



The Development of English Reading Skills Using Blended Learning for 21st Century Learners

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Abstract

Background and Aims: This study aimed to develop English reading skills using blended learning for 21st-century learners. The research analyzed the results of the O-NET (Ordinary National Educational Test) English reading comprehension test for Grade 9 students to identify problematic areas and determine appropriate methods for improving reading skills. The research process consisted of the following steps: (1) identifying issues in English reading comprehension, (2) developing instructional materials, including in-class lessons and supplementary online learning resources in the form of video clips for self-study, (3) comparing students' reading proficiency before and after using the instructional materials, and (4) evaluating students' satisfaction with the lessons. The findings from this study contribute to the enhancement of English reading instruction by integrating blended learning approaches, ultimately fostering more effective and engaging learning experiences for students.

Methodology: This research employed a developmental and experimental design with 30 Grade 9 students from Rajaprajanugroh 47 School, Phetchaburi Province, selected through systematic random sampling. The research instruments included a teacher interview form, a questionnaire on problems and needs, a pre-test and post-test, blended learning activities, and a student satisfaction evaluation form. Data analysis was conducted using means, standard deviations, and a dependent t-test.

Results: The most significant reading difficulties among the sample group were vocabulary inference, identifying main ideas, and interpretation. After participating in the blended learning activities, the students' scores significantly improved ($p < 0.01$), with the mean score increasing from 7.73 to 18.77 out of 30. Additionally, the overall satisfaction assessment was at a high level (mean score = 4.37/5), with the highest satisfaction reported for the instructional media used in the blended learning approach.

Conclusion: The blended learning activities effectively enhanced English reading skills, providing students with continuous learning opportunities through technology. Additionally, teachers can integrate blended learning activities into classroom instruction by adapting the content to suit learners' proficiency levels.

Keywords: Reading Skills; Blended Learning; 21st Century Learner





Introduction

The COVID-19 pandemic has disrupted development in various sectors, including the economy, society, politics, and, most notably, education. The decline in education quality has resulted from school closures and the shift to online learning. Parents, students, and teachers have faced challenges in adapting to new teaching and learning methods. Additionally, reduced household income and limited access to education in remote areas have further exacerbated educational inequality. These factors have led to a stagnation in human capital development. Kotirum (2008) emphasized that human resources are the most critical asset in an era of global competition. Therefore, there is an urgent need to develop a new generation with international competencies to elevate the country to a global standard. This requires proactive educational management and the preparation of students with essential 21st-century skills.

According to three essential learning skills for 21st-century students: (1) learning and innovation skills, (2) information, media, and technology skills, and (3) life and career skills. These competencies can be cultivated through diverse teaching and learning approaches, which are widely implemented today to ensure students achieve their learning goals while aligning with 21st-century skill development (Panich, 2012). Furthermore, Sharma et al (2007) introduced Blended Learning, which integrates technology with traditional classroom instruction. This approach enhances conventional teaching methods by incorporating in-person classroom activities and digital learning tools.

Another key factor in national development at the global level is English language proficiency, encompassing listening, speaking, writing, and reading skills (Baker et al, 2008). Among these, reading is considered the foundational skill essential for academic and professional growth. English reading proficiency is crucial for personal development and academic research, as most scholarly publications are in English. Reading is also essential for Thai professionals across various industries and particularly for students learning English as a Second Language (ESL) or English as a Foreign Language (EFL), as most textbooks and educational resources are published in English. Therefore, reading serves as the foundation for higher education, enabling access to textbooks and other academic materials. To enhance English language instruction, effective assessment and evaluation methods are necessary to refine and improve reading activities for optimal student learning outcomes. The Ordinary National Educational Test (O-NET) serves as a key indicator of both institutional and student performance. The National Institute of Educational Testing Service (Public Organization) states that O-NET measures the knowledge and cognitive abilities of students in Grades 6, 9, and 12 based on the Basic Education Core Curriculum B.E. 2551 (A.D. 2008) to inform strategies for enhancing education quality.





An interview with English language teachers at Rajaprajanugroh 47 School, Cha-Am District, Phetchaburi Province, revealed that most students at the school come from underprivileged backgrounds, including Karen ethnic students and those for whom English is a third language. These students have limited exposure to English, which hinders their proficiency. Specifically, Grade 9 students, who must take the national O-NET examination, generally score below the national average due to their insufficient reading skills and limited vocabulary knowledge. NIETS statistics further confirm this issue, as presented in the following table, which compares the average O-NET English scores for Grade 9 students nationwide, within special education schools, and at Rajaprajanugroh 47 School from 2021 to 2023.

