

MULTIMODAL READING TEXTS AND EFL UNDERGRADUATES' ACADEMIC WRITING DEVELOPMENT: A QUALITATIVE CASE STUDY IN INDONESIA

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Abstract

The integration of reading and writing has long been recognized as a crucial component in second language learning. However, most previous studies have focused primarily on linear academic texts, with limited attention to the role of multimodal reading materials in supporting students' academic writing development. This study investigates how multimodal reading texts influence the academic writing development of English as a Foreign Language (EFL) students. Using a qualitative case study design, the study involved approximately 20–25 undergraduate students enrolled in an Academic Writing course in an English Language Education program. Data were collected through classroom observations, analysis of students' writing samples, and semi-structured interviews. The data were analyzed using thematic analysis and qualitative discourse analysis to examine patterns in students' perceptions and developments in their written texts. The findings reveal that exposure to multimodal texts such as infographics, visual essays, and digitally enriched articles enhances students' ability to generate ideas, organize arguments, expand lexical choices, and engage critically in academic writing. Students also demonstrate an improved capacity to synthesize information from multiple modes into coherent written arguments. These results suggest that integrating multimodal reading materials into writing instruction can effectively support academic writing development in EFL contexts. However, the findings are limited to a single instructional setting and a relatively small participant group; therefore, caution should be exercised in generalizing the results. Nevertheless, the study provides transferable pedagogical insights for integrating multimodal reading and writing practices in higher education EFL classrooms.

Keywords: *multimodal reading, academic writing development, EFL students, qualitative case study, reading–writing relationship*

INTRODUCTION

Despite the growing presence of multimodal texts in contemporary learning environments, limited research has examined how multimodal reading materials influence the development of academic writing in English as a Foreign Language (EFL) higher education contexts, particularly in Indonesia. While students increasingly engage with texts that combine written language, visuals, and digital media, academic writing instruction in many EFL classrooms continues to rely primarily on traditional linear reading materials. As a result, little is known about how exposure to multimodal reading

resources may shape students' writing processes, including idea development, discourse organization, and engagement with academic arguments.

Academic writing is widely acknowledged as one of the most complex skills in EFL learning, particularly in higher education where students are expected to construct logically organized, coherent, and critically grounded texts (Hyland, 2022; Zhang & Plonsky, 2020). Producing effective academic writing requires not only linguistic accuracy but also the ability to synthesize information, develop arguments, and integrate multiple sources. However, many EFL students experience

persistent challenges in generating ideas, maintaining cohesion, expanding lexical variety, and organizing arguments effectively (Nguyen & Habók, 2021). These challenges highlight the importance of examining the relationship between reading input and writing output, as reading provides learners with conceptual knowledge, discourse models, and linguistic resources that shape their written production. Research consistently confirms the reciprocal relationship between reading and writing in second language literacy development (Graham, 2020; Lee & Schallert, 2022).

In contemporary educational contexts, the nature of reading has evolved due to technological advancements and digital literacy practices. Students are increasingly exposed to multimodal texts that integrate written language with images, visual design, hyperlinks, audio, and interactive elements. According to multimodality theory, meaning-making occurs through the interaction of multiple semiotic modes rather than through language alone (Kress, 2021). In EFL classrooms, multimodal materials such as infographics, digital articles, and video-based texts are becoming more common, reflecting broader shifts toward twenty-first-century literacy practices (Lim, 2021). Recent empirical studies suggest that multimodal instructional materials can enhance learners' engagement, comprehension, and critical thinking skills (Jewitt & Henriksen, 2022; Yi & Choi, 2021). These findings suggest that multimodal reading environments may provide richer cognitive input for language learning.

Research on reading-writing integration further indicates that meaningful reading exposure contributes positively to writing development, including improvements in fluency, vocabulary use, and rhetorical awareness (Sun & Wang, 2020; Teng, 2022). However, most existing studies focus on conventional print-based texts and rely

primarily on quantitative measures of writing performance. Consequently, there remains limited qualitative evidence explaining how students cognitively process multimodal reading texts and transform such input into academic writing. In particular, the ways in which multimodal reading influences higher-order writing processes such as argument development, idea synthesis, and textual organization remain insufficiently understood in EFL university contexts (Hafner & Ho, 2020; Jiang & Renandya, 2021).

