



Enhancing Eleventh Graders' Reading Skills through Content-Based Instruction Using Multimodal Texts: A Mixed-Methods Study

Istikomah¹, Achmad Yudi Wahyudin²

^{1,2}Faculty of Arts and Education, English Education, Universitas Teknokrat Indonesia,
Bandar Lampung, Lampung

Corresponding: istiikmhh@gmail.com

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Abstract

In this study, eleventh-grade students at SMAN 14 Bandar Lampung's reading comprehension skills are improved through the use of Quiz.com and multimodal texts to promote Content-Based Instruction (CBI). Utilizing a mixed-methods methodology, the research integrated both qualitative and quantitative techniques to present a thorough analysis of the intervention. Thirty-one pupils answered a 15-item Likert-scale survey to gauge their impressions, motivation, and engagement, and they took part in a pre- and post-test to gauge their reading comprehension. In the quantitative findings, the mean score increased from 83.41 in the pre-test to 95.74 in the post-test, indicating a considerable improvement. The paired samples t-test verified that the change was statistically significant ($p < .05$). Additionally, the standard deviation dropped from 16.38 to 4.97, indicating that students' performance stabilized following the intervention. All five components of reading comprehension—main concept identification, supporting detail recognition, contextual vocabulary knowledge, inference-making, and text structure analysis—showed growth in the students. These conclusions were corroborated by the questionnaire results, which showed high internal consistency with a Cronbach's Alpha of .936. Responses were largely positive, according to content analysis, with mean ratings ranging from 3.81 to 4.58. Quiz.com's engaging, entertaining, and inspiring aspects were especially appreciated by students, and multimodal texts were acknowledged for giving reading greater significance and relevance to everyday situations. Nevertheless, several students pointed out that multimodal texts did not totally eliminate monotony, indicating the necessity for a variety of teaching methods. Overall, the results show that understanding, motivation, and confidence in EFL classes may be successfully increased by including CBI, multimodal resources, and digital technologies.

Keywords: *Content Based Instruction 1; Multimodal Text 2; Quiz.com 3; Reading Comprehension 4*

Introduction

Teaching English is a complex process that involves developing various language skills, including reading, which is essential for language acquisition. Pang et al. (2003:6) assert that reading proficiency is a crucial educational objective. Reading is one of the four English language skills that students should master since it allows them to understand any new information that is presented in printed and written English. To properly comprehend and evaluate written materials, students need to master the essential ability of reading comprehension skills. It is widely accepted that reading is an interactive, cognitive activity in which readers decode written symbols and combine them with previously acquired information to create meaning. Understanding, analyzing, and critically assessing the information contained in a text are just as important as word recognition. In this context, reading is a cognitive activity that entails the reader actively interacting with the text to create meaning, going beyond just decoding symbols.

The use of printed texts has historically been related to reading comprehension, the quick advancement of technology has broadened the range of texts that learners come across on a regular basis. Beyond traditional print, the concept of text now refers to a range of communication mediums that combine written language with visuals, music, colour, and design. These writings are referred to as multimodal texts since they need to use many semiotic resources at once in order to make sense. Reading in the 21st century is no longer only about print literacy since students today evaluate and assimilate information using a combination of linguistic, visual, aural, and spatial factors. Therefore, it is crucial to develop multimodal literacy in order to equip students to critically interact with a variety of communication mediums in both digital and non-digital situations.

In order to create and communicate meaning, a multimodal text combines two or more modes of communication, such as spoken or written language, visual components (color, layout, typography, images), audio elements (music, sound effects), gestural elements (body language, facial expression), and spatial design (text and image arrangement). These modes interact with one another in multimodal texts to enhance understanding, hold readers' attention, and offer several ways to interpret the same information. These texts are crucial tools for fostering literacy in modern contexts since they are frequently found in print and performance-based media, as well as digital spaces like blogs, websites, social media postings, and infographics.

According to Haggerty and Mitchell (2010), including these many modalities actively improves communication and learning rather than just adding variation to the text. Because it gives students more chances to create and communicate meaning using a variety of interrelated semiotic resources, this viewpoint emphasizes the

value of multimodality in educational contexts. Furthermore, according to Walsh (2010), multimodal literacy is a process of meaning-making that extends beyond the conventional act of reading printed words. It includes reading, watching, comprehending, reacting to, creating, and engaging with digital and multimedia materials.

