A Study on EFL Vocabulary Teaching for Non-English Major College Students in China Based on Multimodal Theory

Xuanxuan Zhou[1,2], Nur Ainil Sulaiman[1], Hanita Hanim Ismail[1]

[1] Faculty of Education, Universiti Kebangsaan Malaysia, Selangor, Malaysia

[2] Department of College English, Wenzhou Business College, Zhejiang, China

Correspondence: Xuanxuan Zhou, Faculty of Education, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia

Nur Ainil Sulaiman, Faculty of Education, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor , Malaysia

Hanita Hanim Ismail, Faculty of Education, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia

Received: July 19, 2024 Accepted: October 24, 2024 Online Published: January 13, 2025

doi:10.5430/wjel.v15n3p265 URL: https://doi.org/10.5430/wjel.v15n3p265

Abstract

In the era of global diversification and technological advancement, the vocabulary teaching of teaching English as a Foreign Language (EFL) faces new challenges and opportunities. Multimodal theory-based teaching has gained significant attention in academic research. This study addresses the challenges in EFL vocabulary acquisition among non-English major students by employing the Explanatory Sequential Design (ESD). Initially, this study conducted a quantitative semi-structured questionnaire involving 78 non-English major college students in China. It identified key vocabulary learning issues, including monotonous vocabulary presentation content, limited vocabulary teaching methods and tedious vocabulary tasks. To address these challenges, this research implemented a research practice at Wenzhou Business College (WZBC) for one semester with 20 non-English major students, focusing on pre-class, in-class, and post-class stages. This study collected data to evaluate the effectiveness of the intervention and conducted a follow-up interview with 5 students to gain deeper insights. This study shows that applying multimodal theory in EFL vocabulary teaching enhances vocabulary acquisition by engaging students with varied content, interactive methods, and customised tasks that build confidence, thereby boosting interest and participation in vocabulary learning. These findings offer valuable insights for advancing EFL educational practices.

Keywords: Multimodal Theory, EFL Vocabulary Teaching, Non-English Major Students; Higher Education in China

1. Introduction

In an era of global diversification and technological advancement, the rapid evolution of information technology presents both challenges and opportunities for EFL vocabulary instruction globally. The United Nations Educational, Scientific and Cultural Organization (UNESCO) reports that global internet users increased from 16% in 2005 to 66% in 2022 (UNESCO, 2023). Despite this significant access, many teachers feel unprepared and lack confidence in effectively using technology in their teaching. This situation highlights the need to prioritise students' needs and leverage digital technologies that support education while maintaining essential human interaction.

Students increasingly demand diverse learning tools and modern teaching methods, reflecting their desire for improved learning experiences and engagement. These demands emphasise the importance of creating a joyful, collaborative, and supportive learning environment (Galatsopoulou et al., 2022). As e-learning advances within China's higher education system, teaching based on multimodal theory has gained traction (Li, 2020; Osadcha et al., 2021; Shi et al., 2023). Additionally, the guidelines for implementing first-class undergraduate course construction (Ministry of Education of the People's Republic of China, 2023) have accelerated the integration of recent academic and technological developments into college instruction. Despite the recognised advantages of multimodal approaches, current conditions reveal an urgent need for pedagogical strategies that effectively combine traditional and modern educational practices to foster an engaging vocabulary learning environment. This study aims to address these gaps by designing English vocabulary instruction informed by multimodal theory, providing practical insights to enhance vocabulary teaching for non-English major students in China. The research questions guiding this study are as follows:

a. What are the primary challenges in EFL vocabulary instruction for non-English major students?

b. To what extent does multimodal vocabulary teaching address these challenges?

2. Literature Review

This study seeks to explore the literature from two main perspectives: the development of multimodal theory and the challenges of EFL vocabulary teaching in China. By examining these areas, the study aims to identify gaps in existing studies and contribute valuable insights into the effective teaching of vocabulary for non-English major college students in China.

2.1 The Development of Multimodal Theory

Multimodal theory, rooted in semiotics and linguistics, has significantly influenced education and communication since its mid-20th-century origins. Roland Barthes (1977) first examined how images, symbols, and other non-linguistic signs contribute to meaning, paving the way for research on diverse forms of communication. In the 1990s, Gunther Kress and Theo van Leeuwen (1996) expanded this foundation by developing frameworks that place visual design on par with language in creating meaning. Their work inspired subsequent studies in fields such as digital media, advertising, and classroom instruction. Carey Jewitt's The Routledge Handbook of Multimodal Analysis (2009) further highlighted the relevance of multimodal approaches across educational and media contexts. Ginting et al. (2022) later emphasised the importance of refining teaching strategies and expanding access to digital tools, underscoring the need for professional development to help educators meet diverse student needs.

Recent research demonstrates the impact of multimodal theory on language learning, especially in English instruction. Zhang (2021) noted that teachers respond positively to multimodal lesson designs that integrate videos, infographics, and interactive activities, enhancing vocabulary learning. Khasawneh (2024) investigated how multimodal methods help dyslexic students in Saudi Arabia develop English skills, while He (2023) found that these approaches reduce anxiety and increase confidence, boosting academic outcomes. Under the "Internet Plus" framework, Guo (2024) showed that multimedia resources—like images, audio, and video—enhance reading comprehension and engagement in English learning. Studies by Lei and Zhang (2024) and Abdelhalim (2024) support the benefits of multimodal teaching in EFL lead-ins and collaborative writing, noting its role in improving student engagement and confidence. Yan (2024) has also called for further research into practical multimodal applications in EFL, recognising the theory's essential place in modern education. Together, these studies underscore multimodal theory's value in shaping innovative, inclusive language teaching strategies.

While these studies contribute valuable insights into various aspects of education within the framework of multimodal theory, they neglect the specific context of EFL vocabulary teaching for non-English major college students in China. Their focus primarily encompasses issues related to the development and influence of multimodal theory in education and language learning, lacking a detailed exploration of how multimodal resources can be effectively applied to vocabulary learning. This gap underscores the need for research that addresses the unique challenges and diverse learning styles of non-English major students in EFL vocabulary acquisition, emphasising the importance of developing tailored multimodal strategies and practices.