Addressing this gap is particularly important in higher education, where students are increasingly required to interpret graphs, visual data, and multimedia sources alongside traditional academic texts. Understanding how students engage with multimodal reading materials may provide valuable insights into how academic writing skills can be supported more effectively in EFL contexts.

Responding to this need, the present study investigates how multimodal reading texts influence EFL students' academic writing development in an Indonesian higher education setting. Drawing on multimodality theory (Kress, 2021) and the reading-writing connection framework (Graham, 2020; Lee & Schallert, 2022), this qualitative case study explores how students interpret multimodal materials and how these interpretations shape their idea generation, organizational structure, lexical choices, and engagement in academic writing. By providing qualitative insights into both the cognitive and affective dimensions of students' writing experiences, this study contributes to the growing body of research on multimodal literacy in EFL higher education and offers pedagogical implications for integrating reading and writing instruction. The study explores how multimodal reading texts influence students' academic writing development, how students transform multimodal input into coherent academic texts, and how they perceive the role of

multimodal reading materials in supporting their writing processes.

METHOD

This study employed a qualitative case study design to explore how multimodal reading texts influence students' academic writing development in an English as a Foreign Language (EFL) higher education context. A qualitative approach was chosen because it enables researchers to investigate complex educational phenomena within their natural settings and to capture participants' experiences, perceptions, and meaning-making processes (Creswell & Poth, 2018; Merriam & Tisdell, 2016). The study focused on a bounded case consisting of one cohort of undergraduate students enrolled in a single Academic Writing course within an English Education program at a private university in Indonesia. The case was bounded by the instructional context, the specific group of students, and the instructional period during which multimodal reading materials were integrated into classroom activities. The study was conducted over a four-week instructional cycle in which multimodal reading texts were systematically incorporated into writing preparation tasks. A case study design was considered appropriate because it allows for an in-depth exploration of instructional practices, students' engagement with multimodal texts, and the processes through which reading input is transformed into written output (Yin, 2018). This qualitative orientation also aligns with the theoretical framework of multimodality, which emphasizes meaning construction across multiple semiotic modes and requires interpretive analysis rather than purely numerical measurement (Kress, 2021).

The study was conducted in an undergraduate English Education program at a private higher education institution in Indonesia. The participants consisted of 23 second-year undergraduate students enrolled in an Academic Writing course

during the 2024/2025 academic year. The students were between 19 and 21 years old and had previously completed foundational courses in paragraph writing and basic academic reading. Although they had experience with conventional reading-to-write tasks using printed academic texts, they had limited prior exposure to multimodal reading materials such as infographics, visually structured essays, or video-supported texts in writing instruction.

Purposive sampling was used to select this cohort because the class was directly involved in an instructional design that integrated multimodal reading texts into academic writing preparation activities. Purposive sampling is commonly used in qualitative research when participants are selected based on their relevance to the research objectives and their direct experience with the phenomenon under investigation (Palinkas et al., 2015). The selected class therefore provided a suitable context for examining how students interact with multimodal reading materials and how such interactions influence their writing development.

The instructional intervention was conducted over four weeks as part of regular classroom instruction in the Academic Writing course. During this period, multimodal reading texts were integrated into pre-writing and reading-to-write activities designed to support students' essay development. The multimodal materials included digital articles containing embedded visuals and charts, infographic-based texts presenting statistical information, short video-based texts accompanied by transcripts, and visually structured argumentative essays combining written explanations with graphical elements.

Each instructional session lasted approximately 90 minutes and followed a structured sequence of activities. The first stage involved guided reading, during which students analyzed the multimodal

texts to identify key ideas, visual representations of information, and argumentative structures. In the second stage, students participated in small-group discussions to interpret the relationships between textual and visual elements and to evaluate how these modes contributed to meaning-making. The third stage focused on synthesis activities in which students summarized and organized information from the multimodal texts in preparation for writing. In the final stage, students produced short academic essays or argumentative paragraphs based on the themes and sources presented in the multimodal materials. These written assignments served both as learning activities and as data for analyzing changes in students' writing development.