Table 1 Comparison of Basic Statistics on O-NET English Scores for Grade 9 Students (2021–2023)

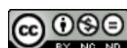
Academic Year	National Average (\bar{X})	Special Education Bureau (\bar{X})	Rajaprajanugroh 47 School (\bar{X})
2021	31.10	27.82	26.62
2022	32.05	27.51	28.05
2023	31.76	27.82	26.62

Source: National Institute of Educational Testing Service (NIETS), Basic Statistical Data on O-NET Results for Grade 9 English by National, Affiliation, and School Levels (2021–2023).

Given these findings, this study aims to enhance the English reading skills of Grade 9 students at Rajaprajanugroh 47 School, under the administration of the Special Education Bureau (SEB). Strengthening students' reading proficiency is a crucial and urgent issue, as it can expand their opportunities for higher education and contribute to their ability to develop their local communities in the future.

Objectives

1. To study the problems and needs in developing English reading skills among Grade 9 students at Rajaprajanugroh 47 School, Cha-am District, Phetchaburi Province.
2. To compare the students' English reading skills before and after participating in blended learning activities.
3. To evaluate the satisfaction of Grade 9 students at Rajaprajanugroh 47 School regarding the blended learning approach for enhancing English reading skills.





Literature Review

1. Blended Learning

Blended Learning is an approach that combines traditional classroom learning with digital or online learning. Its goal is to enhance learning efficiency and meet the diverse needs of learners. The significance of this approach lies in its ability to provide learners with flexible access to content, increase opportunities for interactive learning, and promote self-directed learning. The key components of Blended Learning include technology as a supporting tool, flexible teaching methods, and support from educators.

There are various models of Blended Learning, such as the Rotational Model (rotating learning methods), Flex Model (flexible learning), Self-Blend Model (self-directed additional learning), and Enriched Virtual Model (enhanced virtual learning). The design of Blended Learning must consider course objectives, suitable technology, and assessment strategies aligned with learning methods. The role of educators is to facilitate, support, and encourage critical thinking among learners, while learners must take responsibility for their learning.

Theories related to Blended Learning include Constructivism (knowledge construction theory), Behaviorism (behaviorist theory), Connectivism (networked knowledge theory), and Cognitive Load Theory (cognitive load theory), all of which help guide the design of effective learning experiences. The benefits of Blended Learning include expanded learning opportunities, personalized learning experiences, technology skill development, and increased engagement between learners and educators.

Blended Learning is an educational approach that integrates the strengths of traditional learning with technology-based learning to enhance learning effectiveness and flexibility. Implementing this approach requires careful design to suit learners and educational contexts. When applied appropriately, Blended Learning creates high-quality learning experiences that cater to the needs of digital-age learners.

2. Learning Management for 21st-Century Learners

Learning management for 21st-century learners is an educational approach that responds to changes in technology, society, and the economy. It emphasizes developing learners' abilities in critical thinking, problem-solving, and lifelong learning. Key factors in effective learning management include educational technology, curriculum design aligned with global contexts, and the creation of learning environments that promote collaboration and essential skill development.

The essential skills for 21st-century learning consist of 3R (Reading, Writing, Arithmetic) and 4C (Critical Thinking, Communication, Collaboration, Creativity), fundamental skills that help learners adapt and succeed in a rapidly changing world. The role of teachers has shifted





from being knowledge transmitters to facilitators who encourage critical thinking and act as mentors in the learning process. Additionally, teachers must enhance their skills in technology, communication, and motivation to support students effectively. English language teaching in the 21st century focuses on effective communication through technology and practical learning that connects with real-world contexts. Common teaching approaches include Communicative Language Teaching (CLT) and Task-Based Learning (TBL), which help learners develop language skills in authentic situations. Furthermore, online platforms enable continuous practice and learning.

Learning management for 21st-century learners aims to develop essential skills through modern technology and innovative learning design. Both learners and teachers must adapt to the demands of the contemporary world by focusing on critical thinking, communication, and collaboration. English language learning should also be modernized and aligned with global contexts to better prepare students for the future.

3. Reading Skill

Reading is the process of understanding and interpreting written texts, which is a crucial skill that enables learners to access information, acquire knowledge, and develop analytical thinking. Theories related to reading include the Bottom-Up Theory, which focuses on decoding letters and words; the Top-Down Theory, which emphasizes the reader's prior knowledge and experience; and the Interactive Theory, which integrates both approaches to enhance reading efficiency.

Various strategies can be employed to develop reading skills, such as Scanning, which helps locate specific information; Skimming, which captures key ideas; Critical Reading, which enables learners to evaluate and interpret information deeply; and Purposeful Reading, which encourages reading with a clear objective and questioning throughout the process.

