

THE DEVELOPMENT OF ENGLISH PRONUNCIATION AND SPELLING SKILL BY USING BRAIN-BASED LEARNING OF GRADE 3 STUDENTS AT BANDONGDUM SCHOOL

1. Kanyarat Khirikanokkhiao*, 2. Nopparat Kantapikul, 3. Sangad Chienjuntuk

1., 2., 3. Mahamakut Buddhist University Lanna Campus

*Corresponding Arthor E-mail: Khiri2544@gmail.com

Abstract

This research aims to: 1) test the effectiveness of the English pronunciation and spelling skill practice test of Grade 3 students at Bandongdum School according to the 70/70 standard, 2) compare the achievement in English pronunciation and spelling before and after learning using the brain-based learning management approach for Grade 3 students at Bandongdum School, and 3) investigate the satisfaction of Grade 3 students with the brain-based learning management approach. The experimental group consists of Grade 3 students at Bandongdum School, selected through simple random sampling. This research adopts a quasi-experimental design using a single experimental group to measure pre- and post-test results. The research tools include a lesson plan, pre- and post-tests, and a student satisfaction questionnaire. The data were analyzed using basic statistical methods, including mean, standard deviation, percentage, and t-test.

The research findings are as follows: 1) The results of the English pronunciation and spelling skill practice test of grade 3 students at Bandongdum school were 72.86/76.19, which was higher than the specified standard. 2) The English pronunciation and spelling achievement using brain-based learning management after studying was significantly higher than before studying at the .05 level. 3) The students' satisfaction with brain-based learning management was at the highest level.

Keywords: English Pronunciation, Spelling skill, brain-based learning management

Introduction

The 21st Century Learning Skills (3R8C) include reading skills, which enable students to communicate, learn, and express satisfaction. This aligns with the National Education Act B.E. 2542 (1999), which states that "education" refers to the creation and advancement of academic progress, learning, and factors that support individuals to learn continuously

throughout life. This is consistent with Section 22, which emphasizes that education must be based on the principle that every learner has the ability to learn and develop themselves, and that learners are of the utmost importance. The educational process must promote learners' development according to their nature and full potential. This is also in line with the Ministry of Education (2008: 39), which specifies that by the end of third grade, students should be able to tell details and main ideas, ask and answer questions, as well as express their thoughts, problems, and needs.

English pronunciation and spelling refer to the process in which learners use their understanding of the sounds of English consonants and vowels, and the relationship between sounds and letters in English, to pronounce English vocabulary correctly according to English pronunciation rules. This includes understanding the position of letters in words, the placement of sounds in words, the syllables of words, the word stress, and the phonetic blending of words, while considering other relevant factors. Observations from teachers and interviews with mentors regarding teaching practices at Bandongdum School revealed that Grade 3 students were unable to pronounce and spell English words correctly according to standard English pronunciation principles. This issue was primarily due to a lack of foundational knowledge and principles related to English spelling, preventing the students from accurately reading and pronouncing English words. This observation is consistent with the results of the 2022 National Educational Testing (O-NET) for English language proficiency at the sixth-grade level, which showed an average score of 37.62% (National Institute of Educational Testing Service, 2022). Additionally, research by Atchima Chaichit (2020) on development of English pronunciation and spelling skills (Phonics) using skill practice for 2nd-grade students at Wat Saothong Nok School, Bang Sao Thong District, Samut Prakan found that students had low English learning outcomes due to a lack of spelling and pronunciation skills. Furthermore, Pattiya Kaewket and Peangpen Jirachai (2023) conducted a study on the development of electronic book to improve oral reading and spelling ability in Thai language subject for grade 2 students at Naluang school. They found that students' reading ability was below the 60% threshold set by the school. Similarly, research by Anchalee Wongkanha and Team (2022) on development of English word reading and spelling skills for early primary school students revealed that many students struggled with reading words correctly and relied on memorization, which led to various problems in their learning progress.

