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

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ABSTRACT

This research article aims to: 1) examine the effectiveness of the English text reading skill exercises for Grade 7 students at Sanpatongsuksa School based on the standard criteria of 70/70; 2) compare the learning outcomes in English text reading of Grade 7 students at Sanpatongsuksa School before and after using the Brain-Based Learning (BBL) approach; and 3) examine the satisfaction of Grade 7 students regarding the implementation of the Brain-Based Learning (BBL) approach. The sample group consisted of Grade 7 students from Sanpatongsuksa School, selected through simple random sampling. The research employed a quasi-experimental design with a single-group pretest-posttest method. The instruments used in the study 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 statistics.

The results revealed that: 1) The effectiveness of the English text reading skill development exercises for Grade 7 students at Sanpatongsuksa School was 73.67/80.33, exceeding the predetermined standard criteria; 2) The comparison of learning achievement in English text reading using brain-based learning showed a statistically significant improvement at the .05 level after the instruction; and 3) The satisfaction of Grade 7 students with Brain-Based Learning (BBL) revealed that the students at Sanpatongsuksa School were highly satisfied with the BBL approach overall. The average satisfaction score was at a high level ($\overline{X}$ = 4.38, S.D. = 0.63).

Keywords: 1. pronunciation; 2. English text; 3. brain-based learning

Introduction

The 21st-century learning skills framework (3R8C) represents foundational competencies crucial for understanding, capability, and adaptability to thrive in the modern era. These skills prepare individuals to face rapid changes, enabling them to become knowledgeable and skilled professionals who are ready to embrace lifelong learning. Without

developing these essential skills, individuals may struggle to keep pace with global advancements and the demands of the labor market. Therefore, the most critical learning skills in the 21st century involve higher-order learning, particularly lifelong learning (Ekkachai Phuttasorn, 2013). This perspective aligns with the National Education Act B.E. 2542 (1999) (amended in B.E. 2565) (National Education Act, 2022), which defines “education” as a process of learning aimed at the personal and societal growth of individuals through the transmission of knowledge, training, cultural preservation, creativity, academic advancement, and the creation of knowledge. This process is achieved by providing an environment conducive to learning, fostering societal engagement, and supporting continuous lifelong learning. As outlined in Sections 22 and 24, the Act emphasizes that all learners are capable of learning and self-development, recognizing the learner as the most important element in the education process. Additionally, the National Basic Education Core Curriculum B.E. 2551 (Ministry of Education, 2008) specifies that by the end of Grade 3, students should be able to pronounce English vocabulary correctly.

Reading refers to the act of conveying the meaning of words or characters written by an author in a way that readers can understand through correct and complete verbalization of words and sentences. It serves as a method to enhance comprehension of the content being read and enables readers to interpret the meaning of sentences by relying on prior knowledge and experience. Observations of students and feedback from mentor teachers during teaching practicums indicate that most students at Sanpatongsuksa School lack proficiency in English pronunciation. Common issues include confusion with certain vowel and consonant sounds, such as /th/ or /v/. A significant challenge for students at Sanpatongsuksa School is their fear of making pronunciation errors and their lack of confidence in speaking English aloud. This is consistent with the results of the national O-NET (Ordinary National Educational Test) assessment for English in Grade 9 for the academic year 2022, which showed an average score of 32.05% (the National Institute of Educational Testing Service, 2022). Similarly, Lalida Thongrat (2020: 3) conducted research on the development of English reading aloud skills through the use of phonics based on the Davies instructional model for grade 11 students. The findings revealed that students faced challenges in accurately pronouncing English vocabulary, which is a fundamental skill for reading and pronunciation. The issues stem from a lack of basic knowledge about the phonetic system of letters, including vowels and consonants, leading to difficulties in decoding, incorrect pronunciation, and a lack of confidence in reading. This hindered students' ability to memorize vocabulary, communicate effectively, and engage in learning English. Likewise, Atchima Chaichit (2020: 1) researched on developing the skill of reading and pronouncing English words (phonics) using practice exercises for second-grade students at Srinakharinwirot University and found that their English performance was below average. Students lacked skills in decoding and relied on rote memorization of individual words, often