In the 21st century, reading instruction must be adapted to technological advancements and digital learning. Blended Learning enhances reading skill development by incorporating diverse and effective approaches, such as using online resources alongside classroom instruction, utilizing reading development applications, and creating interactive activities that promote discussion and knowledge sharing.

Reading is an essential skill that must be continuously developed through appropriate concepts, theories, and strategies. Reading instruction in the 21st century should integrate technology and blended learning approaches to help learners enhance their reading abilities effectively and apply them in real-life situations.



Conceptual Framework

The researcher has studied and explored information based on concepts and theories related to teaching reading skills, principles of blended learning, and has analyzed and applied the acquired knowledge as a framework for imparting knowledge on developing English reading skills using blended learning for 21st-century learners.

The conceptual framework for the research is as follows:

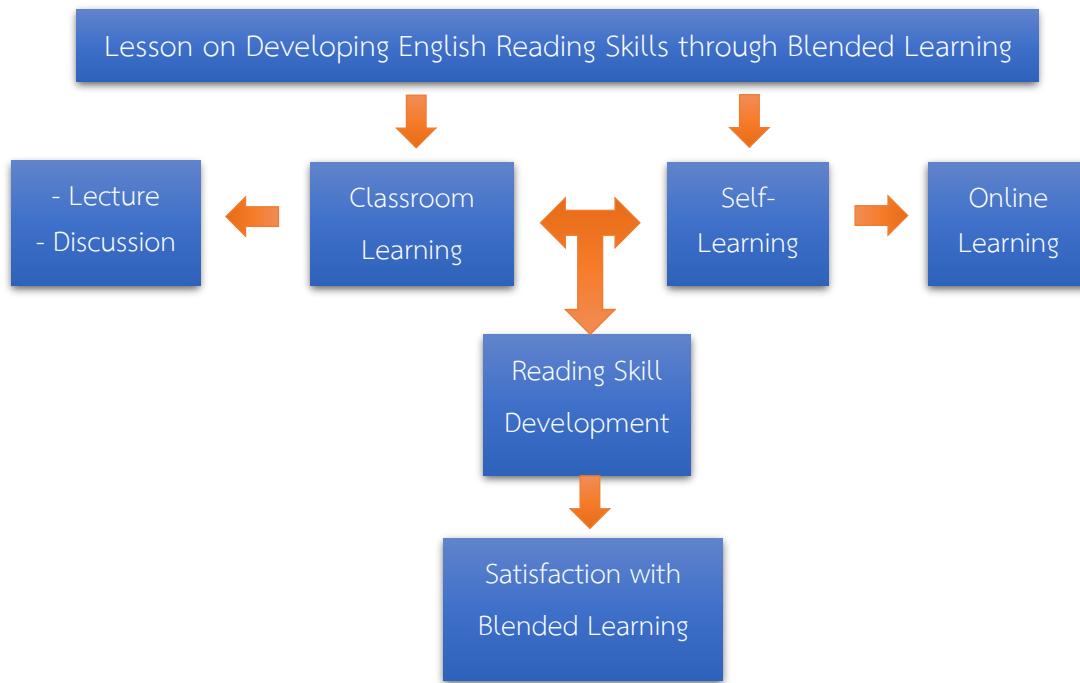


Figure 1 Conceptual Framework

Methodology

1. Sample Size and Randomization

In this study, the sample size was determined to be 30 Grade 9 students, selected systematically from the target population at Rajaprajanugroh 47 School in Cha-am District, Phetchaburi Province. The use of systematic random sampling ensures that participant selection is conducted in a structured and unbiased manner, reducing potential selection bias and increasing the representativeness of the sample.

The inclusion criteria focus specifically on Grade 9 students currently enrolled at the school, ensuring relevance to the study's objective of evaluating Blended Learning's effectiveness in reading skills development. Exclusion of students who do not meet these criteria further enhances the study's internal validity by maintaining a homogeneous sample group aligned with the research purpose. The chosen sample size of 30 aligns with common educational research practices, allowing for a manageable yet statistically meaningful analysis of both qualitative and



quantitative data. Given the action research design, this sample size is appropriate for identifying patterns, assessing intervention effectiveness, and drawing preliminary conclusions on the impact of Blended Learning on reading skills improvement.

By integrating systematic random sampling, this study upholds methodological rigor, supporting the reliability and generalizability of findings within the given educational context.

2. Research Tools

The research employs multiple data collection tools to assess the effectiveness of Blended Learning in developing English reading skills among Grade 9 students. These tools include:

1) An Interview Form: Designed for teachers regarding the teaching and learning of English reading skills for Grade 9 students.

2) A Questionnaire: Used to collect data on problems and needs for developing English reading skills among Grade 9 students.

3) Pre-Test and Post-Test: Administered to assess the effectiveness of blended learning in developing English reading skills for Grade 9 students.