2.2 Challenges in EFL Vocabulary Teaching in China

In China, Traditional EFL vocabulary teaching primarily relies on rote memorisation and repetitive drills, often limiting meaningful language application and engagement. As Yang and Dai (2011) stated traditional rote learning methods remain entrenched among teachers and students, hindering the adoption of innovative, interactive teaching approaches despite ongoing calls for reform in education. Therefore, Fu (2021) critiques rote-based approaches, noting that they restrict students' exposure to language in real-life contexts. This kind of method can support vocabulary retention but rarely encourages practical language use.

With the realization of the above issues, researchers in China began to find new ways to teach EFL vocabulary. Li (2021) investigated the effects of a game-based vocabulary learning app on vocabulary achievement, motivation, and self-confidence among 70 Chinese EFL college students. The scholar found that apps enhance teaching outcomes, although motivation and self-confidence do not predict vocabulary achievement. Lu and Dang (2022) investigated the vocabulary levels of postgraduate EFL learners in China and indicated that the course materials were overly challenging due to insufficient attention to vocabulary in their design. In the following year. In addition, Li (2024) observed that while vocabulary apps offer individualised tasks, they seldom support group-based activities or real-time language use, limiting their effectiveness. At the same time, Liu et al. (2024) systematically reviewed 22 studies on EFL vocabulary learning activities for young learners. They identified ten intentional and eight incidental types of activities and found that those with more psychological conditions enhance deeper learning and retention, providing valuable guidance for designing age-appropriate vocabulary instruction.

Recent studies on EFL vocabulary teaching in China, including research on game-based apps, students' experiences, and the effectiveness of course materials, reveal persistent challenges, such as overly difficult content, limited group interactions, and a need for engaging multimedia strategies. Despite the identification of promising innovative approaches, there is a lack of research exploring how multimodal strategies can effectively enhance vocabulary acquisition while addressing the limitations of traditional rote memorisation, insufficient vocabulary support in course materials, and the need for interactive, engaging, and contextually relevant learning experiences for non-English major students in China.

In summary, while existing studies offer useful insights into multimodal theory, they largely overlook its specific application in EFL vocabulary teaching for non-English major college students in China. Current research tends to focus on areas like brand communication and collaborative writing, leaving a crucial gap in exploring how multimodal resources can be leveraged to enhance vocabulary learning for this group. As a result, persistent challenges—such as difficult content, limited interaction, and a need for engaging multimedia strategies—remain largely unaddressed in the context of EFL vocabulary instruction.

3. Methods

In this study, the adoption of a mixed-methods approach is central to the research design. Mixed methods research goes beyond merely

combining quantitative and qualitative data and it involves a carefully designed research process where these methods complement each other, enhancing the overall effectiveness of the research (Creswell, 2014). Conversely, the ESD operates as a specific methodological strategy, directing the sequence of data collection and analysis. This choice is grounded by Johnson and Onwuegbuzie (2004), which posits that combining quantitative and qualitative methods leads to a more comprehensive exploration of research questions. ESD specifically serves to strengthen the research by first gathering quantifiable data to establish an initial finding through the quantitative questionnaire about the challenges, gaining a foundational understanding of the issues at hand. Following this, the qualitative phase allows for an in-depth exploration of these initial findings, offering context and deeper insights that quantitative methods alone might overlook. Zhang (2015) suggests that the general principle for selecting modalities in vocabulary teaching is to fully utilise modern media technology to convey meaning as effectively as possible and achieve optimal learning outcomes. In addition, this study intends to assess students' feedback in multimodal vocabulary teaching to examine how multimodal theory can enhance EFL vocabulary from pre-class vocabulary analysis, in-class vocabulary instruction, and post-class vocabulary homework.

3.1 Quantitative Research

The initial quantitative study was conducted to provide a comprehensive understanding of the primary challenges encountered by students in vocabulary learning. Quantitative research allows for the quantification and measurement of the frequency and severity of different challenges through statistical analysis, thereby providing a reliable data foundation for further investigation

3.1.1 Research Location and Participants

WZBC serves as an ideal site for this study for several reasons. Firstly, the diverse student population allows this study to effectively explore EFL vocabulary teaching among non-English majors. Secondly, this school's emphasis on innovative and creative teaching methods aligns perfectly with the study's focus on multimodal theory, facilitating the implementation and assessment of the proposed teaching strategies. Lastly, the school provides facilities and resources that support the effective delivery of multimodal vocabulary instruction, enhancing the overall research environment.

In this quantitative study, a purposive sampling technique was employed to select 78 non-English major college students, specifically targeting non-English major students enrolled in English courses at the college level. These participants were chosen based on their relevance to the study's focus on EFL vocabulary instruction. This selection of a representative sample enables a targeted examination of the challenges and experiences faced by non-English major students in vocabulary learning.

3.1.2 Instruments

The study adopted the User Experience Questionnaire (UEQ) as the primary instrument for it demonstrated high reliability and accuracy in assessing user experience (Schrepp, 2015). The UEQ offers a comprehensive evaluation of various dimensions of user experience, including attractiveness, clarity, efficiency, dependability, stimulation, and novelty. Additionally, a semi-structured questionnaire was developed based on trustworthiness principles in qualitative research (Johnson & Parry, 2022) to complement the quantitative UEQ assessment. This semi-structured questionnaire aimed to gather open-ended responses from participants, allowing for a deeper exploration of their experiences and perceptions related to EFL vocabulary instruction.

3.1.3 Data Collection

Data collection utilized the online questionnaire platform Wenjuanxing, widely used in China. The questionnaire, designed for quantitative data collection, was distributed to students across four classes, targeting non-English major students enrolled in English courses. The questionnaire captured students' experiences and perceptions regarding various challenges in vocabulary learning through structured items. Wenjuanxing automatically generated ratios and percentages based on participants' responses, providing a quantitative assessment of the frequency or severity of these challenges.

3.1.4 Data Analysis

The collected data from the Wenjuanxing questionnaire underwent quantitative analysis using descriptive statistics. This method enabled the calculation of frequencies, percentages, and ratios for each questionnaire item, providing a comprehensive overview of the prevalence and severity of identified challenges in EFL vocabulary instruction among non-English major students.