accompanied by Thai transliteration. As a result, they struggled to pronounce unfamiliar words and displayed low engagement and achievement in English language learning. Further research by Ratchadakan Yaidee (2022: 2) on the reading aloud skill development by using phonics exercises of grade 4 students at Bannontarod school, Kamphaengphet province, also highlighted similar challenges. The primary issue was that students could recognize spoken vocabulary and understand its meaning but could not read or pronounce the corresponding written words. During reading aloud activities in class, students often felt anxious and underperformed, which contributed to lower scores in reading skills compared to other skills. Without addressing these challenges, students' struggles with English pronunciation may negatively affect their performance in higher levels of English education.

Brain-Based Learning (BBL) is an instructional approach that utilizes the brain's structure and function as a tool for effective learning. It does not inhibit the brain's natural operations but instead promotes its optimal performance. The fundamental premise of BBL is that everyone has the capacity to learn, and every individual is born with a brain ready for learning. This concept aligns with Pharita Garaprap (2021: 117), 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 a learner-centered approach. It acknowledges the differences in brain structure and functioning among individuals. Teachers should support and guide students toward age-appropriate learning by integrating diverse instructional strategies and preparing students adequately before the learning process begins. Similarly, Patcharamon Polpraphrut (2022: 19) researched on management of brain-based learning affecting learning achievement and creativity for primary4 students studying the concept of goods and services in the economic learning area described brain-based learning as an approach where learners develop various skills through instructional designs that consider the natural workings of each student's brain. This method encourages hands-on experiences, effectively fostering students' potential. Aminoh Tarita (2016: 19) 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 also highlighted that brain-based learning involves designing instructional activities informed by knowledge of how the brain functions according to students' developmental stages. This approach includes selecting appropriate learning materials and creating an environment conducive to learning, thereby maximizing students' potential.

Therefore, the researcher was interested in studying the development of English text reading skills by using brain-based learning for grade 7 students at Sanpatongsuksa School. This study integrated innovative instructional approaches to create a more effective and engaging classroom learning environment. The Brain-Based Learning approach involves five key steps: 1) Brain Preparation: Stimulating interest to connect with new knowledge. 2) New

Knowledge Acquisition: Introducing new concepts and information. 3) Understanding: Presenting information that supports the connection between prior knowledge and new concepts. 4) Memory Retention: Facilitating understanding to enable learners to retain the information. 5) Integration: Applying the acquired knowledge to new situations. These steps aim to enhance English vocabulary pronunciation skills, enabling students to use their knowledge to address learning challenges effectively. By employing this method, the researcher sought to improve students' skills, aligning with desirable attributes and fostering a high-quality learning experience.

Objectives

1) To examine the effectiveness of the English text reading skill exercises for Grade 7 students at Sanpatongsuksa School based on the standard criteria of 70/70.

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

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

Research Methodology

This study employs a quasi-experimental research design using a one-group pretest-posttest method to assess the effectiveness of the intervention.

1. Scope of the Research

1.1 Population and Experimental Group

The population consists of Grade 7-9 students at Sanpatongsuksa School, Yuwa Sub-district, Sanpatong District, Chiang Mai Province, under the jurisdiction of the National Office of Buddhism, Chiang Mai Educational Service Area, during the first semester of the academic year, totaling 25 students. The experimental group includes 10 of Grade 7 students from Sanpatongsuksa School. This group was selected through purposive sampling due to the school's affiliation as a network institution and its permission to conduct research within this classroom.

1.2 Content The study focuses on the Foreign Language Learning Area as outlined in the Basic Education Core Curriculum B.E. 2551. The specific content area is Strand 1: English for Communication, with a learning standard of Standard F1.1, Grade 7 Students will read aloud short texts, stories, and poems correctly based on reading principles. The subject of the study is reading aloud English texts.

1.3 Duration The study was conducted during the first semester of the 2024 academic year, from June to September 2024. Data collection and instructional sessions were scheduled for one class period (1 hour) per week for 6 weeks, totaling 6 hours.