4) Blended Learning Activities: Developed to enhance English reading skills, incorporating three types of learning materials:

- English reading textbook with QR codes
- Online reading lessons with exercises, accessible via QR codes
- Blended learning lesson plans

5) Satisfaction Survey: Developed to evaluate students' opinions on blended learning for English reading skills development.

These tools ensure a comprehensive data collection process, integrating both qualitative and quantitative approaches for an in-depth analysis of students' learning experiences.

3. Quality Values

This study ensures high research quality through rigorous validation and reliability checks of its research instruments and methodology. Several key quality values are embedded in the study design to enhance the credibility and accuracy of the findings:

1) Content Validity

The research instruments, including the questionnaire, interview form, and pre-test/post-test, were reviewed by three experts to ensure alignment with research objectives. The Index of Item-Objective Congruence (IOC) was calculated to validate each item's relevance and clarity. Revisions were made based on expert feedback, strengthening the accuracy of the measurement tools.

2) Reliability and Consistency





To ensure data consistency, the research employed a systematic random sampling technique, reducing selection bias and improving the generalizability of findings. The pre-test and post-test design allowed for a controlled assessment of students' reading skill development, minimizing errors in measurement. Additionally, a pilot test was conducted to refine the research instruments before full implementation.

3) Internal Validity

The study follows a structured data collection process, beginning with a literature review and an analysis of the Ordinary National Educational Test (O-NET) framework. The pre-test and post-test comparison allows for a reliable measurement of students' progress in English reading skills. By integrating Blended Learning activities with systematic assessment methods, the study ensures that improvements in reading skills can be attributed to the intervention rather than external factors.

4) External Validity

The findings from this study apply to similar educational settings where Blended Learning is being implemented. The research framework, including QR code-integrated learning materials, online reading exercises, and structured lesson plans, provides a scalable model for enhancing reading skills in other Grade 9 student populations.

5) Triangulation and Data Integrity

Multiple sources of data, including teacher interviews, student questionnaires, and satisfaction surveys, were analyzed using Thematic Analysis for qualitative insights. Additionally, quantitative data were evaluated using statistical methods such as t-tests and mean and standard deviation calculations to ensure robust and unbiased conclusions.

By incorporating expert validation, systematic sampling, structured intervention, and statistical analysis, this research maintains strong methodological rigor. The study's findings contribute valuable insights into the effectiveness of Blended Learning in enhancing English reading skills, supporting its potential application in wider educational contexts.

Results

Objective 1: To study the problems and needs in developing English reading skills among Grade 9 students at Rajaprajanugroh 47 School, Cha-am District, Phetchaburi Province.



**Table 2** Mean and Standard Deviation of Problems in Reading English

Problems in Reading English	Mean	S.D.	Quality Level
Unable to guess the meaning of vocabulary from reading text	4.67	.48	Very High
Unable to grasp the main idea from the content	4.67	.49	Very High
Unable to interpret the story	4.51	.69	Very High
Do not know the meaning of the vocabulary	4.43	.62	High
Do not feel interested in the content	4.43	.62	High
Unable to refer to words specified in the text	4.43	.62	High
Do not know reading techniques	4.33	.61	High
Do not have basic knowledge about the subject	4.30	.70	High
Unable to understand due to the difficult language level	4.27	.74	High
Unable to identify the topic of the text	4.03	.89	High
Overall	4.41	.20	High

From Table 2, it is found that the respondents have a high level of problems in reading English overall (Mean = 4.41, S.D. = .20). When considering individual items, it is found that the highest problems are: unable to guess the meaning of vocabulary from reading the text (Mean = 4.67, S.D. = .48), unable to grasp the main idea from the content read (Mean = 4.67, S.D. = .49), and unable to interpret the story read (Mean = 4.51, S.D. = .69) respectively. The researcher has used this data to develop integrated learning activities to improve the English reading skills of Grade 9 students, addressing the identified issues clearly.

Table 3 Mean and Standard Deviation of the Needs for Developing English Reading Skills

Needs for Developing English Reading Skills	Mean	S.D.	Quality Level
Guessing word meaning	4.73	.45	Very High
Reading for main ideas	4.60	.62	Very High
Using references	4.57	.62	Very High
Making inferences	4.51	.57	Very High
Using background knowledge	4.43	.50	High
Reading for details	4.33	.80	High
Predicting events in the story	4.23	.82	High
Finding the supporting details	4.20	.85	High
Connecting different parts of the story	4.13	.68	High
Identify the topic of the text	4.03	.72	High





Needs for Developing English Reading Skills	Mean	S.D.	Quality Level
Overall	4.38	.22	High

From Table 3, it is found that respondents have a high level of need for developing English reading skills overall (Mean = 4.38, S.D. = .22). When considering individual items, it is found that the highest needs are: guessing word meaning (Mean = 4.73, S.D. = .45), reading for main ideas (Mean = 4.60, S.D. = .62), and using references (Mean = 4.57, S.D. = .62) respectively. The researcher has used this data to develop integrated learning activities to improve the English reading skills of Grade 9 students, aiming to enhance the efficiency of reading skills development to the highest level.

