significance level of .05.

3) The students' satisfaction with the Brain-Based Learning (BBL) approach was rated at a high level ($\bar{X}$ = 4.28, S.D. = 0.57)

Keywords: 1. reading skill; 2. English text; 3. Brain-Based Learning

Introduction

21st-century learning skills encompass knowledge, understanding, abilities, and competencies essential for living in the modern world. Given the rapid pace of change, individuals must be well-prepared to navigate these transitions and become professionals who effectively apply their knowledge and skills while maintaining a continuous learning mindset. Only those who possess the necessary and market-relevant skills will achieve success. Conversely, those who fail to develop higher-level competencies in this century risk falling behind in both global and labor market dynamics. Therefore, the most crucial skill in the 21st century is the ability to learn. Modern individuals must cultivate advanced learning skills, particularly in lifelong learning, enabling them to continuously acquire knowledge throughout their lives. Moreover, adaptability is essential, allowing individuals to effectively integrate various learning components into practice, ensuring efficiency and relevance in real-world applications. (Ekkachai Phuttasorn, 2013). This aligns with The National Education Act B.E. 2542 (amended in 1999), which defines "education" as a learning process for personal and social growth through the transmission of knowledge, training, cultural preservation, creativity, academic advancement, and knowledge creation within a supportive environment. According to Sections 22 and 24, education management must adhere to the principle that every learner can learn and develop themselves, with the learner being at the center of the educational process. Furthermore, this aligns with the Basic Education Core Curriculum B.E. 2551 (Ministry of Education, 2008), which specifies that students completing Grade 3 should be able to pronounce English vocabulary accurately.

Reading refers to the process of expressing the meaning of words or characters in written text in a way that the reader communicates the intended meaning accurately and completely through spoken words and sentences. This practice enhances comprehension of the content being read and allows the reader to interpret and infer meaning based on prior knowledge and experience. Observations of students and feedback from cooperating teachers during teaching practice at Choomchonbankai School revealed that most students lack knowledge of proper English pronunciation. They struggle with specific sounds, such as /th/ and /v/, and their biggest challenge is a fear of mispronunciation and a lack of confidence in speaking English. This issue aligns with the Ordinary National Educational Test (O-NET) results for Grade 9 (Matthayom 3) in English at Choomchonbanka School, which revealed an average score and standard deviation of ($\bar{x}$ = 28.26, S.D. = 8.77) in the 2023 academic year. Similarly, a study by Lalida Thongrat (2020) on the development of English reading aloud skill through the use of phonics based on the Davies instructional model of grade 11 students. These challenges are linked to a lack of foundational knowledge about phonetic systems, including vowels and consonants, resulting in incorrect pronunciation and spelling. Consequently, students lacked confidence in reading and speaking, struggled to memorize

vocabulary, failed to communicate effectively, and showed diminished interest in learning English. This issue aligns with the findings of Atchima Chaichit (2020), who conducted a study on Developing the skill of reading and pronouncing English words (Phonics) using practice exercises for second-grade students at Srinakharinwirot University, they relied on memorizing vocabulary as isolated words, often writing Thai transliterations alongside the words. This approach hindered their ability to pronounce unfamiliar words outside their lessons, contributing to low English achievement. Without intervention, these difficulties could adversely affect their progress in higher-level English learning. Similarly, Ratchadakan Yaidee (2022) investigated the reading aloud skill development by using phonics exercises of grade 4 students at Bannontarod school, Kamphaengphet province. The study identified a significant issue: students could recognize and understand spoken vocabulary but struggled to read and pronounce the corresponding written words. Classroom observations revealed that students often hesitated or avoided participation in reading activities due to anxiety over their inability to perform well. As a result, their reading skills were notably weaker than their listening or speaking skills, reflecting lower achievement in this critical area.