In a word, this analysis revealed several prevalent challenges faced by students in vocabulary learning. First, monotonous content diminishes students' interest. Second, limited teaching methods reduce students' engagement. Third, tedious tasks lower students' confidence in vocabulary acquisition. In this way, this quantitative research not only addresses the first research question regarding the primary challenges in EFL vocabulary instruction for non-English major students but also lays a foundation for subsequent practical steps aimed at addressing the second research question.

3.2 Qualitative Research

The qualitative research aims to explore the effectiveness of multimodal vocabulary teaching by gathering detailed data on students' experiences, perceptions, and engagement. The study employs qualitative methods to capture nuanced insights into the teaching and learning process.

3.2.1 Research Participants

This study involves a class of 20 non-English major students in WBC College who participate in a multimodal vocabulary teaching

experiment. Following the experiment, a focus group interview is conducted with 5 selected students from this group to gain deeper insights into their experiences and perceptions. These participants were chosen based on their varied responses and engagement levels during the experiment.

3.2.2 Research Instruments

This study applies a focus group interview protocol as the primary instrument in the qualitative phase to explore students' experiences and perceptions in a multimodal vocabulary teaching experiment. After the experiment, the study selected five non-English major students for interviews based on their varied responses and engagement levels during the study, ensuring diverse and representative data.

3.2.3 The Process of Research Design

The purpose of this qualitative research is to empirically examine the implementation of multimodal vocabulary teaching and explore effective solutions to address the identified challenges in EFL vocabulary acquisition. Through the practical application of multimodal teaching strategies, this study aims to investigate how these methods can enhance vocabulary learning for non-English major students, ultimately improving their overall language proficiency and engagement. This research is structured around three key phases: pre-class preparation, in-class instruction, and post-class assignments.

3.2.3.1 Pre-Class: Multimodal Preparation

Step 1: Multimodal Text Analysis.

In the pre-class phase, entire reliance on vocabulary lists specified by the textbook may not be sufficient for effective lesson preparation. Teachers need not only to understand the course objectives and syllabus but also to be familiar with the teaching materials. During lesson preparation, teachers must have a macro-level understanding of the internal network relationships and a micro-level focus on specific words, phrases, and sentence structures. This involves identifying high-frequency words that also reflect contextual relationships, which sets the stage for teaching design and ensures the effective achievement of teaching objectives. In addition, the study anticipates that variations in word form and collocation in the original text may confuse students during listening or reading exercises. By identifying challenging keywords in advance, teachers can help students strengthen their vocabulary. The KH CODER software can efficiently assist researchers in completing time-consuming tasks (Higuchi, 2016).

As an example, using the KH CODER software for multimodal text analysis (Figure 1), the researcher analyzed the text of the unit within the teaching syllabus. To begin with, through filtering, the researcher conducted a word frequency analysis of noun words or collocations (shown in deep blue on the left side and automatically sorted, while the right side presents a clear and straightforward light blue bar chart). The results indicated that "holiday" (19 times), "client" (12 times), and "people" (9 times) are keywords in this unit. Additionally, by clicking the "+" sign on the left side, the interface shows that "activity" appeared as "activities" in plural form in the textbook audio or reading material. This suggests that such variations may lead to misunderstandings in vocabulary comprehension and present potential difficulties in audio texts. The teacher can predict them as vital or difficult words. What's more, for more detailed data, clicking on any word directly allows the researcher to locate where the word appears in context (Figure 2). For example, clicking on "opportunity" provides a specific context as shown in Figure 2 with sentence examples. This enables teachers to anticipate potential challenges and core vocabulary in the classroom, facilitating the design of focused vocabulary texts and corresponding audio or reading editing. The KH CODER multimodal text analysis software offers multiple functions and straightforward operations, making it a valuable tool for teachers.