According to this concept, in order to properly understand and create meaning in the modern period, literacy learners must connect with a variety of communication mediums, such as digital, interactive, and visual components. Studying multimodal texts is essential in the current digital age, as communication frequently comprises visual and aural manifestations in addition to spoken or written words. Students gain critical literacy abilities by learning to read and create multimodal texts, which empowers them to examine the ways in which language, visuals, and sounds interact to create meaning. Students who possess this competency are better equipped to interact with print-based and digital multimodal contexts by developing deeper understanding and critical thinking skills. It has been demonstrated that multimodal literacy pedagogy improves students' engagement, motivation, and critical thinking abilities when they interact with both traditional and digital multimodal texts.

In response to these challenges, the integration of technology in education has been widely explored. Several studies have examined the impact of technology on language learning and reading comprehension. By utilizing technologically enhanced learning resources to boost reading comprehension has been emphasized in recent research. A study by Beemt (2020) discusses the importance of social media for today's youth and its potential educational value. It suggests that teachers should explore how social media can be effectively integrated into the curriculum to enhance student engagement and learning.

Quiz.com and other interactive learning platforms have been acknowledged for their capacity to increase student engagement through gamified activities. Game-based learning has been shown to dramatically improve students' cognitive abilities by promoting critical thinking and problem-solving, according to research by Widyastuti and Puspita (2020). Even with these benefits, there is still a lack of empirical research examining how well Quiz.com works to help senior high school students read multimodal texts more effectively.

Furthermore, previous research has shown that game-based learning can be beneficial, but it usually focuses on language acquisition in general rather than on particular text kinds, such as multimodal texts. Research on Quiz.com's incorporation within the Content-Based Instruction (CBI) paradigm is also still scarce. Previous research by Sari (2018) found that students who received instruction through CBI showed significant improvement in their reading comprehension scores compared to those who were taught using traditional methods.

Students reported that the content made the learning process more engaging and relevant. Another study from Khruawan and Dennis (2017) indicated that students taught through CBI showed a significant increase in their reading comprehension scores compared to those taught through traditional methods. The study emphasized that CBI fostered a positive attitude towards learning English. This study looks at how Quiz.com and CBI improve students' reading comprehension abilities in an effort to close these gaps. By concentrating on multimodal texts, this study seeks to provide light on how well interactive learning resources work to help students who struggle with understanding.

This study aims to close these research gaps by investigating how CBI increases students' motivation and engagement and how Quiz.com impacts students' comprehension of multimodal texts especially at Senior High School level. A novel technique provided by Quiz.com incorporates multimedia components that accommodate various learning preferences. Images and videos help visual learners, embedded noises help auditory learners, and interactive exercises help kinesthetics learners. With the combination of CBI, the teaching process supports an immersive and content-rich learning experience that might be effective to improve students' reading comprehension of multimodal text.

The following research questions are intended to be addressed by this study:

1. Is there any significant effect of using Quiz.com in teaching multimodal text?
2. What is perception of the students during reading comprehension class?

The authors attempted to address the research gap by combining Quiz.com and CBI to produce a dynamic, content-rich learning environment. By doing this, this study adds to the expanding corpus of research on technology-enhanced language acquisition and provides useful advice for teachers looking for creative ways to raise their students' reading comprehension. This study will examine the pedagogical implications of content-based instruction and game-based learning, highlighting the benefits of combining contemporary technology with conventional teaching approaches.

To ensure successful language acquisition as educational paradigms continue to change, it will be crucial to implement tactics that complement students' preferred methods of learning and technology developments. The study will ultimately establish the groundwork for further investigations into the ways in which digital resources such as Quiz.com can be used to enhance reading comprehension and general language competency in EFL (English as a Foreign Language) settings.

Method

Research Design

This study employs a mixed-method methodology, integrating quantitative and qualitative techniques to gain a thorough grasp of how well Quiz.com and Content-Based Instruction (CBI) work together to enhance students' reading comprehension of multimodal texts.

A quasi-experimental design is used in the quantitative component to evaluate the treatment's statistical efficacy. A control group that is taught using traditional techniques and an experimental group that uses Quiz.com as a teaching tool are the two groups involved. This approach makes it possible to compare the learning outcomes of the two groups while accounting for factors that could affect how well students comprehend what they read. Both groups get instruction on multimodal texts that are suited to their individual teaching philosophies during the four-week intervention.

In contrast, the qualitative component consists of a descriptive study that aims to investigate students' motivation, engagement, and perspectives during Quiz.com's deployment. Students' learning experiences and attitudes about digital and CBI-based education are better understood by descriptive analysis of data from observations, questionnaires, and open-ended replies. An enhanced and more comprehensive picture of how and why Quiz.com and CBI integration affects students' reading comprehension is provided by this qualitative data, which supports the quantitative findings.