Brain-Based Learning (BBL) refers to a learning approach that leverages the structure and function of the brain as a tool for learning. Rather than obstructing brain activity, BBL promotes its optimal functioning based on the principle that everyone is capable of learning and has the innate ability to do so from birth. This aligns with the perspective of Pharita Garaparp (2021), who researched on the development of learning activities based on brain-based learning (BBL) with motion graphic media to enhance reading and spelling of students in Pratom 2 stated that Brain-Based Learning emphasizes learner-centered approaches, acknowledging the structural and functional differences in individual brains. Teachers are encouraged to facilitate learning tailored to each developmental stage, incorporating diverse preparatory steps to ensure readiness before the learning process begins. Similarly, Patcharamon Polpraphrut (2022) who researched Management of Brain-based Learning Affecting Learning Achievement and Creativity for Primary 4 Students Studying the Concept of Goods and Services in the Economic Learning Area stated that brain-based learning refers to an instructional approach in which learners develop various skills through a learning design that considers the natural functioning of each student's brain. This approach emphasizes hands-on activities, enabling students to engage in practical experiences that effectively enhance their potential. This is further supported by Aminoh Tarita (2018), who researched on Effect of brain-based learning with predict-observe-explain strategy on science achievement, science process skills, and instructional satisfaction of grade 6 students described BBL as a learning management process that applies knowledge of brain functioning according to students' developmental stages. This involves designing learning activities, materials, and an environment conducive to learning, ultimately supporting students in achieving their fullest potential.

Therefore, the researcher is interested in studying the development of English text reading skills by using brain-based learning for grade 7 students at Choomchonbankai school. This approach integrates innovative learning strategies to enhance the effectiveness of classroom learning environments. The Brain-Based Learning methodology comprises five steps: 1) Brain Preparation Stage: Stimulating interest to connect with new knowledge. 2) Providing New Knowledge Stage: Introducing new information. 3) Understanding Stage: Presenting data to support the integration of prior knowledge with new concepts. 4) Memory Encoding Stage: Facilitating the understanding and retention of information. 5) Integration Stage: Applying knowledge to new situations. This framework aims to improve students' English text reading skills and equip them with the ability to address learning challenges, thereby fostering their academic potential and aligning with desirable learning outcomes.

Objectives

1) To test the effectiveness of English text reading skill practice exercises for Grade 7 students at Choomchonbankai School according to the standard criteria of 70/70.

2) To compare the learning outcomes English text reading before and after using Brain-Based Learning (BBL) for Grade 7 students at Choomchonbankai School.

3) To examine the satisfaction of Grade 7 students regarding the Brain-Based Learning (BBL) approach.

Research Methodology

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

1. Scope of the Study.

1.1 Population and Sample Group: The population of the study includes Grade 7 to Grade 9 students at Choomchonbankai School, Mae Na Wang Subdistrict, Mae-Ai District, Chiang Mai Province, under the Office of the Basic Education Commission, Semester 1, Academic Year 2024, totaling 116 students. The experimental group consists of Grade 7 students from the same school, totaling 45 students, with 14 male students and 31 female students. The students were selected using simple random sampling, as the school is a network school, and the class was approved for research.

1.2 Content Area: The study focuses on the Foreign Language Curriculum, as outlined in the 2008 Basic Education Core Curriculum, specifically the English language learning area. The content includes: Topic: English pronunciation of texts Indicators: Indicator T.1.1 M.1/2 – Ability to read English texts (short stories and poems) accurately according to pronunciation rules.

1.3 Duration: The researcher conducted the study during Semester 1 of the 2024 academic year, from June to September 2024, for 6 weeks. Each week included 1 session, lasting 1 hour per session. The pretest and posttest were administered over 6 classes.

1.4 Variables Studied: The independent variable is the Brain-Based Learning (BBL) activity. The dependent variables are: The students' achievement in English text reading. The level of satisfaction of Grade 7 students with the Brain-Based Learning approach.

2. Development and Quality Check of the Tools.

The tools used in the study include: Learning Plans: 3 plans, each lasting 2 hours, for a total of 6 hours. The effectiveness value of the plans is 3.63. Pretest and Posttest: 30 multiple-choice questions, with a reliability coefficient of 0.61. Student Satisfaction Questionnaire: A 5-point Likert scale to assess student satisfaction with the learning process, with an average score of 4.32.

3. Research Procedure

3.1 Orientation: Provide students with an understanding of the learning activities, including the objectives, preparation, and how to correctly and appropriately participate in the activities.

3.2 Implement Learning Activities: Follow the steps outlined in the innovation-based learning process for each lesson plan.