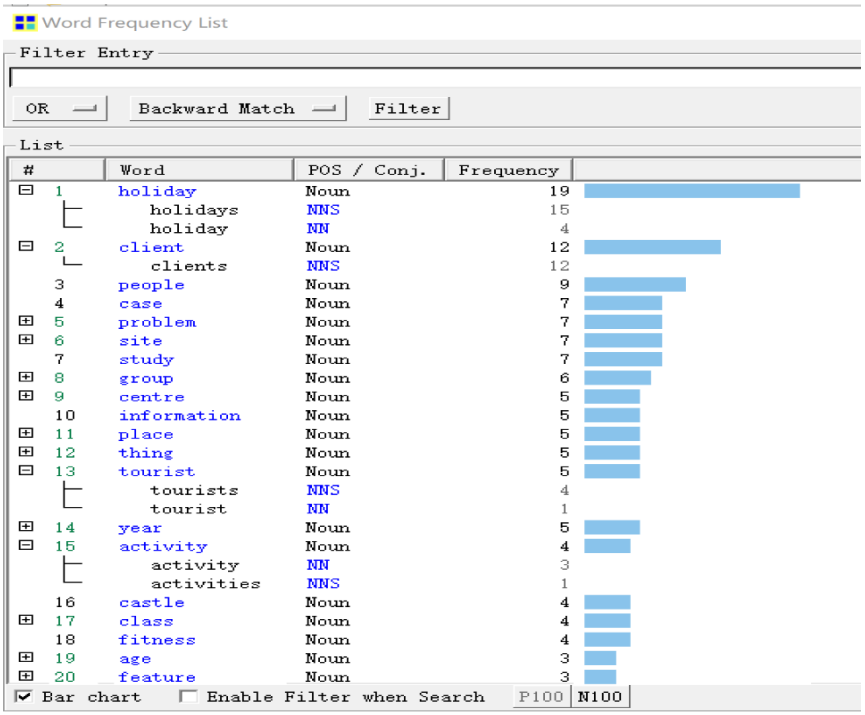

Figure 1. An Example of Key Terms in Multimodal Text Analysis Using KH Coder

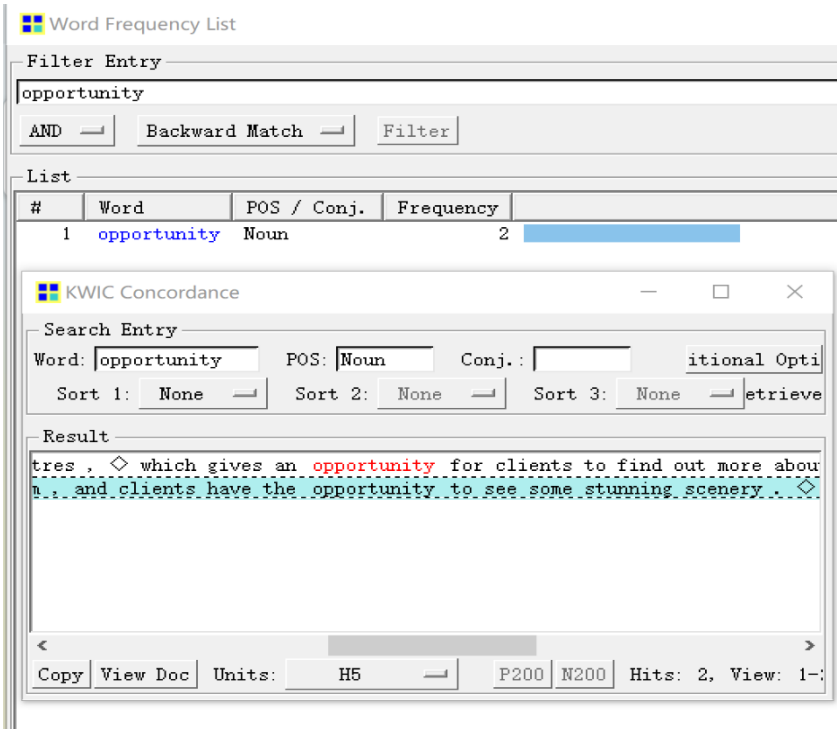

Figure 2. An Example of Contextual Localization in Multimodal Text Analysis Using KH Coder

This step lays the necessary groundwork for students to build their vocabulary skills before formal classes commence. Preparatory tasks may include instructing students to imitate and repeat new words to audios or video clips and to upload their own recordings of word or sentence pronunciation by using platforms like Chaoxing, a popular study platform in Chinese colleges.

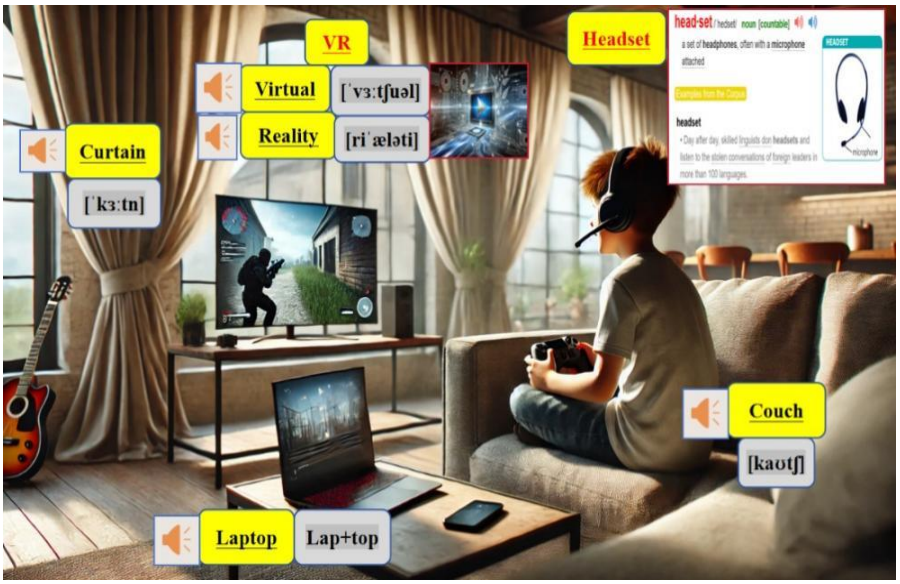

Figure 3. An Example of the Multimodal Vocabulary Presentation

Step Two: Multimodal Vocabulary Card Creation.

As Zhang (2015) states, the overarching principle for mode selection in vocabulary instruction is to fully utilise modern media technology to maximise the expression of the speaker's meaning and achieve the best result. In accordance with the course objectives, the teacher prepares vocabulary cards that combine visual, auditory, and pictorial elements for the target words. Taking one vocabulary card as an example (Figure 3), students can learn vocabulary in all dimensions with the help of the multimodal vocabulary card: First, the vocabulary card presents all words within a visual context, making it easier for students to understand. Second, this card includes essential information, such as phonetic transcriptions and audio or construction hints. Additionally, each word is underlined as a link; when students click on it, a professional dictionary pops up to provide further explanations and information. For example, when students click on "headset", it turns red and displays the dictionary details in the upper right (Longman Online Dictionary, 2024). For more abstract terms like "VR", clicking on the word shows a short video clip to the right of it. All supplement videos or dictionary explanations can only be accessed and enlarged by double-clicking the link when needed. This content is designed for flexible use based on actual diverse students' needs.

Step Three: Preparing Multimodal Extensive Vocabulary Materials.

Unlike traditional vocabulary tasks, the preparatory materials in this study include resources such as clear pronunciation guides, short video clips, contextual scenarios, and other multimodal content sourced from textbooks, exams, interviews, documentaries, film clips, and international news. By integrating these diverse materials, students can engage with vocabulary in a dynamic way that enhances both understanding and retention. Furthermore, by tapping into their long-term memory frameworks, learners are better equipped to apply existing knowledge to new material, strengthening their comprehension (Chen, 2007). These materials serve a dual purpose: they not only introduce vocabulary but also activate prior knowledge, helping students connect with the upcoming lesson content. In addition, the materials present cultural themes relevant to the lesson, allowing students to engage with vocabulary in advance. This approach promotes familiarity with cultural contexts and customs, creating a solid foundation for the course and reducing the risk of misunderstandings arising from cross-cultural differences.