Based on this information, it can be concluded that the problems and needs in developing reading skills among Grade 9 students at Rajaprajanugroh 47 School are closely related. Students struggling with reading require appropriate support through effective learning approaches, particularly in inferring vocabulary meanings and identifying main ideas. These foundational skills are essential for improving English reading proficiency and can be applied to more advanced levels of learning in the future.

Objective 2: To compare the students' English reading skills before and after participating in blended learning activities.

Table 4 Mean, Standard Deviation, and t-values of Pretest-Posttest Scores of Integrated Learning Activities to Improve English Reading Skills for Grade 9 Students at Rajaprajanugroh 47 School, Cha-am District, Phetchaburi Province

Test	Number of students	Number of Questions	Mean	S.D.	t	p
Pretest	30	30	7.73	1.41	-35.27	.000
Posttest	30	30	18.77	2.03		

From Table 4, the analysis results of the difference in the abilities of Grade 9 students at Rajaprajanugroh 47 School, Cha-am District, Phetchaburi Province, before and after the integrated learning activities to improve English reading skills overall, show that the abilities of Grade 9 students at Rajaprajanugroh 47 School, Cha-am District, Phetchaburi Province, are significantly different at the .01 level.





Comparison of Analysis Results by Specific Reading Strategy of the Pretest-Posttest Integrated Learning Activities to Improve English Reading Skills of Grade 9 Students at Rajaprajanugroh 47 School, Cha-am District, Phetchaburi Province

Table 5 Mean, Standard Deviation, and t-values of Pretest-Posttest Scores of Integrated Learning Activities to Improve the English Reading Skills of Grade 9 Students at Rajaprajanugroh 47 School, Cha-am District, Phetchaburi Province, by Specific Reading Strategy

Reading Strategy	Mean	S.D.	t	p
1. Guessing Word Meaning				
Pre-test	7.25	1.58	-12.84	.000
Posttest	19.00	2.73		
2. Using References				
Pre-test	7.80	1.48	-14.23	.000
Posttest	19.40	2.30		
3. Reading for Details				
Pre-test	8.60	1.14	-15.67	.000
Posttest	19.00	1.87		
4. Reading for Main Ideas				
Pre-test	8.00	1.41	-12.45	.000
Posttest	17.60	2.07		
5. Making Inferences				
Pre-test	7.50	1.73	-11.89	.000
Posttest	19.50	1.00		
6. Using background knowledge				
Pre-test	5.50	14.33	-16.52	.000
Posttest	13.50	9.04		

From Table 5, the analysis results of the difference in the abilities of Grade 9 students at Rajaprajanugroh 47 School, Cha-am District, Phetchaburi Province, before and after the integrated learning activities to improve English reading skills by specific reading strategy, show that the abilities of Grade 9 students at Rajaprajanugroh 47 School, Cha-am District, Phetchaburi Province, are significantly different at the .01 level for all specific reading strategies.

Objective 3: To evaluate the satisfaction of Grade 9 students at Rajaprajanugroh 47 School regarding the blended learning approach for enhancing English reading skills.

Analysis of Satisfaction with Integrated Learning Activities to Improve English Reading Skills of Grade 9 Students at Rajaprajanugroh 47 School, Cha-am District, Phetchaburi Province





Table 6 Mean and Standard Deviation of Satisfaction of Grade 9 Students at Rajaprajanugroh 47 School, Cha-am District, Phetchaburi Province, with Integrated Learning Activities to Improve English Reading Skills Overall

Topics	Mean	S.D.	Satisfaction Level	Rank
1. Teaching Methods	4.32	.17	High	3
2. Content	4.35	.03	High	2
3. Media for Blended Learning	4.45	.10	High	1
Overall	4.37	.06	High	

From Table 6, it is found that the respondents have a high level of satisfaction with the integrated learning activities to improve English reading skills overall (Mean = 4.37, S.D. = .06). When considering individual items, it is found that the highest mean is for media for integrated learning (Mean = 4.45, S.D. = .10), followed by content (Mean = 4.35, S.D. = .03), and teaching methods (Mean = 4.32, S.D. = .17) respectively.