The instructional design was informed by the reading-to-write framework, which emphasizes the role of reading input as scaffolding for writing production (Grabe & Zhang, 2016; Teng, 2022). By integrating multimodal texts into the pre-writing stage, the intervention aimed to stimulate idea generation, provide rhetorical models, and encourage students to synthesize information across different semiotic modes. Data were collected using multiple qualitative instruments to ensure methodological triangulation and enhance the credibility of the findings (Creswell & Poth, 2018). Classroom observations were conducted throughout the instructional period to document how students interacted with multimodal texts and how the instructor facilitated reading-to-write activities. Detailed field notes were recorded during each session to capture patterns of student engagement, classroom discussions, and instructional strategies related to multimodal reading tasks. Students' written artifacts were also collected as primary data sources. These artifacts included writing samples produced before and after the instructional intervention. The writing texts were examined to identify developments in idea organization, coherence, lexical variety,

and argument structure following exposure to multimodal reading materials. In addition, semi-structured interviews were conducted with eight volunteer participants selected from the class to gain deeper insights into students' experiences and perceptions of using multimodal reading materials in academic writing tasks. The interviews lasted approximately 20–30 minutes and focused on students' strategies for interpreting multimodal texts, their experiences during the writing process, and their perceptions of how multimodal materials supported their writing development. Semi-structured interviews allow researchers to explore participants' perspectives while maintaining flexibility to probe emerging themes (Braun & Clarke, 2021).

The data were analyzed using thematic analysis combined with qualitative discourse analysis. Thematic analysis was applied to classroom observation notes and interview transcripts to identify recurring patterns related to students' experiences with multimodal reading and their writing development. The analysis followed the six-phase framework proposed by Braun and Clarke (2021), which includes familiarization with the data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the analytical report. Initial coding was conducted inductively by identifying meaningful segments of data related to students' engagement with multimodal texts, strategies for interpreting visual and textual information, and perceived influences on writing development. These codes were subsequently grouped into broader themes representing key patterns in the data. Students' written texts were analyzed using qualitative discourse analysis to examine structural organization, cohesion, argumentation patterns, and lexical richness. The analysis focused on how students incorporated ideas from multimodal sources into their essays and how visual and textual

information influenced the structure of their written arguments. Rather than relying solely on quantitative scoring, the analysis emphasized interpretive examination of textual features such as thesis clarity, logical progression of ideas, integration of supporting evidence, and lexical variation.

Triangulation was implemented by comparing findings from classroom observations, students' writing artifacts, and interview data. This cross-source comparison allowed the researcher to validate emerging themes and to ensure that interpretations were supported by multiple forms of evidence. Through this analytic process, the study sought to provide a comprehensive understanding of how multimodal reading experiences contribute to the development of EFL students' academic writing.

FINDINGS

This study explored how multimodal reading texts influenced

students' academic writing development in an EFL context. Drawing on thematic analysis of interview data, classroom observations, and students' writing artifacts, four major themes emerged. These themes reflect the multidimensional impact of multimodal input on students' cognitive processing, structural writing competence, literacy integration skills, and affective engagement during academic writing tasks.

The findings suggest that multimodal reading materials functioned not merely as supplementary instructional resources but as pedagogical scaffolds that supported students' transition from comprehension to academic text production. The interaction between visual, textual, and audiovisual elements appeared to enhance conceptual understanding, discourse organization, and students' confidence in writing tasks. The four major themes identified through the analysis are summarized in Table 1.

Table 1. Overview of Emergent Themes in Multimodal Reading and Academic Writing Development

Theme	Core Focus	Impact Dimension
Enhanced Idea Generation Through Multimodal Input	Expansion and elaboration of ideas	Cognitive
Improvement in Academic Text Organization	Structural clarity and coherence	Structural
Strengthened Reading-to-Writing Connection	Integration and transformation of sources	Literacy
Increased Motivation and Writing Confidence	Engagement and self-efficacy	Affective

These themes were interconnected rather than isolated. Improved comprehension stimulated idea generation; clearer conceptual understanding supported better organization; strengthened reading–writing integration enhanced academic argumentation; and increased engagement encouraged sustained writing effort.

A dominant finding of this study was the improvement in students' ability to generate and elaborate ideas after engaging with multimodal reading texts. Students reported that the integration of images, charts, infographics, and explanatory

videos helped clarify abstract concepts and stimulated deeper thinking before writing.

Analysis of students' writing artifacts revealed noticeable differences between pre-intervention and post-intervention drafts. Early drafts often contained brief arguments with minimal elaboration and limited supporting evidence. In contrast, post-intervention drafts demonstrated richer explanations and more detailed examples supporting students' arguments. A comparison of these writing characteristics is presented in Table 2.