3.3 Data Collection: Collect student performance data on English pronunciation tasks for further analysis.

4. Data Collection and Analysis

4.1 Student Performance: Collect data on the basic word pronunciation tasks from the sample group and analyze the data using descriptive statistics, including mean, standard deviation, and t-test.

4.2 Student Satisfaction: Collect feedback on student satisfaction from the questionnaire and analyze the data using basic statistical methods. Statistical Methods Used

5. The statistical methods used for data analysis include mean, standard deviation, and t-test.

Research Results

Objective 1: To test the effectiveness of English text reading skill practice exercises for Grade 7 students at Choomchonbankai School according to the standard criteria of 70/70, showed that the average score achieved by students during the training was 43.33 out of a possible 60 points, with a standard deviation of 0.93. The effectiveness of the process (E1) was calculated at 72.21, which exceeds the set standard. Additionally, the total score from the post-test was 940 points, with an average score of 23.50 and a standard deviation of 1.20. This indicates that the Grade 7 students at Choomchonbankai School, who participated

in the English pronunciation skill training program, achieved a higher average score after the training compared to before. The effectiveness of the program (E2) was calculated at 78.33, which also exceeds the set standard.

Objective 2: To compare the learning outcomes English text reading before and after using Brain-Based Learning (BBL) for Grade 7 students at Choomchonbankai School, before and after the learning process, showed that the achievement in reading English texts after the learning process had an average score of ($\bar{x}$ = 23.50, S.D. = 1.20), which was higher than the average score before the learning process, which was ($\bar{x}$ = 17.6, S.D. = 1.26). This difference was statistically significant at the 0.05 level.

Objective 3: To examine the satisfaction of Grade 7 students regarding the Brain-Based Learning (BBL) approach showed that the students had a high level of satisfaction with the Brain-Based Learning process. The overall average satisfaction score was ($\bar{x}$ = 4.28, S.D. = 0.57)

Discussion of Research Findings

1) Testing the Effectiveness of the English text reading Practice Skills of Grade 7 Students: The effectiveness of the English pronunciation practice skills for Grade 7 students at Choomchonbankai School exceeded the set standard criteria of 72.21/78.33, with an efficiency score of 72.21 for pretest and 78.33 for posttest. This result suggests that the design of the practice materials was appropriately tailored to the students' level of ability and interests. The content stimulated challenge and enjoyment, which contributed to a more effective learning experience. This finding aligns with the research of Ratchadakan Yaidee (2022), who research on the reading aloud skill development by using phonics exercises of grade 4 students at Bannontarod school, Kamphaengphet province. Her study found an effectiveness score of 80.30/82.00 for the phonics practice method, which is similar to the findings of this study. Additionally, this result is consistent with the research of Wanutchaphorn Puengprom & Kanyarat Cojorn (2018), who researched on the development of learning activity package in English reading comprehension skills based-on brain-based learning approach for Grade 7 students. Their study showed an effectiveness score of 79.51/82.54, indicating that using Brain-Based Learning enhances the learning process. Similarly, Saipraew Chaimatchim (2020) researched the development of scientific learning activities based on brain-based learning concept integrated with inquiry teaching method (5es) on the topic of water for life and air surrounded us of science learning area for Pratomsuksa 3 students. yielding an effectiveness score of 90.16/82.11. These studies demonstrate that Brain-Based Learning, when applied appropriately, can significantly improve the learning process and yield results above the standard thresholds.