1.4 Variables Independent Variables: 1) Brain-Based Learning (BBL) lesson plans. 2) Student satisfaction questionnaire. Dependent Variables: 1) Learning outcomes in English text reading. 2) Student satisfaction with the Brain-Based Learning approach.

2. Development and Validation of Research Instruments

The research utilized three sets of instruments: 1) Brain-Based Learning Lesson Plans: The plans were evaluated for effectiveness, with a mean score of 3.66. 2) Pretest and Posttest: These tests were designed to assess learning outcomes, with an overall reliability score of 0.53. 3) Student Satisfaction Questionnaire: A 5-point Likert scale was used to measure student satisfaction with the Brain-Based Learning approach. The questionnaire achieved an average score of 4.23.

3. Research Implementation Procedures

3.1 Orientation Students were given an orientation to ensure they understood the objectives, preparation, and participation requirements for the learning activities. This step aimed to prepare students to engage appropriately and effectively in the activities.

3.2 Conducting Learning Activities The researcher implemented the learning activities following the steps of the Brain-Based Learning (BBL) approach. Key activities in each lesson plan were summarized and executed systematically.

3. Data Collection The researcher collected data through students' performance scores on worksheets that focused on English text reading. These scores were used for further analysis.

4. Data Collection and Analysis

4.1 Collecting and Analyzing English text reading Performance

The reading performance scores of all students in the experimental group were collected and analyzed using basic statistical methods, including: Mean (average) Standard deviation Paired t-test to compare pretest and posttest scores.

4.2 Collecting and Analyzing Student Opinions Student opinions were gathered through questionnaires about their perceptions of the Brain-Based Learning approach. These responses were analyzed using basic statistics to summarize the level of satisfaction.

5. Statistical Methods Used

The following statistical methods were employed: 1) Mean (average). 2) Standard deviation. 3) Paired t-test to evaluate the effectiveness of the intervention by comparing pretest and posttest scores.

Research Results

Objective 1: To examine the effectiveness of the English text reading skill exercises for Grade 7 students at Sanpatongsuksa School based on the standard criteria of 70/70. The results are as follows: 1) During-Learning Performance: The students achieved an average

score of 44.20 out of a maximum of 60 points. The standard deviation was 2.49. The process effectiveness (E1) was calculated to be 73.67, exceeding the 70% standard criterion. 2) Post-Learning Performance: The total post-test score was 241 points, with an average score of 24.10. The standard deviation was 2.77. The product effectiveness (E2) was found to be 80.33, also surpassing the standard criterion. These findings indicate that Grade 7 students at Sanpatongsuksa School, who were taught using the English reading aloud skills training module, achieved higher average post-test scores compared to pre-test scores. Additionally, the effectiveness of the training module exceeded the established benchmarks.

Objective 2: To compare the learning outcomes in English text reading of Grade 7 students at Sanpatongsuksa School before and after using the Brain-Based Learning (BBL) approach show the following: Post-Learning Achievement: Average score ($\overline{X}$ = 24.10, S.D. = 2.77) Pre-Learning Achievement: Average score ($\overline{X}$ = 22.60, S.D. = 2.59) The difference between pre- and post-learning scores is statistically significant at the 0.05 level This indicates that Brain-Based Learning significantly improves students' achievement in reading aloud English texts.

Objective 3: To examine the satisfaction of Grade 7 students regarding the implementation of the Brain-Based Learning (BBL) approach reveal Overall Satisfaction: Average score ($\overline{X}$ = 4.38, S.D. = 0.63). This demonstrates that students were highly satisfied with the Brain-Based Learning approach, with an overall satisfaction level classified as "high."