Brain-based learning management refers to the application of knowledge about the brain and the natural processes of learning to design learning processes, including the management of activities, environmental settings, and the use of learning materials. It is an integrated approach that combines various skills and knowledge, making learning engaging and facilitating understanding, retention, and long-term memory. This approach also ensures that learners can apply what they have learned appropriately in real-life situations. According to Pornpilai Lertvicha & Akkarapoom Jaruphakorn. (2007), brain-based learning refers to the

design of teaching and learning processes based on how the brain works, considering factors that stimulate brain changes, such as the development of neural networks, as well as assessment methods that reflect these changes and the skills of learners. This aligns with the Learning Science Institute (2008), which defines brain-based learning as learning management that utilizes the understanding of brain function. When understood, this knowledge leads to the design of learning processes, such as organizing learning activities, managing the environment, and designing instructional media and methods that encourage children to be interested in and easily understand what they are learning. Furthermore, Anchalee Fuengchuchat (2009) states that brain-based learning involves using knowledge of brain functions as a tool for designing learning processes and other related processes to maximize human learning potential. It is believed that the golden period for learning is from birth to 10 years old.

Therefore, the researcher is interested in the development of English pronunciation and spelling skill by using brain-based learning of grade 3 students at Bandongdum school. The researcher aims to apply an innovative learning management approach to enhance the effectiveness of English pronunciation and spelling skills. Brain-based learning management consists of five steps: 1) Brain preparation, 2) Providing new knowledge, 3) Gaining a detailed understanding, 4) Memorizing the learned information, and 5) Integrating prior knowledge with new knowledge. This approach aims to develop language skills for communication, solve learners' problems, and improve their English pronunciation and spelling abilities. It is also designed to align with the desired characteristics for learners' development.

Objectives

- 1) To test the effectiveness of the English pronunciation and spelling skill practice test of Grade 3 students at Bandongdum School according to the 70/70 standard.
- 2) To compare the achievement in English pronunciation and spelling before and after learning using the brain-based learning management approach for Grade 3 students at Bandongdum School.
- 3) To investigate the satisfaction of Grade 3 students with the brain-based learning management approach.

Research Methodology

This research follows a quasi-experimental design (Quasi-experimental research) using a single experimental group with pretest and posttest measurements (One group Pretest-Posttest Design).

1. Scope of the Research

1.1 Population and Experimental Group: The population consists of Grade 3 students at Bandongdum School, located in Hod District, Chiang Mai Province, under the

Chiang Mai Primary Educational Service Area Office 5, during the first semester of the 2024 academic year. There are 7 students in total. The experimental group comprises these same Grade 3 students, consisting of 2 male students and 5 female students, selected through simple random sampling. The school was chosen due to its affiliation with a network of schools and its permission to conduct the research.

1.2. Content Area: The content for this study is based on the English language learning outcomes specified in the 2008 Basic Education Core Curriculum, under the Foreign Language Learning Area, specifically the sub-area 1: Language for Communication. The learning indicator for Grade 3 students (indicator 3/2) focuses on reading pronunciation, spelling, reading word groups, sentences, and simple rhythmic dialogues correctly according to English pronunciation principles. The topic is English pronunciation and spelling.

1.3. Duration: The research will be conducted during the first semester of the 2024 academic year, from June to September 2024, lasting for 6 weeks. The study will be conducted once a week, with each session lasting 1 hour. The pretest and posttest will each be conducted over 6 sessions in total.

1.4. Variables Studied: Independent Variables: The brain-based learning management plan. The student satisfaction questionnaire. Dependent Variables: The achievement in English pronunciation and spelling. The level of satisfaction among Grade 3 students with the brain-based learning management approach

2. Development and Quality Verification of Research Tools

The research tools used in this study consist of 3 sets: 1) Brain-Based Learning Management Plan The effectiveness of the learning management plan is 3.50. 2) Pretest and Posttest The reliability of the pretest and posttest is 0.71. 3) Student Satisfaction Questionnaire The questionnaire evaluates students' satisfaction with the learning management approach using a 5-point Likert scale, with an average score of 4.31.