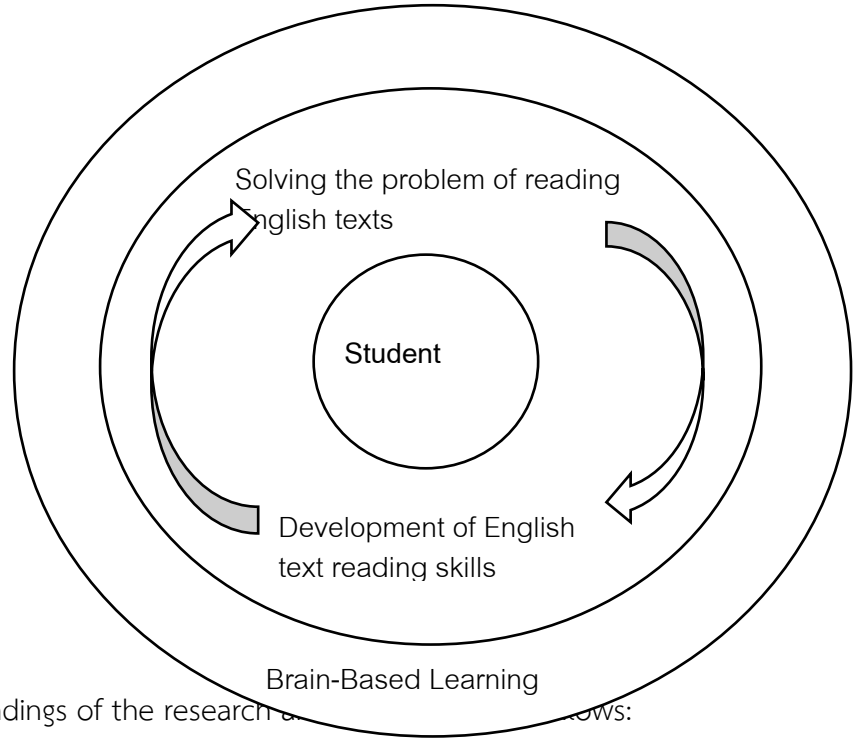
2) Comparison of the English text reading Achievement of Grade 7 Students at Choomchonbankai School: The results showed that the post-test scores for English pronunciation were significantly higher than the pre-test scores at the 0.05 statistical level. This outcome can be attributed to the well-designed activities that aligned with learning theories. The activities encouraged continuous practice and active student participation through various techniques, such as listening and repeating examples, step-by-step pronunciation drills, and clear guidance from the teacher. These strategies contributed to improved student performance. This finding is consistent with Wanutchaphorn Puengprom & Kanyarat Cojorn (2018), who researched on the development of learning activity package in English reading comprehension skills based-on brain-based learning approach for Grade 7 students. Their study found that students' achievement in reading comprehension significantly improved after the intervention. Similarly, Ratchadakan Yaidee (2022) studied the reading aloud skill development by using phonics exercises of grade 4 students at Bannontarod school, Kamphaengphet province. Her study also found significant Improvement in pronunciation scores after the intervention, which supports the effectiveness of structured, theory-based activities for enhancing language skills.

3) Student Satisfaction with Brain-Based Learning (BBL) Approach: The study found that the students' satisfaction with the Brain-Based Learning (BBL) approach was high, with an average score of ($\bar{x}$ = 4.28, S.D. = 0.57). This high level of satisfaction can be attributed to the learning environment created by BBL, which stimulates brain activity and enhances learning through practical, hands-on experiences. The approach encouraged students to apply the knowledge they gained to real-life situations, promoting deeper learning and personal engagement. This result is consistent with Krittayakarn Inphitak (2020), who researched on the development of reading and writing in Thai words of Pratomsuksa 2 students through brain-based learning activities. The study found that the students were highly satisfied with the learning activities, which aligns with the findings in this research. Similarly, Wanutchaphorn Puengprom & Kanyarat Cojorn (2018) studied the development of learning activity package in English reading comprehension skills based-on brain-based learning approach for Grade 7 students. These studies highlight the positive impact of BBL in fostering student satisfaction by focusing on practical, real-world applications of knowledge.

Knowledge management

The research on the development of English text reading skills by using brain-based learning for grade 7 students at Choomchonbankai school. Focuses on addressing challenges in English pronunciation. It aims to improve students' ability to pronounce English texts and enhance their overall English learning outcomes. By implementing the Brain-Based Learning approach, the study seeks to increase academic achievement in English according to the

students' potential. This approach is aligned with a structured learning model, which can be broken down into several stages or components that support the development of reading skills.



Conclusion

The findings of the research a ows:

1) The results of the effectiveness test for the reading skills exercise of English texts for Grade 7 students at Choomchonbankai School, based on the standard of 70/70, showed a score higher than the set standard of 72.21/78.33. This score exceeded the established standard.