Table 7 Mean and Standard Deviation of Satisfaction of Grade 9 Students at Rajaprajanugroh 47 School, Cha-am District, Phetchaburi Province, with Integrated Learning Activities to Improve English Reading Skills in Terms of Teaching Methods

Topics	Mean	S.D.	Satisfaction Level	Rank
Teaching from simple to complex	4.57	.62	Very High	1
Teaching vocabulary helps to understand the text better	4.37	.89	High	2
The teaching period is appropriate	4.27	.83	High	3
Teaching includes explanations and Summaries with student participation	4.20	.81	High	4
Introduction to the lesson helps connect to the content of the text	4.17	.87	High	5
Overall	4.32	.17	High	

From Table 7, it is found that the respondents have a high level of satisfaction with the integrated learning activities to improve English reading skills in terms of teaching methods overall (Mean = 4.32, S.D. = .17). When considering individual items, it is found that the highest mean is for teaching from simple to complex (Mean = 4.57, S.D. = .62), followed by teaching vocabulary





helps to understand the text better (Mean = 4.37, S.D. = .89), and the appropriateness of teaching duration (Mean = 4.27, S.D. = .83).

Table 8 Mean and Standard Deviation of Satisfaction of Grade 9 Students at Rajaprajanugroh 47 School, Cha-am District, Phetchaburi Province, with Integrated Learning Activities to Improve English Reading Skills in Terms of Content

Topics	Mean	S.D.	Satisfaction Level	Rank
Content and exercises are consistent and help improve English reading skills	4.40	.81	High	1
The content in the readings helps to motivate	4.37	.77	High	2
English reading	4.37	.72	High	2
Text and images help enhance understanding of the reading content	4.33	.75	High	4
The content in the readings is interesting	4.30	.79	High	5
Language level in the readings is appropriate for the students' grade level				
Overall	4.35	.03	High	

From Table 8, it is found that the respondents have a high level of satisfaction with the integrated learning activities to improve English reading skills in terms of content overall (Mean = 4.35, S.D. = .03). When considering individual items, it is found that the highest mean is for content and exercises being consistent and helping to improve English reading skills (Mean = 4.40, S.D. = .81), followed by content in the readings helps to motivate English reading (Mean = 4.37, S.D. = .77), and text and images help enhance understanding of the reading content (Mean = 4.37, S.D. = .72).

Table 9 Mean and Standard Deviation of Satisfaction of Grade 9 Students at Rajaprajanugroh 47 School, Cha-am District, Phetchaburi Province, with Integrated Learning Activities to Improve English Reading Skills in Terms of Media for Blended Learning

Topics	Mean	S.D.	Satisfaction Level	Rank
The media helps to understand content better	4.55	.72	Very High	1
The media helps to improve reading skills	4.50	.69	High	2
Media is interesting and can attract learners	4.43	.68	High	3
	4.43	.62	High	3





Topics	Mean	S.D.	Satisfaction Level	Rank
The duration of practice with the media is appropriate	4.33	.71	High	5
Media is clear, concise, and comprehensive				
Overall	4.45	.10	High	

From Table 9, it is found that the respondents have a high level of satisfaction with the blended learning activities to improve English reading skills in terms of media for integrated learning overall (Mean = 4.45, S.D. = .10). When considering individual items, it is found that the highest mean is for media helping to understand content better (Mean = 4.55, S.D. = .72), followed by media helping to improve reading skills (Mean = 4.50, S.D. = .69), and media being interesting and able to attract learners (Mean = 4.43, S.D. = .68), equal to the appropriateness of the duration of practice with media (Mean = 4.43, S.D. = .62).

Conclusion

In conclusion, this research highlights the significant role of blended learning in developing English reading skills among secondary school students. This approach effectively addresses students' issues, enhances reading abilities, and is well-received by learners, indicating that blended learning can be an effective method for improving English reading skills and fostering engaging learning experiences. Moreover, the findings support the use of technology in language teaching and encourage educators to adopt blended learning approaches to enhance students' reading skills and language proficiency.

Discussion

Problems and Needs in Developing Students' English Reading Skills

English reading skills are a crucial factor contributing to students' success in learning the language. However, the study found that the main problems in reading were identifying the main ideas and interpreting the content. A key factor obstructing comprehension was students' inability to infer word meanings from context. This finding aligns with the ability to infer word meanings from context is essential for enhancing reading comprehension. However, students with a limited vocabulary or a lack of strategies for guessing word meanings often struggle to understand complex content. This issue may stem from students' restricted vocabulary, which directly affects their ability to read and comprehend English texts.





Additionally, Schmitt (2008) emphasized that deep vocabulary knowledge, particularly the ability to infer meanings from context, serves as a fundamental skill that enables students to read and understand complex texts more effectively. This insight corresponds with the study by Duke & Pearson (2002), which highlighted that continuous practice of reading strategies can significantly enhance students' reading efficiency and comprehension.