3.2.3.2 In-classroom: Multimodal Teaching Modes

Zhang Delu (2010) categorizes the modalities in foreign language teaching into language modalities and non-language modalities. Based on his classification, the researcher classifies multimodalities in vocabulary comprehension teaching as follows (Figure 4):

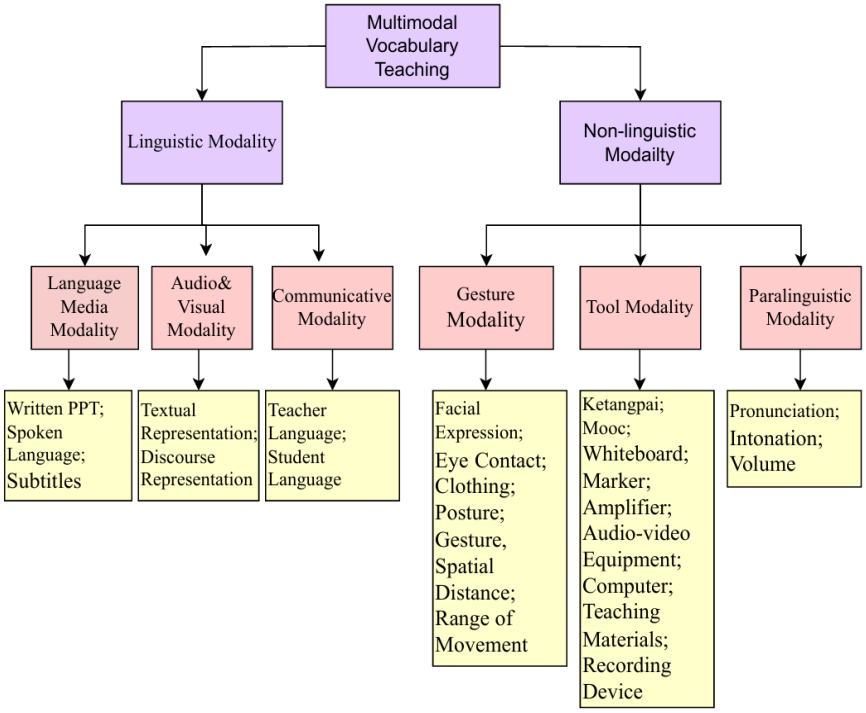

Figure 4. The Multimodal Modality in Vocabulary Instruction

The structure of this framework highlights how linguistic and non-linguistic elements work together to create a holistic approach to vocabulary teaching. The Linguistic Modality lays the groundwork for language input, while the Non-linguistic Modality enhances comprehension through non-verbal cues, tools, and paralinguistic factors: The Linguistic Modality centres on the use of language and its various forms to facilitate vocabulary learning. It comprises three essential components. The Language Media Modality includes traditional language tools such as written PowerPoint presentations, spoken language, and subtitles. These elements present vocabulary in both written and spoken formats, enhancing comprehension and reinforcing language structures. The Audio & Visual Modality features textual and discourse representations, which contextualise vocabulary through visual or auditory means. This approach supports students' understanding by providing clear examples of vocabulary used in diverse contexts. The Communicative Modality involves teacher and student language, fostering direct interaction. This engagement allows learners to actively utilise vocabulary in dialogue, strengthening their understanding through real-time application and feedback. The Non-linguistic Modality encompasses non-verbal aspects that aid vocabulary learning and comprehension, and it is also divided into three components. The Gesture Modality includes non-verbal cues such as facial expressions, eye contact, clothing, posture, gestures, spatial distance, and range of movement. These elements convey meaning and enrich vocabulary teaching by linking words with physical expressions or cultural signals. The Tool Modality covers a range of teaching aids, including digital platforms, whiteboards, markers, amplifiers, audio-visual equipment, computers, teaching materials, and recording devices. These tools enhance the delivery of content, providing visual or auditory support to reinforce vocabulary learning. Lastly, the Paralinguistic Modality focuses on pronunciation, intonation, and volume, addressing the subtleties of spoken language. By varying these elements, teachers can emphasise specific vocabulary items, helping students grasp nuances in language use and pronunciation. All these modalities establish a comprehensive and engaging multimodal learning environment that effectively supports vocabulary acquisition.

From all the above, this kind of teaching requires teachers to flexibly utilize appropriate language modalities and non-language modalities based on the specific requirements of the course objectives, including knowledge, skills, and qualities. For instance, teachers should first determine the key information to be presented on the PowerPoint slides, as well as supplementary information that needs to be conveyed orally. Secondly, teachers should not overlook how differentiation in aspects like colour, font size, and whiteboard use can convey information. Additionally, teachers should provide video or image cues for potential points of confusion that may affect students' understanding, helping them quickly overcome challenges and keep up with the course progress. Furthermore, teachers should consider factors such as the classroom setting and layout and their impact on students during instruction. They should also contemplate how to effectively interact with students through facial expressions, posture, tone, and other means to ensure smooth classroom teaching. Importantly, teachers should pay attention to the use of multimodal education platforms like Ketangpai or MOOC and seamlessly integrate materials from both inside and outside the classroom to ensure continuity between pre-class, in-class, and post-class activities. For example, pre-class preparation lays the necessary foundation for the content covered during the lesson, sparking students' curiosity and desire for knowledge. Introducing essential vocabulary also helps students gain a conceptual understanding of the subject matter. During instruction, teachers can ask questions related to the content and offer rewards as incentives (e.g., bonus points for active participation in Ketangpai).

3.2.3.3 Post-class: Assigning Multimodal Homework

As Gu (2007) suggests, while multimodal learning can enhance engagement, poor implementation may lead to distractions that hinder knowledge retention, resulting in brief excitement followed by a sense of emptiness. Therefore, this research contends that the well-designed post-class assignment is a crucial component of multimodal vocabulary instruction. These assignments should not only provide prompt feedback on in-class content but also contribute to the cultivation of long-term vocabulary habits and interests. Furthermore, they should cater to students of varying proficiency levels, allowing them to fill gaps in their understanding. Therefore, I will discuss this aspect by dividing it into regular tasks and phased tasks.

Firstly, regular tasks in multimodal vocabulary homework:

Multimodal Vocabulary Tasks: The primary objective of the multimodal vocabulary task is to assess students' understanding of vocabulary in context through the use of various multimodal resources, such as images, videos, and audio clips. Teachers can utilize tools like KH Coder to create fill-in-the-blank and multiple-choice questions that require students to select appropriate vocabulary based on the presented multimodal resources. The implementation begins with the collection of materials relevant to the current learning theme, ensuring that they align with the vocabulary being taught. For instance, after selecting suitable multimodal resources, teachers can design engaging tasks where students are required to watch a short video and fill in the blanks or answer multiple-choice questions related to the key vocabulary presented. This approach not only reinforces vocabulary acquisition but also provides additional practice opportunities for students who need more support, ultimately helping them become more familiar with important content in meaningful contexts.