2) The results of the study on the reading achievement of English texts using Brain-Based Learning for Grade 7 students at Choomchonbankai School, before and after the learning process, showed that the reading achievement after learning was higher than before learning, with a statistically significant difference at the 0.05 level.

3) The results of the study on the satisfaction of Grade 7 students at Choomchonbankai School towards Brain-Based Learning revealed that the students were highly satisfied with the Brain-Based Learning approach overall, with a mean score of ($\bar{x}$ = 4.28, S.D. = 0.57)

Recommendations

Based on the research results, the researcher provides the following recommendations:

Policy Recommendations:

1) Teachers can apply the innovative learning management approaches in their teaching processes moving forward.

2) Schools can further develop and refine the learning management process and innovative teaching models based on this research.

3) Students show increased interest in learning through the innovative methods of teaching, which could further enhance their engagement.

Recommendations for Applying the Research Results:

1) Teacher training students can use the learning management methods explored in this research to enhance their reading and writing skills.

2) Schools and teachers have access to innovative learning management techniques that can be used to further develop students' capabilities.

3) Teachers can adapt and apply the research methodology in future practices to continuously improve their teaching strategies.

References

Aminoh Tarita. (2018). *Effect of brain-based learning with predict-observe-explain strategy on science achievement, science process skills, and instructional satisfaction of grade 6 students.* (Master Thesis). Songkla: Prince of Songkla University.

Atchima Chaichit. (2020). Developing the skill of reading and pronouncing English words (Phonics) using practice exercises for second-grade students at Srinakharinwirot University. Samut Prakan: Primary Educational Service Area (PESA). (In Thai).

Ekkachai Phuttasorn. (2013). Trends in the enhancement of the 21st century learning skills for adult learners. (Master Thesis). Bangkok : chulalongkorn university. Source: http://cuir.car.chula.ac.th/handle/123456789/42991.

Krittayakarn Inphitak. (2019). *The development of reading and writing in thai words of pratomsuksa 2 students through brain-based learning activities*. (Master Thesis). Mahasarakham : Mahasarakham University

Lalida Thongrat. (2020). *The development of english reading aloud skill through the use of phonics based on the davies instructional model of grade 11 students.* (Master Thesis). Mahasarakham : Rajabhat Mahasarakham University

Ministry of Education (2008). The national curriculum for basic education 2008. Bangkok: The Agricultural Cooperatives of Thailand. Source: http://math.ipst.ac.th/wpcontent/ uploads/2015/ PDF/Course%202551.pdf [in Thai]

Patcharamon Polpraphrut. (2021). *Management of Brain-based Learning Affecting Learning Achievement and Creativity for Primary 4 Students Studying the Concept of Goods and Services in the Economic Learning Area.* (Master Thesis). Chanthaburi: Rambhai Barni Rajabhat University

Pharita Garaparp. (2021). *The development of learning activities based on brain-based learning (BBL) with motion graphic media to enhance reading and spelling of students in Pratom 2.* (Master Thesis). Bangkok : Silpakorn University

Ratchadakan Yaidee. (2022). *The reading aloud skill development by using phonics exercises of grade 4 students at Bannontarod school, Kamphaengphet province.* (Master Thesis). Bangkok: Naresuan University.

Saipraew Chaimatchim. (2020). *The development of scientific learning activities based on brain-based learning concept integrated with inquiry teaching method (5es) on the topic of water for life and air surrounded us of science learning area for Pratomsuksa 3 students.* (Master Thesis). Sakonnakhon: Sakonnakhon Rajabhat University

The National Education Act. (1999). National Education Act B.E. 2542. [Retrieved on May 5, 2024]. Available at https://shorturl.asia/3sE5P

The National Institute of Educational Testing Service (2023). Summary of the National Educational Test (O-NET) results for Grade 9 in the academic year 2023. Retrieved from file:///C:/Users/ASUS/Downloads/onet%202566%20(2).pdfon 12 May 2024.

Wanutchaphorn Puengprom & Kanyarat Cojorn. (2018). *the development of learning activity package in English reading comprehension skills based-on brain-based learning approach for Grade 7 students.* (Master Thesis). Mahasarakham : Mahasarakham University