3. Research Implementation Steps

3.1 Orientation for Students: An orientation session will be conducted to ensure that students understand the learning activities, the objectives of the study, the preparation required, and the correct procedures for participating in the activities.

3.2 Implementation of Learning Activities: The learning activities will be conducted following the steps outlined in the innovation plan. The key activities of each learning management plan will be summarized.

3.3 Data Collection: The researcher will collect data from student work scores, specifically focusing on English pronunciation and spelling, in order to analyze the data further for subsequent analysis.

4. Data Collection and Data Analysis

4.1 Collect the scores from both the pre-test and post-test of all students in the sample group, then analyze to calculate the process efficiency (E1) and outcome efficiency (E2) using statistical methods.

4.2 Collect the scores from the English pronunciation and spelling performance of all students in the sample group, then analyze using basic statistics, including mean, standard deviation, percentage, and t-test.

4.3 Collect the levels of student satisfaction from the feedback questionnaire regarding their learning, then analyze using basic statistics, expressed as percentages.

5. Statistics Used in the Research

The statistics used in the research include mean, standard deviation, percentage, and t-test.

Research Findings

Objective 1: To test the effectiveness of the English pronunciation and spelling skill practice test of Grade 3 students at Bandongdum School according to the 70/70 standard, revealed the following: The average score from the practice during the course was 42.71 out of a total of 60, with a standard deviation of 1.07. The process efficiency (E1) was 72.86, which is above the established standard. The total post-test score was 160, with an average score of 22.86 and a standard deviation of 2.27. These results indicate that grade 3 students at Bandongdum school who learned using the English pronunciation and spelling practice skills had a higher average score after the course than before the course, and the efficiency of the English pronunciation and spelling practice skills (E2) was 76.19, which is higher than the established standard.

Objective 2: To compare the achievement in English pronunciation and spelling before and after learning using the brain-based learning management approach for Grade 3 students at Bandongdum School showed that the achievement in English pronunciation and spelling after the course had an average score and standard deviation of $\bar{x} = 22.86$, S.D. = 2.27, which was higher than before the course, with an average score and standard deviation of $\bar{x} = 17.57$, S.D. = 2.88. The difference was statistically significant at the .05 level.

Objective 3: To investigate the satisfaction of Grade 3 students with the brain-based learning management approach expressed a high level of satisfaction with the Brain-Based Learning approach, with an overall average score of ($\bar{x} = 4.65$, S.D. = 0.50).

Discussion of Research Findings

1. The test results of the effectiveness of the English pronunciation and spelling skill practice test of Grade 3 students at Bandongdum School were higher than the established standard, with a score of 72.86/76.19. This result suggests that the practice skills in English pronunciation and spelling were appropriately aligned with the content and at the highest

level. As a result, students experienced challenges in completing the exercises and enjoyed the learning activities. This finding is consistent with the research by Prasit Phaiyklin (2018) on The development of English reading skill and English writing spell base by using a set of practice of English learning by foreign language department (English) case study: stand for the fifth grades students at wat Mongkhonrat school. The study found that the reading and spelling practice exercises had an effectiveness of 88.60/86.83. Similarly, the research by Nattanan Jantasok, Warangkana Tesana (2021) on Improving Reading and Spelling Skills of Prathomsuksa 6 Students by Using Exercises with Brain-Based Learning (BBL) found an effectiveness score of 82.07/80.86, which was higher than the established standard.