Participant

The XI grade students, specifically XI F10 class at SMAN 14 Bandar Lampung were chosen as participants in this study because they represent the senior high school learning stage that lies between basic and advanced English proficiency. Since higher-order reading comprehension abilities are required of children at this point, they are appropriate subjects for analyzing the efficacy of multimodal texts and content-based instruction. Additionally, the selected class was thought to have an average level of English proficiency in comparison to other courses, offering a representative sample of the student body at the institution. The English teacher's collaboration and the class's accessibility were additional factors in the choice.

Data Collection Techniques and Instrument Development

Data will be collected using a mixed-methods approach, incorporating both quantitative and qualitative data collection techniques.

1) Quantitative data collection:

The primary quantitative data collection method will be a reading test designed to measure students' reading comprehension skills. The reading test will consist of pre-tests and post-tests, which will assess students' understanding of multimodal texts. The pre-test will be administered before the intervention to establish a baseline measure of reading comprehension, while the post-test will be administered after the intervention to evaluate any changes in reading comprehension levels. The reading tests will include 50 multiple-choice questions that require students to analyze and interpret multimodal texts. The test was conducted over 90 minutes and administered in two sessions: 45 minutes for the pre-test and 45 minutes for the post-test. According to Nuttall (1982), there are 5 essential skills in reading comprehension, including:

Table 1. Aspect of Reading

ASPECT OF READING		
Component	Total of Items	Question Number
Determining the Main Idea	10	1, 6, 11, 16, 21, 26, 31, 36, 41, 46
Finding Specific Information	15	3, 7, 14, 17, 22, 24, 27, 32, 34, 35, 37, 42, 45, 47, 50
Understanding References	4	19, 20, 43, 38
Making Inferences	15	4, 5, 10, 13, 15, 18, 23, 25, 28, 29, 30, 39, 40, 44, 49
Understanding Vocabulary	6	2, 8, 9, 12, 33, 48

2) Qualitative data collection:

In addition to the quantitative measures, qualitative data will be gathered through a questionnaire. A questionnaire is a type of research tool made up of a prearranged list of inquiries intended to collect data from participants, both qualitative and quantitative. According to Sreejesh et al. (2013) in their book assert that A questionnaire is a list of questions intended to be asked of interviewees, along with relevant guidelines specifying which questions should be asked and in what sequence.

Participants' experiences, opinions, attitudes, and self-reported gains in relation to the learning intervention—such as using Quiz.com to enhance reading comprehension skills—are examined using this method. This questionnaire gauges students' opinions using a five-point Likert scale. For every statement, the students are asked to rate their level of agreement or disagreement. The following is the scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

The questionnaire consists of some questions related to the study; it can be seen in Table 2 below:

Table 2. Questionnaire List

No.	Questions	Answers				
		SD	D	N	A	SA
		1	2	3	4	5
Perceptions about Reading Comprehension Class with Multimodal Texts						
1.	I enjoy the reading comprehension class when multimodal texts are used (infographics, posters, tweets, blogs, etc.).					
2.	Multimodal texts make reading comprehension more meaningful and relatable to real life.					
3.	I feel that multimodal texts reduce boredom in reading activities					
4.	Reading multimodal texts makes it easier for me to concentrate in class.					
5.	I feel more motivated to learn English reading when multimodal texts are used.					
Perceptions about Content-Based Instruction (CBI)						
6.	The topics in content-based instruction are relevant to my daily life.					
7.	CBI helps me connect reading comprehension with other subjects or knowledge.					
8.	I feel more engaged in class discussions when the teacher uses CBI with multimodal texts.					
9.	CBI helps me understand the purpose of reading more clearly.					
10.	I feel that CBI improves my interest in the reading comprehension class.					
Perceptions about Quiz.com as a Learning Media						
11.	Quiz.com makes reading comprehension activities more fun and interactive.					
12.	I feel more confident answering questions in class when using Quiz.com.					
13.	Quiz.com motivates me to practice reading comprehension more actively.					
14.	I feel that Quiz.com gives me quick and useful feedback about my reading skills.					

15.	I prefer learning reading comprehension using Quiz.com compared to traditional paper-based exercises.					
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Data Analysis Technique

The data analysis will involve both quantitative and qualitative approaches.

1) Quantitative Analysis:

Pre-test and post-test scores will be analyzed using a paired t-test to determine whether there is a statistically significant improvement in reading comprehension after the intervention. In addition, effect sizes will also be calculated to assess the magnitude of the impact of Quiz.com on reading comprehension skills.