Discussion of Research Results

1. The effectiveness of the English text reading skill exercises for Grade 7 students at Sanpatongsuksa School exceeded the set standard of 72.21/78.33 This achievement can be attributed to the well-designed exercises that aligned with the lesson content, which effectively stimulated students' interest, challenge, and enjoyment in learning. This result aligns with previous studies: Ratchadakan Yaidee (2022: 36) on the reading aloud skill development by using phonics exercises of grade 4 students at Bannontarod school, Kamphaengphet province found that phonics-based reading practice exercises significantly enhanced English reading aloud skills among Grade 4 students at Ban Non Ta Rod School in Kamphaeng Phet Province, with an efficiency score of 80.30/82.00, surpassing the standard of 80/80. Wanutchaphorn Puengprom and Kanyarat Cojorn. (2018: 102) researched on the development of learning activity package in English reading comprehension skills based-on brain based learning approach for Mattayomsueksa 1 students, achieving an efficiency score of 79.51/82.54. Saipraew Chaimatchim (2020: 125) studied on 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. The activities achieved an efficiency score of 90.16/82.11,

significantly higher than the set standard. These consistent findings underscore the impact of well-structured, engaging activities on improving student performance and achieving higher-than-expected learning outcomes. Future studies could explore the long-term retention of reading skills developed through these exercises and investigate their applicability in other educational levels or contexts.

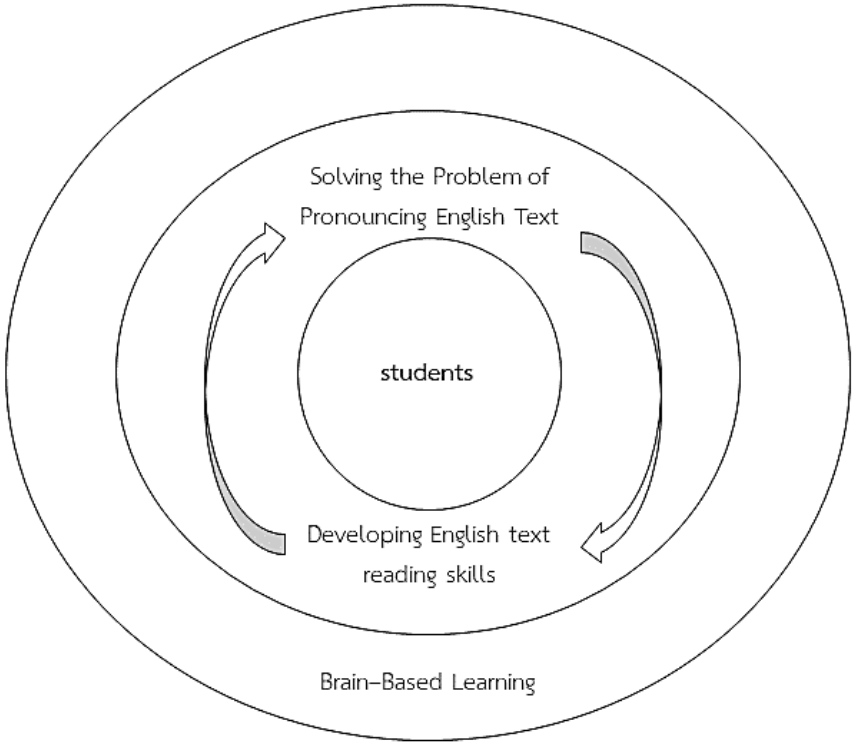
2. Comparison of learning outcomes in English text reading of Grade 7 students at Sanpatongsuksa School was significantly higher than the pre-learning achievement at the .05 significance level. This improvement demonstrates the effectiveness of Brain-Based Learning (BBL) in enhancing students' reading aloud skills by aligning teaching strategies with the natural learning processes of the brain. This finding aligns with previous research: Wanutchaphorn Puengprom and Kanyarat Cojorn. (2018: 104) studied on the development of learning activity package in English reading comprehension skills based-on brain based learning approach for Mattayomsueksa 1 students and found that post-learning achievement scores were significantly higher than pre-learning scores at the .05 significance level. Ratchadakan Yaidee (2022: 36) investigated on the reading aloud skill development by using phonics exercises of grade 4 students at Bannontarod school, Kamphaengphet province. The study showed that post-learning scores for English vocabulary pronunciation were significantly higher than pre-learning scores at the .05 significance level. Atchima Chaichit (2020: 19) focused on developing the skill of reading and pronouncing English words (phonics) using practice exercises for second-grade students at Srinakharinwirot University. The study demonstrated a significant improvement in post-learning scores, with students achieving an average score of 4.05 out of 5 points (81%), compared to a pre-learning average of 1.25 out of 5 points (25%), with a significant difference of 2.80 points. Key Takeaways The consistent improvement in post-learning achievement highlights the effectiveness of structured, targeted learning activities that integrate BBL principles and phonics exercises. These approaches cater to the developmental needs and learning styles of students, resulting in measurable gains in English reading skills. Recommendations Future studies could explore integrating BBL with other innovative methodologies, such as project-based learning or digital learning tools, to further enhance students' language acquisition and retention. Additionally, longitudinal studies could investigate the long-term impact of such interventions on reading fluency and comprehension.