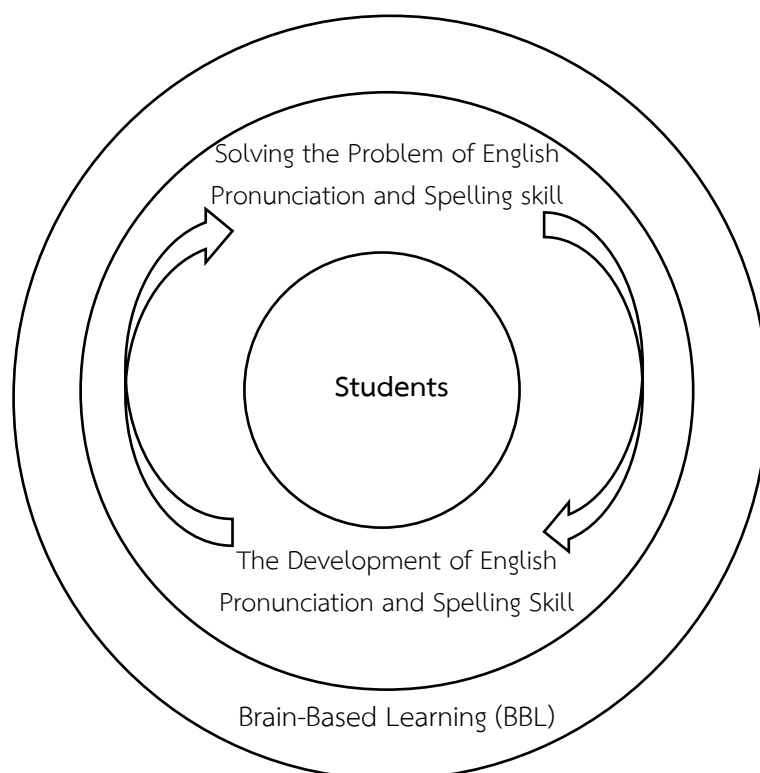
2. The comparison of the achievement in English pronunciation and spelling before and after learning using the brain-based learning management approach for Grade 3 students at Bandongdum School showed that the average score after the course was significantly higher than before the course at the .05 level. This improvement is due to the appropriate design of the learning process, which aligns with learning theories and emphasizes continuous practice and student engagement. The students participated in various techniques, including listening, speaking, reading, and writing based on examples, step-by-step pronunciation practice, and clear guidance from the teacher. This finding is consistent with the research by Chueamlak Chanmee (2018), who studied development of basic reading and writing skills in the Foreign Language (English) subject for 5th-grade students at Ban Phetlakorn School using skill practice. The study found that students who learned using reading and spelling practice exercises showed statistically significant improvement in their post-test results at the .01 level. Similarly, the research by Prakrit Tuanthong & Sudakan Patmadilok (2021) on development of English teaching activities using Brain-Based Learning for basic grammar for 5th-grade students found that the students' achievement in English after the course was significantly higher than before the course at the .05 level.

3. The study of the satisfaction of Grade 3 students with the brain-based learning management approach showed that the students had a high level of satisfaction with the overall learning process, with an average score and standard deviation at the highest level ($\bar{x} = 4.65$, S.D. = 0.50). This is because students were satisfied with the teaching and learning activities and demonstrated improved reading and spelling skills after learning to read, spell, speak, and use vocabulary through practice exercises. This finding is consistent with the research by Pharita Garaparp (2021), who studied 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' satisfaction in terms of content, motion graphic media design, and the benefits received was at a high level, with an average score of (\bar{x} = 2.61, S.D. = 0.03). Similarly, the research by Nattanan Jantasok, Warangkana Tesana (2021: 105-106) on Improving Reading and Spelling Skills of Prathomsuksa 6 Students by Using Exercises with Brain-Based Learning (BBL) found that the students were highly satisfied with the learning activities for reading and spelling, with an average score of (\bar{x} = 4.61, S.D. = 0.30).

New Knowledge Gained from the Research

The research on the development of English pronunciation and spelling skill by using brain-based learning of grade 3 students at Bandungdum school aimed to address issues related to English pronunciation and spelling skills. The focus was on developing students' abilities in reading and spelling English words, which could then be used to solve learning challenges and help improve students' skills, ensuring their quality. This approach is in line with the desired characteristics and satisfaction of students regarding the Brain-Based Learning activities, which were rated at the highest level. The researcher has outlined the conceptual framework for the study in the following diagram.