Nation (2022) also stated that vocabulary knowledge is a fundamental component of reading comprehension. If students have a limited vocabulary, they are more likely to face difficulties in understanding content. Moreover, the research by Kim & Petscher (2023) indicated that students who can infer word meanings from context tend to exhibit stronger reading and comprehension skills. These findings reinforce the importance of developing this ability in students.

An effective approach to addressing students' reading difficulties is to promote reading strategies that emphasize vocabulary inference, identifying main ideas, and using references for comprehension. This is in line with the perspectives of Graham (2022) and Sim & Ismail (2023), who suggested that analytical reading techniques—such as learning through digital media and engaging in interactive activities—can enhance reading skills and improve the effectiveness of learning.

Based on the aforementioned issues, there should be diverse learning approaches to develop English reading skills. One effective approach is Blended Learning, which combines traditional teaching methods with digital technology to increase opportunities for skill practice. Graham (2022), similar to Zhang et al. (2024), pointed out that learning through media that allows unlimited analytical thinking and interaction helps enhance understanding and interpretation of content at any time. This aligns with the blended learning approach developed by the researcher, which includes classroom lessons with an instructor and online lessons that can be self-studied at any time.

English Reading Skills and Blended Learning Management

The English reading skills of Grade 9 students at Rajaprajanugroh 47 School, Cha-am District, Phetchaburi Province, were significantly higher after participating in the blended learning activities to develop English reading skills than before the activities. This reflects that the characteristics of blended learning activities can promote the development of English reading skills in terms of content, images, and exercises. This aligns with the statement by Bunson (2020: 77) that blended learning activities are a form of learning that encourages students to be enthusiastic. The learning activities are flexible and utilize online media, thus responding to individual differences among students. Additionally, blended learning also addresses individual differences among students in





terms of learning, interest, and abilities, as stated by Kaewmat & Onthani (2022: 188). Similarly, Ramalingam et al (2022) mentioned that learning systems integrating technology should be a focus of future education.

The results are consistent with the research of Graham (2022), reflecting that blended learning helps bridge the gap between traditional teaching and digital technology, resulting in increased student engagement and the development of the skills desired by educators. Furthermore, Imsombat and Lenanan (2019: 65) emphasized that 21st-century learning activities focus on students learning to become skilled individuals, emphasizing practical activities using diverse media. Similarly, the research by Pragasam and Sulaiman (2023) highlighted the use of digital platforms in English reading skill development activities, such as vocabulary learning and main idea identification exercises, which significantly improve learning efficiency and reduce reading difficulties.

When considering specific aspects:

1) Guessing Word Meaning: It was found that students' scores in this area increased significantly after participating in the blended learning activities to develop English reading skills. This demonstrates that knowledge of context clues helps improve the ability to understand word meanings without always having to consult a dictionary. This also leads to more diverse reading material comprehension. This aligns with Nation (2022), who stated that guessing word meanings from context is a fundamental strategy for reading development. Training students to guess word meanings from various situations helps build confidence and the ability to apply vocabulary in other contexts.

2) Using References: After participating in the blended learning activities, students' scores in this area significantly increased. This reflects that understanding the relationships between words or sentences in the text helps improve comprehension. Halliday & Hasan (2022) mentioned that readers must connect the meanings of referenced words or sentences with prior information. The ability to find references is a key skill that helps readers fully understand the content.

3) Reading for Details: Students' scores in this area were higher after participating in the blended learning activities. This shows that for EFL learners, finding specific information is crucial for understanding the text. The quicker students can locate necessary or specific information, the less time they will spend on tests. Similarly, Yang (2023) emphasized that using digital technology to practice finding specific information helps students focus more easily, as these media can create engaging activities.

4) Reading for Main Ideas: Students' scores in this area increased after participating in blended learning activities. This indicates that blended learning activities focusing on analytical reading and class discussions help significantly improve the ability to identify main ideas. Nuttal





(2023) noted that teaching reading strategies along with group discussions helps enhance memory and understanding of main ideas in texts.

5) Making Inferences: Students' scores in this area increased after participating in blended learning activities. This shows an improvement in analytical and interpretive skills from using media in blended learning activities that train students to analyze surrounding words or sentences to find implied meaning, leading to better content interpretation. Fateman & Saman (2021) stated that interactive activities involving analytical thinking stimulate deep learning and improve content interpretation.

6) Using Background Knowledge: Students' scores in this area increased significantly after participating in blended learning activities. This indicates the development of students' reading skills, as this skill requires students to connect prior knowledge or personal experiences to help analyze the content they read. As Yang (2023) concluded from research, students with background knowledge about the content they read can better grasp the main ideas and create connections within the text compared to those without any background knowledge.