3. Student's satisfaction of Grade 7 students regarding the implementation of the Brain-Based Learning (BBL) approach: The study revealed that Grade 7 students at Sanpatongsuksa School expressed a high level of satisfaction with Brain-Based Learning (BBL), as reflected in the mean score of 4.38 (S.D. = 0.63). This positive response is attributed to the BBL approach's focus on creating a stimulating learning environment that aligns with how the brain naturally functions. Key elements of this approach include hands-on activities and the application of knowledge to real-life situations, which enhance engagement and

motivation. This finding aligns with the following studies: Rattanaporn Khongyuang (2022:89) who researched on Development of Thai language learning activities with brain - based learning management on types of words for prathom 6 students. The study found a high level of satisfaction among students, with a mean score of 4.25 (S.D. = 0.16). Wanutchaphorn Puengprom and Kanyarat Cojorn. (2018: 106) researched on the development of learning activity package in English reading comprehension skills based-on brain based learning approach for Mattayomsueksa 1 students. Their findings showed that students' satisfaction with the activities was also at a high level. Pharita Garaprap (2021 : 117) explored 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. The study found that students reported high satisfaction in terms of content, design of motion graphic media, and overall benefits received. Key Factors Contributing to High Satisfaction 1) Engaging Learning Environment The interactive and hands-on nature of BBL activities fosters active participation. 2) Relevance to Real Life Students can apply what they learn, making the content meaningful and practical. 3) Customized Learning Tools Incorporating multimedia and interactive tools enhances the learning experience. Recommendations Future implementations of BBL could benefit from integrating digital learning tools, gamification, or collaborative projects to further enhance student satisfaction and engagement. Moreover, qualitative feedback from students could provide deeper insights into specific aspects they find most enjoyable or beneficial, guiding future curriculum improvements.

New Knowledge

Research on the development of English text reading skills by using brain-based learning for grade 7 students at Sanpatongsuksa School. This research focuses on addressing the challenges of English text reading skills among Grade 7 students at Sanpatongsuksa School. The study aims to enhance students' ability to read English texts aloud through the application of Brain-Based Learning (BBL) strategies. The approach is designed to maximize students' potential and improve their English learning outcomes. The following model of the Brain-Based Learning process is implemented to achieve these objectives.



Conclusion

The research findings are summarized as follows:

1. The results of the effectiveness of the English text reading skill development exercises for Grade 7 students at Sanpatongsuksa School, based on the 70/70 standard criteria, revealed that the performance exceeded the set standard. The obtained values were 73.67/80.33, which are higher than the established benchmark.

1.2 The study on the learning achievement in English text reading using brain-based learning Grade 7 students at Sanpatongsuksa School revealed that the post-learning achievement was significantly higher than the pre-learning achievement. The difference was statistically significant at the .05 level.

1.3 The study on the satisfaction of Grade 7 students with Brain-Based Learning (BBL) revealed that the students at Sanpatongsuksa School were highly satisfied with the BBL approach overall. The average satisfaction score was at a high level ($\overline{X}$ = 4.38, S.D. = 0.63).

2. Recommendations

Policy Recommendations

1. Teachers can adopt the innovative learning management approach for use in their teaching practices.

2. Schools can utilize the processes and prototype innovations of the learning management approach for further development.

3. Students demonstrate increased interest in learning through the use of innovative learning management methods.

Recommendations for Practical Application

1. Teacher trainees can apply the learning management methods to develop reading and writing skills.

2. Schools and teachers can utilize the innovative learning management approach to further enhance student development.

3. Teachers can adapt this research model for future studies.

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