2) Qualitative Analysis:

Thematic analysis will be employed to analyze the open-ended questionnaire responses. This will involve coding students' written answers to identify recurring themes and patterns related to students' experiences with Quiz.com and its perceived effectiveness in improving reading comprehension. The integration of both quantitative and qualitative data will provide a comprehensive understanding of the impact of Quiz.com on students' reading comprehension of multimodal texts.

Treatment

The treatment in this study was conducted over four meetings, consisting of one pre-test, two treatment sessions, and one post-test. The purpose of the treatment was to improve students' reading comprehension through the integration of Content-Based Instruction (CBI) and Quiz.com as a digital learning tool.

In this therapy, CBI was used to assist students learn English by providing them with relevant and meaningful material instead of just linguistic forms. As their vocabulary and comprehension abilities gradually developed, the primary objective was for students to comprehend and debate the concepts found in the readings. The reading process was made more dynamic, enjoyable, and captivating by using Quiz.com, which encouraged students to participate and be motivated throughout the classes.

There were four meetings for the implementation.

- Meeting 1 (Pre-test): The purpose of the pre-test was to gauge the students' preliminary comprehension of multimodal texts. A number of brief reading passages that combined written text with visual components, such as posters and quotes from social media, were sent to the students. The pre-test assessed comprehension abilities such as recognizing key concepts, deciphering

images, and contextualizing terminology. This lesson acted as a starting point for evaluating the pupils' post-treatment development.

- Meeting 2 (Treatment 1): In the first session, students were given an introduction to the idea of digital literacy. The instructor started the class with a brief talk about how students use digital sites like YouTube, Instagram, and online ads on a regular basis. The way that words, visuals, and layout combine to produce meaning was illustrated using real materials. Students identified how pictures enhance written information by analyzing a number of multimodal literatures. This session's linguistic focus includes basic sentence forms and descriptive adjectives that are frequently seen in digital documents. Through guided reading, pair conversations, and quick comprehension tests, this session urged students to actively interact with the information.
- Meeting 3 (Treatment 2): Personal Identities in Digital Spaces was the subject of the second treatment. Expressions for describing one's ideals, hobbies, and personal traits were taught to the students. Following that, they used their language skills to create a multimodal poster that reflected who they were. Short English words, images, and layout components that reflected how students saw themselves in the digital world were all incorporated in the poster. Students collaborated in pairs or small groups throughout this session, choosing relevant pictures and debating subject ideas. In addition to strengthening comprehension abilities, the exercise promoted creativity, teamwork, and self-assurance in effectively using English.
- Meeting 4 (Post-test): The post-test, which was the last session, was designed to gauge how much the two CBI treatments had improved the students' reading comprehension. Multimodal texts that were comparable in format and level of difficulty to those in the pre-test were included in the post-test. In addition to answering comprehension questions based on the text, students were required to interpret the linguistic and visual components. The efficiency of the CBI-based teaching in improving students' comprehension of multimodal texts was shown by comparing the results of the pre- and post-tests.

The overall goal of the therapy was to use interesting and real-world challenges to integrate language acquisition with topic mastery. Project-based learning and the use of multimodal materials promoted better understanding, critical thinking, and active engagement. Students' reading comprehension was enhanced by the Content-Based Instruction method, which also helped them acquire digital awareness and creative communication abilities that are applicable to learning environments in the twenty-first century.

Results

Findings on Students' Reading Comprehension Improvement

In this research, Descriptive statistics were used in the data analysis. The result of this research indicated that the mean score on pre-test was 83.41 and the standard deviation was 16.38. While on post-test the mean score was 95.74 and the standard deviation was 4.97. Based on the data gained on students' reading skills, it was indicated that the mean score and standard deviation of students in post-test scores were higher than the mean score in pre-test. As a result, researchers concluded the existence of a tendency while researchers used content-based instruction method (CBI) in the learning process in class that the mean score after having the treatment was higher than before having treatment, in which the mean score of post-tests was higher than the mean score of pre-tests. It can be seen in Table 3 below.

Table 3. Mean and Standard Deviation Of Pre-Test and Post-Test

Descriptive Statistics							
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Pre-Test	31	76.00	24.00	100.00	83.4194	16.38042	268.318
Post-Test	31	20.00	80.00	100.00	95.7419	4.97305	24.731
Valid N (listwise)	31						

The result of the study discovered that the content-based instruction method (CBI) in the learning process in class was effective in teaching reading skills at the XI F10 class at SMAN 14 Bandar Lampung.