Conclusion

The research findings can be summarized as follows:

1) The results of the English spelling skill practice test of Grade 3 students at Bandongdum school according to the standard criteria of 70/70 were found to be higher than the standard criteria of 72.86/76.19, which is higher than the set standard criteria.

2) The results of the study of the English spelling achievement using brain-based learning management of Grade 3 students at Bandongdum school before and after studying found that the English spelling achievement after studying was higher than before studying and had a statistically significant difference at the .05 level.

3) The results of the study of the satisfaction of Grade 3 students with brain-based learning management found that Grade 3 students at Bandongdum school were satisfied with brain-based learning management overall with a high mean value (\bar{x} = 4.65, S.D. = 0.50).

Recommendations

Policy Recommendations

1. Teachers can apply the innovative learning management methods to further improve teaching and learning.
2. Schools can use the processes and innovative learning models as a foundation for further development.
3. Students show increased interest in learning through the use of innovative learning management methods.

Recommendations for Utilizing Research Findings

1. Teacher education students can adapt these learning management methods to develop reading and writing skills.
2. Schools and teachers can continue to use innovative learning management methods to further develop students.
3. Teachers can apply the research design for future use.

References

- Anchalee Fuengchuchat (2009). Promoting Thai writing skills through brain-based learning for Prathom Suksa 4 students, The Prince Royal's College, Chiang Mai Province. Chiang Mai, Graduate School, Chiang Mai University. [Master's thesis]. Chiang Mai: Chiang Mai University. <https://cmudc.library.cmu.ac.th/frontend/Info/item/dc:112817>
- Anchalee Wongkanha & Team. (2022). Development of English word reading and spelling skills for early primary school students. *Journal of Corporate Management and Local Innovation*, Vol. 8, Issue 11 (November 2022), pp. 271.
- Atchima Chaichit. (2020). Development of English pronunciation and spelling skills (Phonics) using skill practice for 2nd-grade students at Wat Sathong Nok School, Bang Sao

- Thong District, Samut Prakan. Samut Prakan Educational Service Area 2 [Research Report].
- Chueamlak Chanmee. (2018). Development of basic reading and writing skills in the Foreign Language (English) subject for 5th-grade students at Ban Phetlakorn School using skill practice. Phetchabun Educational Service Area 3 [Research Report].
- Ministry of Education. (1999). National Education Act B.E. 2542. [Retrieved June 30, 2021]. Available at <https://shorturl.asia/3sE5P>
- Ministry of Education. (2008). Basic Core Curriculum B.E. 2551. Bangkok: Agricultural Cooperatives of Thailand.
- Nattanan Jantasok, Warangkana Tesana. (2021). Improving Reading and Spelling Skills of Prathomsuksa 6 Students by Using Exercises with Brain-Based Learning (BBL). Journal of the Institute for Human Resource Development, Eastern Region, Mahasarakham University, Vol. 1, Issue 2 (May-August 2021), pp. 105–106.
- Pattiya Kaewket and Peangpen Jirachai. (2023). The Development of Electronic Book to Improve Oral Reading and Spelling Ability in Thai Language Subject for Grade 2 Students at Naluang School. Ratchathipak Journal, Vol. 17, Issue 52 (May-June 2023), pp. 144–145.
- 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's thesis]. Silpakorn University.
- Pornpilai Lertvicha & Akkarapoom Jaruphakorn. (2007). Designing Learning Processes by Understanding the Brain. Bangkok: Dan Sutthakan Printing Co., Ltd.
- Prakit Tuanthong & Sudakan Patmadilok. (2021). Development of English teaching activities using Brain-Based Learning for basic grammar for 5th-grade students. Journal of Buddhist Education and Research (JBER), Vol. 7, Issue 3 (September-December 2021), pp. 264–267.
- Prasit Phaiyklin. (2018). The development of English reading skill and English writing spell base by using a set of practice of English learning by foreign language department (English) case study: stand for the fifth grades students at wat Mongkhonrat school. Mahachulalongkornrajavidyalaya University Journal, Vol. 7, Issue 9 (September 2020), pp. 155–157.