Based on the overall increased scores and in each specific aspect of students after participating in blended learning activities to develop English reading skills, it indicates that students have shown improvement in their English reading skills both in-depth and comprehensively.

Student Satisfaction with Blended Learning for English Reading Skills Development

Blended learning, which combines face-to-face instruction with digital resources, is increasingly recognized as a method that enhances learning engagement and comprehension. Research has shown that incorporating multimedia elements can significantly improve reading skills by providing interactive and personalized learning experiences (Lutfiani et al., 2024). The high satisfaction with learning media in this study supports Mayer's (2021) Multimedia Learning Theory, which posits that combining visual and textual content enhances cognitive processing and facilitates deeper comprehension. This finding suggests that digital tools played a vital role in increasing students' understanding of reading materials and maintaining their engagement.

Regarding teaching methods, students expressed the highest satisfaction with lessons that followed a structured sequence from simple to complex, vocabulary instruction that aided reading comprehension, and appropriately timed lessons. These findings align with Vygotsky's (1978) Zone of Proximal Development (ZPD) theory, which emphasizes the importance of scaffolding to progressively develop learners' abilities. Recent studies support this perspective, indicating that systematic and gradual instruction enhances language acquisition and reading





comprehension (Yang, 2012). The emphasis on vocabulary instruction further aligns with research by Nation (2022), which highlights vocabulary as a crucial component in reading proficiency.

For content, the findings reveal that students found the reading materials and exercises well-aligned, contributing to improved reading skills. Additionally, engaging reading materials enhanced motivation, and visual aids supported comprehension. This result supports the work of Suzanne et al. (2020), who emphasized that motivation plays a crucial role in reading success. The use of visual aids also aligns with Dual Coding Theory (Clark & Paivio, 1991), which suggests that integrating verbal and non-verbal information strengthens cognitive processing and enhances retention.

In terms of learning media, students reported that digital tools helped them better understand content, improve reading skills, and sustain engagement. This aligns with research by Bersamin et al. (2024), which indicates that blended learning environments provide learners with flexibility and interactive experiences that enhance language learning outcomes. The students' satisfaction with the duration of practice using digital resources corresponds with findings that self-paced learning significantly improves reading comprehension and learner autonomy (Arvanitis, 2019).

Recommendation

Based on the research findings, the following recommendations are proposed to enhance the implementation of blended learning in English reading instruction. These recommendations focus on broader implementation, teacher development, expanding opportunities for students, and future research directions.

1. Expanding the Implementation of Blended Learning

To maximize the benefits of blended learning, its application should be extended beyond the studied group. This can be achieved by implementing blended learning strategies in other grade levels and subjects. Doing so would allow for a more comprehensive understanding of its adaptability and effectiveness across various educational contexts. Research has shown that blended learning can be successfully adapted to different subjects, fostering engagement and improving student outcomes. Additionally, collaboration among schools to share best practices and resources could further enhance the effectiveness of this learning approach.

2. Teacher Development and Professional Training

A key factor in the success of blended learning is the ability of teachers to effectively integrate technology into their instruction. Therefore, professional development programs should be conducted to equip teachers with essential digital literacy skills, instructional design strategies, and gamification principles. Training workshops should focus on practical applications, such as





creating interactive learning materials, using AI-powered tools, and implementing chatbot-assisted reading exercises. Studies indicate that teachers who receive adequate training in technology-enhanced instruction are more likely to implement innovative teaching methods effectively.

3. Expanding Opportunities for Equitable Access

The successful implementation of blended learning requires adequate digital infrastructure and access to technology. Schools, especially in underprivileged areas, should be provided with the necessary resources, including computers, tablets, and internet connectivity, to ensure that all students have equal access to digital learning opportunities. Policymakers and educational institutions should work together to bridge the digital divide and promote digital inclusion. Research suggests that addressing digital disparities can significantly improve students' academic performance and engagement in online learning environments.

4. Future Research Directions

To further enhance the effectiveness of blended learning in English reading instruction, future studies should explore the following areas:

- Longitudinal Impact: Investigate the long-term effects of blended learning on students' reading comprehension, motivation, and language proficiency.
- Comparative Studies: Compare the effectiveness of blended learning with other instructional approaches, such as fully online learning, face-to-face instruction, and AI-assisted learning.
- Personalized Learning Pathways: Examine how AI-powered tools, chatbots, and adaptive learning platforms can personalize reading instruction based on individual student needs.
- Gamification Strategies: Analyze the impact of different gamification techniques, such as rewards, leaderboards, and interactive storytelling, on reading motivation and retention.

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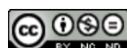
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