Table 4. Paired Samples Statistic

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-Test	83.4194	31	16.38042	2.94201
	Post-Test	95.7419	31	4.97305	.89319

Based on the Paired Samples Statistics above, before and after using Quiz.com, students' reading comprehension scores are compared in the table. The pre-test mean score was 83.41, and the post-test mean score rose dramatically to 95.74, demonstrating a considerable improvement in the pupils' reading skills. It is confirmed that the same students participated in both tests because the number of participants (N) was 31. According to the pre-test standard deviation of 16.36, pupils' scores were widely dispersed, with some scoring significantly worse or better than others. However, following the intervention, students' results were more consistent, as seen by the post-test standard deviation of 4.97. It is implied from this

decrease in variation that most students reached a comparable level of improvement following their use of Quiz.com.

Furthermore, the pre-test standard error mean was 2.94, whereas the post-tests was 0.89. A smaller post-test standard error indicates that the sample mean, or average score, more closely reflects the actual performance of students following their use of Quiz.com.

All things considered, these figures show that pupils' reading comprehension abilities significantly improved following the use of Quiz.com. Indicating that the intervention was successful in improving students' comprehension of Multimodal texts, the mean score increased and the standard deviation decreased, suggesting that students not only performed better but also had more consistent reading abilities.

Table 5. Mean and Standard Deviation of Pre-Test and Post-Test

Paired Samples Test									
		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-Test – Post-Test	-12.32258	15.08285	2.70896	-	-6.79015	-4.549	30	.000
					17.85502				

The results of the Paired Samples Test indicate a significant improvement in students' reading comprehension after applying Content-Based Instruction (CBI). The mean difference between the pre-test and post-test scores is 12.32, showing a substantial increase in performance. Additionally, the standard deviation (15.08) and standard error mean (2.70) suggest that the data is reliable, with minimal variation in the results. The 95% confidence interval (-17.85 to -6.79) further confirms that the improvement is statistically significant since the range does not include zero.

The t-value (-4.549) and degrees of freedom (df = 30) indicate a strong effect of the intervention, while the p-value (.000) is well below 0.05, confirming that the difference is not due to chance. These statistical results demonstrate that CBI had a significant impact on students' reading comprehension skills. The substantial learning gains suggest that integrating content knowledge with language learning enhances comprehension more effectively than traditional methods.

Improvement of Students' Reading Skill

Students' reading comprehension in all five areas significantly improved once the instructional intervention had been implemented, according to the results. Students' scores increased from 90% on the pre-test to 100% on the post-test, indicating a 10% improvement in recognizing important concepts. The greatest gain was in the recognition of supporting information, which went from 72% to 100% a

massive 28% increase.

Students also saw a 20% improvement in their comprehension of terminology in context, going from 80% to 100%. As for the conclusion, scores increased by 7%, from 88% to 95%. Lastly, there was an 11% increase in comprehension of text structure from 89% in the pre-test to 100% in the post-test. These findings clearly imply that the method of instruction used, which most likely included contextual learning and explicit technique training, improved students' reading abilities. The comparison between pre-test and post-test scores is illustrated in Figure 1.

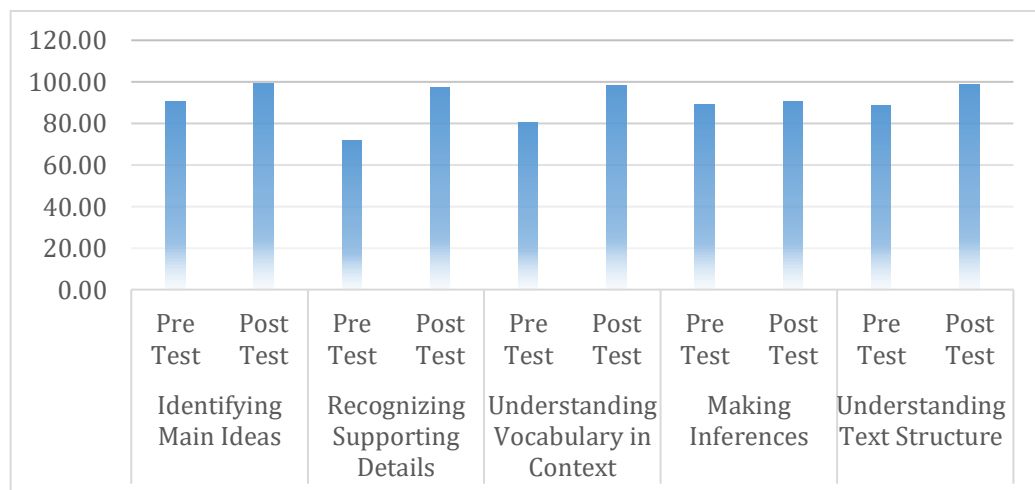


Figure 1. Students Reading Ability

In addition to gathering the results from the pre-test and post-test, the study also used a questionnaire to find out how students felt about using multimodal texts in content-based instruction. Additional information on students' experiences with the learning process, specifically with regard to motivation, engagement, and confidence in reading activities, may be gleaned from the questionnaire replies. It is crucial to present these findings because they balance the statistical findings with the subjective opinions of the students, providing a more thorough picture of the educational intervention's efficacy. The detailed results of the questionnaire are presented in the following section.