Integration of Extensive and Intensive Vocabulary Practice: This kind of assignment focuses on the integration of extensive and intensive vocabulary practice, catering to different cognitive levels among students. In this task, students first engage in extensive vocabulary learning by listening to simplified key sentences paired with audio recordings. They then respond to comprehension questions based on these sentences. This initial phase allows students to familiarize themselves with new vocabulary in a low-pressure environment. Following this, students proceed to intensive vocabulary practice, where they transcribe the key sentences to deepen their understanding and reinforce retention. This alternating practice model ensures that students at varying proficiency levels can find suitable learning opportunities, helping to maintain engagement and build confidence in their vocabulary skills.

Collaborative Multimodal Activities: This assignment emphasizes collaborative multimodal activities designed to enhance students' cooperative skills and vocabulary application while fostering an appreciation for cultural differences. Teachers can assign students to small groups based on the type of vocabulary materials, allowing them to rehearse dialogue-based texts. After rehearsing, students are tasked with recording their audio or video performances, demonstrating their understanding and application of the learned vocabulary. These multimedia assignments can then be uploaded to platforms like TikTok providing a space for classmates to watch and comment on each other's work. This not only adds an element of enjoyment to the assignments but also reinforces the knowledge gaps in a contextualized learning environment. Following the performances, teachers can facilitate a class discussion, encouraging students to reflect on the various expressions and cultural backgrounds presented, thereby enhancing their critical thinking and cross-cultural communication skills.

Next, phased tasks in multimodal vocabulary homework:

Summative Multimodal Knowledge Presentation: This is a phased task that occurs after the completion of a unit or topic of study. Instead of the teacher, students are required to give brief (around 2 minutes) presentations or role-plays summarizing the instructional content and tasks from that phase. This presentation serves to organize the knowledge structure at a macro level, provide explanations and summaries of specific points at a micro level, and enable other classmates to quickly review and reproduce what they have learned in a natural setting. This approach is beneficial in preventing students from developing aversion and fatigue towards rigid review methods. It also fosters creativity and promotes the habit of proactive self-learning. It's worth noting that this task is only assigned to individual students or small groups on a rotating basis and does not apply to all students. Therefore, teachers need to inform specific students who will be responsible for this assignment at least two weeks in advance.

Practical Multimodal Bonus Tasks: This study includes optional assignments designed to enhance engagement through a variety of multimodal resources, such as English news broadcasts and English competitions. These tasks yield concrete results within a set timeframe, including awards and prizes, as well as abstract benefits like increased encouragement and self-reflection during preparation. This approach effectively boosts student motivation and fosters positive learning experiences, maintaining enthusiasm for vocabulary acquisition. By engaging in these low-pressure, goal-oriented assignments, students gain confidence, develop a sustained interest in vocabulary learning, and significantly expand their EFL vocabulary. Additionally, these tasks naturally broaden students' topic-related vocabulary. Student feedback confirms that this multimodal vocabulary instruction yields substantial positive outcomes.

3.2.3.4 The Contrast Between Traditional Vocabulary Teaching and Multimodal Vocabulary Teaching

As is shown in Table 1, traditional vocabulary teaching consists of three main stages: task division, classroom instruction, and homework. In the pre-class stage, teachers send students a vocabulary list to preview, mainly for spelling and basic definitions. In the classroom, teachers lead the lesson by presenting vocabulary tasks through slides, explaining each word based on textbook content. Students follow along, complete vocabulary tasks, and review answers. After class, teachers assign straightforward practice exercises to reinforce the vocabulary introduced during the lesson.

This traditional approach is largely teacher-centred and may limit student engagement, as students often adopt a passive role with minimal

opportunities for active learning or exploration. The method's uniformity may also fail to accommodate different learning preferences, while vocabulary practice tends to focus on basic word meanings rather than contextual understanding or practical use. Consequently, this approach may reduce motivation and restrict the depth of vocabulary learning.

Table 1. The Traditional Vocabulary Teaching Design

Tasks	Pre-class Preparation	In-class Instruction	Post-class Assignment
The Teacher's Work	The teachers send vocabulary lists according to the textbook.	The teacher presents PPT and explains vocabulary tasks in accordance with the textbook content.	The teacher assigns homework.
Students' Work	Students preview vocabulary lists.	Students listen to the teacher and do vocabulary tasks.	Students complete homework.

However, the following Table 2 of the multimodal vocabulary teaching offers more positive possibilities for vocabulary instructions. In pre-class preparation, the teacher uses tools like KH CODER to analyse the textbook, identifying essential vocabulary and complex sentences. They then create vocabulary lists enhanced with audio, video, text, or images to engage students and provide additional resources for extensive vocabulary practice. Students review these lists through activities such as repetition, shadowing, and recording, which they upload to the platform for feedback. This phase helps students familiarise themselves with vocabulary before the lesson, setting a strong foundation for active class participation. During in-class instruction, the teacher presents a multimedia-rich PPT with supportive audio, video, text, and image elements, making vocabulary more accessible and engaging. The teacher organises the classroom layout to encourage group interactions and uses expressions and gestures to guide the session, creating a dynamic environment for learning. Students interact with the PPT content, set learning objectives, and participate in discussions to deepen their understanding of vocabulary. This active engagement allows students to explore the vocabulary in real time, ask questions, and solidify their grasp of new terms through collaborative activities. In the post-class phase, the teacher assigns practice tasks to reinforce key concepts, designing collaborative homework to support students of varied skill levels. They develop multimodal assignments that cater to diverse learning preferences, such as independent or partnered audio or video recordings that students upload to the platform. Students continue practising vocabulary until they are confident, summarising and applying what they've learned. This structured, multimodal approach enhances vocabulary retention by enabling students to engage with words in multiple contexts, ensuring a deeper and more lasting mastery of vocabulary.