Reliability Analysis

The Cronbach's Alpha in SPSS was used to evaluate the questionnaire's reliability. For the 15 items, the outcome showed a coefficient of $\alpha = .936$. George and Mallery (2003) state that a Cronbach's Alpha value of greater than .90 is regarded as outstanding. This implies that the items measured the construct in a consistent and trustworthy way, indicating that the instrument had a very high degree of internal consistency. As a result, it would be safe to utilize the questionnaire to record students' opinions and attitudes toward multimodal texts in reading exercises. The

detailed results of reliability analysis can be seen in Table 6 below.

Table 6. Reliability Analysis

Reliability Statistics	
Cronbach's Alpha	N of Items
.936	15

Students' Perception toward Multimodal Text and Quiz.com

A content analysis of the questionnaire responses was carried out using the mean scores for each item in order to delve further within the perspectives of the students. With mean values ranging from 3.81 to 4.58 on a five-point Likert scale, the descriptive statistics demonstrate that students' reactions were largely positive. The question "I prefer learning reading comprehension using Quiz.com compared to traditional paper-based exercises" (M = 4.58) had the highest mean score, suggesting a significant preference for interactive and digital learning resources. Additionally, the item "Quiz.com makes reading comprehension activities more fun and interactive" received a high score (M = 4.55), indicating that gamified platforms improved student involvement to a substantial degree.

Table 7. Descriptive Analysis of Content Analysis

Descriptive Statistics		
	N	Mean
I enjoy the reading comprehension class when multimodal texts are used (infographics, posters, tweets, blogs, etc.).	31	4.39
Multimodal texts make reading comprehension more meaningful and relatable to real life.	31	4.42
I feel that multimodal texts reduce boredom in reading activities.	31	3.81
Reading multimodal texts makes it easier for me to concentrate in class.	31	4.00
I feel more motivated to learn English reading when multimodal texts are used.	31	4.39
The topics in content-based instruction are relevant to my daily life.	31	4.03
CBI helps me connect reading comprehension with other subjects or knowledge.	31	4.23
I feel more engaged in class discussions when the teacher uses CBI with multimodal texts.	31	4.23
CBI helps me understand the purpose of reading more clearly.	30	4.17
I feel that CBI improves my interest in the reading comprehension class.	31	4.16
Quiz.com makes reading comprehension activities more fun and interactive.	31	4.55

I feel more confident answering questions in class when using Quiz.com.	31	4.29
Quiz.com motivates me to practice reading comprehension more actively.	31	4.45
I feel that Quiz.com gives me quick and useful feedback about my reading skills.	31	4.42
I prefer learning reading comprehension using Quiz.com compared to traditional paper-based exercises.	31	4.58
Valid N (listwise)	30	

High mean scores were additionally identified for items related to multimodal texts, such as "Multimodal texts make reading comprehension more meaningful and relatable to real life" ($M = 4.42$) and "I enjoy the reading comprehension class when multimodal texts are used" ($M = 4.39$), demonstrating students' favorable attitudes toward multimodal-based instruction. "I feel that multimodal texts reduce boredom in reading activities" ($M = 3.81$) had the lowest mean score, on the other hand.

This indicates that although multimodal texts enhanced learning in general, some students could not have completely recognized their impact on lowering boredom, even though the results are generally good. The content analysis as an entire indicates that students believed that using Quiz.com and multimodal texts in subject-based education improved their motivation, engagement, and reading comprehension skills.

Discussion

Theoretical Implication

The results of this study advance the theoretical knowledge of multimodal learning and content-based instruction (CBI) in the context of English as a foreign language (EFL). The CBI framework put out by Coyle, Hood, and Marsh (2010), which highlights that learning language via meaningful content improves both linguistic and cognitive development, is supported by the notable improvement in students' reading comprehension following the intervention. Kress's (2010) multimodality theory, which emphasizes that creating meaning in the twenty-first century necessitates coordinating several modalities including textual, visual, and digital forms, is also consistent with the incorporation of multimodal texts.

This research supports the premise that multimodality expands students' literacy practices and develops critical thinking by showing that multimodal resources aid learners in understanding major ideas, supporting details, vocabulary, inference, and text structure. Moreover, the positive opinions expressed about Quiz.com align with Vygotsky's sociocultural theory (1978), namely the function of scaffolding and instant feedback in assisting students in staying within their Zone of Proximal Development (ZPD). By demonstrating how CBI, multimodal texts, and

gamified digital tools may successfully combine to enhance understanding and learner engagement, this study not only validates but also expands on current theoretical viewpoints.

Pedagogical Implications

This study provides a number of useful pedagogical insights for educators, learners, and educational institutions. The findings highlight the value of creating lessons that combine language acquisition with topic knowledge using multimodal texts for instructors, since this method makes reading exercises more relevant and engaging. To accommodate different learning styles and keep students interested, educators are urged to use a variety of multimodal materials, including blogs, infographics, posters, and social media texts. The results also show how beneficial it is to use gamified resources, such as Quiz.com, to boost motivation, give immediate feedback, and make the classroom more engaging.

According to the study, students who actively engage with multimodal texts are more likely to develop their sense of confidence and independence because they are encouraged to critically relate these diverse forms of communication to real-world situations in addition to being exposed to them. In order to successfully adopt multimodal and gamified education, schools should think about providing instructors with training and digital tools at the institutional level. By doing this, educational establishments may design more dynamic, egalitarian, and digital-age literacy-ready learning environments.

Effect of Content Based Instruction and Quiz.com

Students' reading comprehension abilities significantly improved through the combination of Content-Based Instruction (CBI) and Quiz.com. The improvement may be related to CBI's ability to establish a meaningful learning environment where language is acquired through interesting and pertinent material, rather of just concentrating on test results. In order to improve understanding and retention, CBI gave students in this study the chance to relate reading passages to real-world issues. Prior research by Fikni et al. (2020) also demonstrated the efficacy of CBI, revealing that students who received instruction through CBI demonstrated improved comprehension and engagement.

The results of this study corroborate earlier findings, showing that learning outcomes can be maximized by combining digital learning tools with CBI. Students' greater involvement in reading activities was another important outcome of this study. 31 students showed a high degree of interest and active participation in group discussions, according to observational data. This was probably made possible by Quiz.com's interactive features, which offered an engaging learning environment. Furthermore, the use of CBI aligns with the tenets of Coyle et al. (2010) proposed CLIL (Content and Language Integrated Learning). Both strategies emphasize how

language exercises and subject information should be integrated to help students not only improve their language proficiency but also learn about important subjects. Students are more likely to remain interested and process information efficiently when language instruction is integrated into pertinent circumstances.

Additionally, the study found that Quiz.com's collaborative environment encouraged peer learning and conversation, which is why students preferred working in groups. Compared to conventional approaches, the gamification element also decreased boredom and increased the enjoyment of reading activities. Additionally, Quiz.com's multimedia features—such as interactive quizzes and visuals—kept students' attention throughout the activities, resulting in greater focus throughout learning sessions.

Furthermore, this result validates Krashen's research Hypothesis (1985), which assumes that exposure to understandable information in a relevant context improves language acquisition. Reading exercises were included in pertinent material and combined with interactive tests to provide students with understandable, difficult, and interesting input. This explains why students' engagement and focus during reading exercises increased.

Although the study clearly demonstrates the advantages of utilizing Quiz.com, it also points out certain drawbacks. Some students experienced technological challenges, like trouble accessing the internet or not being accustomed with digital platforms. Furthermore, further assistance was required for some students with poor English proficiency to comprehend specific words and concepts.

The results generally support the idea that CBI can improve students' reading comprehension when used in conjunction with online resources such as Quiz.com. Compared to conventional approaches, it makes reading more purposeful and inspiring by combining interactive learning, meaningful material, and collaborative involvement.

Students' Participation and Problems

Despite the total positive results, certain difficulties were noted. Although multimodal texts enhanced understanding and engagement, they did not entirely eliminate classroom boredom, according to the questionnaire's lowest-rated item, "Multimodal texts reduce boredom in reading activities" ($M = 3.81$). This suggests that without additional adjustments in teaching strategies, the use of multimodal texts alone is not enough to adequately sustain student engagement.