Table 2. The Multimodal Vocabulary Teaching Design

Tasks	Pre-class Preparation	In-class Instruction	Post-class Assignment
The Teacher's Work	a. The teacher analyses the textbook with tools like KH CODER to find keywords and challenging sentences. b. The teacher creates vocabulary lists with audio, videos, texts or images. c. The teacher organises additional materials for extensive vocabulary.	a. The teacher presents the PPT with multimedia elements, including audio, videos, texts or images to support the lesson. b. The teacher arranges the classroom layout to encourage interactions. c. The teacher selects appropriate teaching distance, expressions, and gestures to guide the session.	a. The teacher assigns practice tasks based on key concepts. b. The teacher designs collaborative homework for students with different skill levels. c. The teacher develops multimodal tasks to cater to diverse learning preferences.
Students' Work	a. Students preview word lists by repeating, shadowing, and recording. b. Students submit recordings and answer vocabulary tasks on the platform.	a. Students study the PPT, set learning goals, and actively participate in class activities. b. Students engage in discussions with the teacher and classmates to deepen understanding.	a. Students practise vocabulary until confident. b. Students create audio or video recordings independently or with a partner and upload them to the platform. c. Students summarise learned vocabulary and participate in tasks.

In this way, multimodal vocabulary teaching highlights the advantages of multimodal vocabulary instruction over traditional methods by promoting active engagement, deeper understanding, and tailored learning experiences. Through diverse media and interactive tasks, students explore vocabulary within meaningful contexts, which strengthens retention and motivation. Collaborative and flexible activities support various learning styles, encouraging both independent and peer-assisted practice beyond simple memorisation. This approach creates a dynamic, student-focused learning environment that fosters practical and lasting vocabulary use.

3.2.4 Data Collection

Intending to understand student experiences and perspectives, a class of non-English major students from WBC College participates in a multimodal vocabulary teaching experiment. Following this, a focus group interview is conducted with selected students to gather deeper insights. These students are chosen for their varied responses and engagement levels, providing a balanced view of the teaching method's effectiveness.

3.2.5 Data Analysis

This study also employs thematic analysis, following Braun and Clarke (2006), to systematically examine the interview data. The analysis includes familiarising with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and writing the final report. The researcher first reads and annotates transcripts to identify preliminary codes related to student feedback on multimodal teaching. The analysis then organises these codes into core themes that reflect learning experiences. Finally, the study systematically presents these themes to illustrate the practical impact of multimodal vocabulary teaching on students.

4. Discussion

This study explores the effectiveness of multimodal vocabulary teaching in enhancing student engagement, interaction, and confidence in vocabulary learning. By employing diverse methods that incorporate text, images, and audio elements, this approach aims to provide students with a comprehensive understanding of vocabulary, addressing different learning needs and preferences. Multimodal methods not only stimulate interest but also encourage active participation, creating a dynamic and supportive learning environment that accommodates varying proficiency levels.

This study demonstrates that multimodal vocabulary content effectively stimulates student interest, increasing both engagement and word recognition efficiency. By combining text, images, and audio, multimodal vocabulary lists allow students to understand vocabulary from multiple angles, supporting both broad comprehension and detailed understanding. Interactive elements, such as clickable audio icons for pronunciation, provide seamless opportunities to reinforce challenging aspects of vocabulary learning and practice words in context (Dziemianko, 2024). Overall, vivid, visually supported vocabulary materials significantly foster student interest, reducing task-related pressure and enhancing word recognition. The study further highlights that diverse vocabulary teaching methods enhance interaction and classroom engagement, facilitating vocabulary acquisition, speaking, and writing (Wu, 2020; Ilmi & Dewi, 2022). Student feedback consistently shows a preference for multimodal content over traditional formats, with interviews revealing that students found the approach more varied, interactive, and supportive of incidental learning. This approach keeps students attentive in class and encourages continued vocabulary study. Students also reported that the content was well-organised and memorable, leading to a stronger grasp of the material and supporting ongoing engagement. Furthermore, this study finds that multimodal vocabulary teaching tasks accommodate different proficiency levels, and effectively increase students' confidence (Zheng et al., 2024). Clear visuals, vibrant colours, varied fonts, and accessible audio-visual materials enable students with diverse language foundations to focus, differentiate vocabulary knowledge, and sustain interest, thus improving learning efficiency. This inclusive approach allows students with stronger foundations to personalise their task reviews on integrated platforms like MOOC.

5. Conclusion

In summary, this study identified key challenges in EFL vocabulary learning, including monotonous content, limited teaching methods, and tedious tasks. Multimodal vocabulary teaching effectively addresses these issues by introducing varied content, interactive methods, and tailored tasks that build student confidence and engagement. These findings offer valuable insights for enhancing EFL vocabulary teaching practices. However, as this study focuses only on non-English major students, the generalisability of the results may be limited. Future research should include students from diverse backgrounds and disciplines to broaden the applicability of these findings. Additionally, although this study considers student feedback, it does not fully address the training and support teachers need to implement multimodal teaching effectively. Further research should explore teacher training and support requirements to gain a comprehensive understanding of multimodal teaching's effectiveness across different educational contexts.

Acknowledgments

Firstly, the authors would like to express gratitude to UKM for its valuable support. Secondly, we extend our sincere thanks to WZBC for providing the research opportunity. Lastly, we offer our heartfelt appreciation to all participants for their cooperation during the study.

Authors' contributions

XXZ contributed to the methodology and conducted the formal analysis. XXZ and NAS provided resources, while HHI managed data citations. XXZ prepared the original draft and led the review and editing process. HHI handled visualization, and NAS provided supervision. All authors have read and approved the published version.

Funding

No funding.

Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Sciedu Press.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

References

Abdelhalim, S. M. (2024). From traditional writing to digital multimodal composing: promoting high school EFL students' writing self-regulation and self-efficacy. *Computer Assisted Language Learning*. 1-30. https://doi.org/10.1080/09588221.2024.2322148

Barthes, R. (1977). *Image-music-text*. London: Macmillan.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Chen, Q. Z. (2007). Cognitive Load Theory and Its Development. *Modern Educational Technology*, *9*. https://doi:10.3969/j.issn.1009-8097.2007.09.003

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: Sage

Dziemianko, A. (2024). Pictures in Online Dictionaries: Shall We See Them? *GEMA Online Journal of Language Studies*, *24*(2). https://10.17576/gema-2024-2402-03

Fu, S. (2021). Chinese EFL University Students' Self-Reported Use of Vocabulary Learning Strategies. *English Language Teaching*, *14*(12), 117-125. https://doi.org/10.5539/elt.v14n12p117

Galatsopoulou, F., Kenterelidou, C., Kotsakis, R., & Matsiola, M. (2022). Examining students' perceptions towards video-based and video-assisted active learning scenarios in journalism and communication courses. *Education Sciences*, *12*(2), 74. https://doi.org/10.3390/educsci12020074