Furthermore, not all students thought the subjects were completely applicable to their daily activities. While contextual learning-related items were rated largely positively ($M = 4.03$ – 4.23), some respondents said the materials didn't always correspond directly to their own experiences. This research highlights how crucial it is to choose materials carefully and provide teachers with scaffolding in order to make sure that multimodal resources are relevant and relatable to a range of learners. This is consistent with the findings of Dalton and Smith (2012), who

highlighted that while multimodal literacy improves learning possibilities, it also needs specific instruction to support students in efficiently processing and integrating various information modalities.

Implications for Teaching

The results of this research have significant pedagogical ramifications for senior high school English language instruction. First, the efficacy of CBI in conjunction with multimodal texts indicates that combining language teaching with topic knowledge results in a more genuine and significant learning environment. In order to promote deeper understanding, educators can think about creating classes that use real-world resources like blogs, infographics, and posters.

Second, Quiz.com's positive assessments show that interactive and gamified platforms may effectively enhance traditional education by boosting confidence, motivation, and engagement. Additionally, integrating these technologies can offer instant feedback, which is crucial to supporting learner autonomy.

Lastly, teachers have to vary up their teaching methods and make sure that multimodal resources are properly adapted to students' interests and settings, as some students continue to express boredom and a lack of relevance. In order to optimize the advantages of multimodal education and guarantee ongoing learner engagement, this balance between novelty and relevance is necessary.

Limitation of The Study

This study has a number of limitations, although offering insightful information on how well Quiz.com and Content-Based Instruction (CBI) enhance students' reading comprehension of multimodal literature. The study's findings are limited in their capacity to be applied to other contexts because it was limited to a single session and only included 31 students. Second, the four-week intervention period could not adequately reflect the long-term impacts of CBI and Quiz.com on students' reading comprehension.

Third, a few pupils mentioned technical difficulties, such erratic internet connections or a lack of experience with the online platform, which might have affected their performance and impression. Lastly, while reading comprehension was the main objective of the study, future research may expand the analysis to include other language skills like speaking, writing, or critical thinking in order to give a greater understanding of the advantages of CBI and gamified learning resources.

Conclusion

In conclusion, this study aimed to determine how well eleventh-grade students' reading comprehension abilities might be improved by integrating Content-Based Instruction (CBI) with multimodal texts and using Quiz.com as assistance. Following the educational intervention, the results showed that students' reading comprehension had significantly improved. Indicating both improved

performance and more consistent findings among participants, the pre-test and post-test data showed a significant rise in mean scores accompanied by a drop in the standard deviation. Together with multimodal resources, these findings offer convincing proof that CBI may produce meaningful and captivating learning experiences that promote deeper understanding. By enhancing the dynamic, entertaining, and engaging nature of learning, Quiz.com's integration further enhanced the beneficial impacts.

These conclusions were supported by the questionnaire results, which showed that students had positive opinions of Quiz.com and multimodal texts. While multimodal texts were found to make reading more relevant and related to real-life circumstances, the highest-rated items emphasized Quiz.com's role in increasing motivation, confidence, and active involvement. Some difficulties persisted, nevertheless, such as the fact that not all students found multimodal texts to be completely engaging, and some subject matter was not always seen as immediately applicable to students' everyday lives. These findings highlight how crucial it is to strike a balance between digital technologies and the thoughtful selection of relatable and real content in order to maintain engagement.

Overall, this research adds to the expanding corpus of work on technology-enhanced language acquisition by demonstrating how powerfully CBI, multimodal texts, and gamified platforms like Quiz.com may assist reading comprehension. According to the study, pedagogical innovation may greatly enhance EFL classroom results when it is based on the needs and interests of the students.

Suggestions

Based on the findings, several suggestions are proposed for future practice and research.

1. For teachers: In order to create courses that incorporate many communication modalities and real-life content, English instructors are urged to use CBI with multimodal texts. This will increase student involvement in addition to improving comprehension. In order to improve interaction, motivation, and instant feedback, educators could also think about implementing digital platforms such as Quiz.com as additional resources. To prevent boredom and accommodate various learning styles, it is still essential to use a variety of teaching techniques.
2. For students: In and out of the classroom, students should be actively encouraged to interact with multimodal texts. They may improve their critical thinking and literacy abilities by engaging with a variety of sources, including blogs, infographics, and digital media. Students can further increase their autonomy in studying by using platforms such as Quiz.com, whose interactive nature enables them to track their own progress while having fun.
3. For future researchers: In order to improve generalizability, further research should be done with bigger and more varied populations, as this study was

restricted to a small sample inside one institution. Future research may also evaluate other gamified platform types or concentrate on the long-term impacts of multimodal literacy practices and CBI. Qualitative study could throw additional insight on how students perceive multimodal learning and the particular difficulties they encounter in various settings.

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