Ginting, D., Sulistyo, T., Ismiyani, N., Sembiring, M. J., Asfihana, R., Fahmi, A., & Mulyani, Y. S. (2022). English Language Teachers Multimedia Knowledge in Teaching Using Technology. *World Journal of English Language*, *12*(6). https://doi.org/10.5430/wjel.v12n6p184

Gu, Y. G. (2007). Analysis of Multimedia and Multimodal Learning. *Foreign Language Electronic Teaching*. https://doi.org/10.3969/j.issn.1001-5795.2007.02.001

Guo, W. (2024). Application of English Multi-Modal Reading Teaching Mode in the Context of "Internet Plus". *International Journal of Information and Communication Technology Education (IJICTE)*, *20*(1), 1-12. https://doi.org/10.4018/IJICTE.345932

He, C. (2023). The Application of Multimodal Teaching Approach to Reduce Foreign Language Anxiety. *Journal of Arts and Humanities*, *12*(4), 39-50. https://doi.org/10.18533/jah.v12i4.2338

Higuchi, K. (2016). *KH Coder 3 reference manual.* Kioto (Japan): Ritsumeikan University.

Ilmi, K. A., & Dewi, D. N. (2022). The Integration of multimodality in efl classes: Students' perception. *Jo-ELT (Journal of English Language Teaching*, *9*(2), 150-159. https://doi.org/10.33394/jo-elt.v9i2.6343

Jewitt, C. (Ed.). (2009). *The Routledge handbook of multimodal analysis*. London: Routledge.

Johnson, C. W., & Parry, D. C. (2022). Common features of qualitative inquiry. *In Fostering social justice through qualitative inquiry* (pp. 47-65). London: Routledge. https://doi.org/10.4324/9781003216575-3

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational researcher*, *33*(7), 14-26. https://doi.org/10.3102/0013189X033007014

Khasawneh, M. A. S. (2024). Adapting multisensory techniques for dyslexic learners in English language learning: A case study approach. *World Journal of English Language*, *14*(5). https://doi.org/10.5430/wjel.v14n5p553

Kress, G., & Van Leeuwen, T. (1996). *Reading images: The grammar of visual design*. London: Routledge.

Lei, Q., & Zhang, C. (2024). Using multimodal resources to design EFL classroom lead-ins—A multimodal pedagogical stylistics perspective. *Linguistics and Education, 83*, 101338. https://doi.org/10.1016/j.linged.2024.101338

Li, C. (2024). A review of theories, pedagogies and vocabulary learning tasks of English vocabulary learning apps for Chinese EFL learners. *Journal of China Computer-Assisted Language Learning*. https://doi.org/10.1515/jccall-2023-0026

Li, M. (2020). Multimodal pedagogy in TESOL teacher education: Students' perspectives. *System, 94*, 102337. https://doi.org/10.1016/j.system.2020.102337

Li, R. (2021). Does game-based vocabulary learning APP influence Chinese EFL learners' vocabulary achievement, motivation, and self-confidence? *Sage Open, 11*(1), 21582440211003092. https://10.1177/21582440211003092 journals.sagepub.com/home/sg

Liu, S., & Reynolds, B. L. (2024). A systematic review of English-as-a-foreign-language vocabulary learning activities for primary school students. *International Review of Applied Linguistics in Language Teaching*. https://doi.org/10.1515/iral-2023-0193

Longman Online Dictionary. (2024). The meaning of headset. Retrieved March 6, 2024, from https://www.ldoceonline.com/dictionary/headset

Lu, C., & Dang, T. N. Y. (2022). Vocabulary in EAP learning materials: What can we learn from teachers, learners, and corpora? *System, 106*, 102791. https://doi.org/10.1016/j.system.2022.102791

Ministry of Education of the People's Republic of China. (2023). *The Notice from the General Office of the Ministry of Education on the Third Batch of National First-Class Undergraduate Courses Accreditation*. Retrieved July 10, 2024, from http://www.moe.gov.cn/srcsite/A08/s7056/202312/t20231214_1094582.html

Osadcha, K. P., Osadchyi, V. V., & Spirin, O. (2021). Current state and development trends of e-learning in China. *Information Technologies and Learning Tools, 5*(85). https://doi.org/10.33407/itlt.v85i5.4399

Schrepp, M. (2015). User experience questionnaire handbook. *All you need to know to apply the UEQ successfully in your project*, 50-52.

Shi, L., Muhammad Umer, A., & Shi, Y. (2023). Utilizing AI models to optimize blended teaching effectiveness in college-level English education. *Cogent Education, 10*(2), 2282804. https://doi.org/10.1080/2331186X.2023.2282804

United Nations Educational, Scientific and Cultural Organization (UNESCO). (2023). *2023 GEM Report: Technology in education*. Retrieved January 10, 2024, from https://unesdoc.unesco.org/ark:/48223/pf0000386165

Wu, S. (2020). Multimodal approach to teaching English in higher education. *Journal of Contemporary Educational Research, 4*(7). https://doi.org/10.26689/jcer.v4i7.1374

Yan, Y. (2024). Application of Multimodal Teaching in TESOL and its Impact on Learners' Language Acquisition. *Arts, Culture and Language, 1*(7). https://doi.org/10.61173/crt53238

Yang, W., & Dai, W. (2011). Rote Memorization of Vocabulary and Vocabulary Development. *English Language Teaching, 4*(4), 61-64. https://doi.org/10.5539/elt.v4n4p61

Zhang, D. (2010). *An Initial Exploration of the Design and Modality Use in Multimodal Foreign Language Teaching*. Foreign Languages in China.

Zhang, D. L. (2015). *Multimodal Discourse Analysis Theory and Foreign Language Teaching.* Beijing: Higher Education Press.

Zhang, Y. (2021). Preparing teachers to work with English learners: A multimodal vocabulary mini-lesson project. *TESOL Journal, 12*(2), 569. https://doi.org/10.1002/tesj.569

Zheng, C., Zhang, T., Chen, X., Zhang, H., Wan, J., & Wu, B. (2024). Assessing learners' English public speaking anxiety with multimodal deep learning technologies. *Computer Assisted Language Learning*, 1-29. https://doi.org/10.1080/09588221.2024.2351129