Table 2. Comparison of Students' Idea Development Before and After Multimodal Reading Exposure

Aspect	Pre-Intervention Drafts	Post-Intervention Drafts
Length of Paragraphs	Short, 3–4 sentences	Longer, 6–8 sentences
Idea Elaboration	Limited explanation	Detailed explanation with examples
Supporting Evidence	Rarely included	Frequently referenced visual/textual data
Argument Clarity	General statements	More specific and analytical arguments

Interview data further supported this pattern. One participant explained:

“The infographic helps me understand the topic clearly. When I write, I can explain each point because I already see the example in the picture.” (*Participant S7, interview*)

Another participant similarly stated:

“The video makes the issue more real. I get more ideas to support my opinion.” (*Participant S12, interview*)

These statements indicate that multimodal texts functioned as cognitive stimuli that activated background knowledge and facilitated conceptual mapping. Classroom observation notes also revealed that students spent more time discussing ideas during pre-writing activities when multimodal materials were introduced. For example, students frequently referred to visual elements while explaining arguments during group discussions. This triangulation of interview responses, observation data, and writing artifacts suggests that multimodal input enriched the ideational stage of the writing process.

In summary, multimodal reading texts supported students' idea generation by

providing visual and contextual cues that stimulated deeper conceptual understanding. This finding directly addresses the first research question concerning how multimodal reading texts influence students' academic writing development.

The second theme highlights structural improvements in students' academic writing. Multimodal reading texts appeared to function as implicit models of organization. Many multimodal materials presented information hierarchically through headings, segmented arguments, and visual sequencing, which students later mirrored in their essays.

Before the intervention, many students' essays lacked clear thesis statements and coherent paragraph transitions. Topic sentences were sometimes absent, and ideas were presented in fragmented sequences. After exposure to multimodal texts, however, students' essays demonstrated clearer argumentative progression and more logical paragraph structure. These structural changes are summarized in Table 3.

Table 3 Changes in Students' Academic Text Organization

Organizational Feature	Pre-Intervention	Post-Intervention
Thesis Statement	Implicit or unclear	Explicit and focused
Topic Sentences	Inconsistent	Clear and aligned with thesis
Coherence Devices	Minimal transitions	Use of connectors and logical markers
Paragraph Unity	Ideas mixed	One main idea per paragraph

Interview data confirmed that students consciously adopted structural patterns from multimodal texts. One participant explained: “The infographic

shows the main idea first and then the explanation. I tried to follow that pattern when I wrote my essay.” (*Participant S5, interview*)

Classroom observations also indicated that students frequently revisited multimodal texts during drafting activities to examine how information was organized. This suggests that multimodal materials functioned not only as sources of content but also as discourse templates guiding academic text organization.

Overall, these findings indicate that multimodal texts served as structural models that helped students develop clearer academic organization. This outcome further supports the first research question regarding the influence of multimodal reading on academic writing development.

Another important finding concerns the development of students' reading-to-writing integration skills. Students demonstrated improved ability to extract relevant information from multimodal texts and transform it into academically appropriate written discourse.

Early writing drafts showed that some students relied heavily on copying sentences from reading materials. However, post-intervention drafts revealed more frequent paraphrasing, summarizing, and synthesis of information from multiple modes, including textual and visual sources. These changes in integration strategies are summarized in Table 4.

Table 4. Development of Reading-to-Writing Integration Strategies

Strategy	Pre-Intervention	Post-Intervention
Direct Copying	Common	Rare
Paraphrasing	Limited	Frequent
Summarizing Key Points	Minimal	Structured and concise
Referring to Visual Data	Absent	Descriptive integration ("The chart shows...")

One student reflected: "Before, I just rewrite sentences from the text. Now I try to combine information from picture and text, then explain it using my own words." This indicates a shift from surface-level reproduction to deeper transformation of knowledge. Students began to treat multimodal texts as informational resources rather than templates for copying. Additionally, students demonstrated increased awareness of academic conventions, including referencing visual evidence in argumentative writing. The ability to translate visual data into textual explanation suggests improved multimodal literacy and academic discourse competence.

One participant reflected on this shift: "Before, I usually copied sentences from the reading text. Now I try to combine

information from the picture and the text and explain it using my own words." (*Participant S9, interview*)

Analysis of students' essays also showed that some students referenced visual evidence, such as statistics presented in infographics, when constructing their arguments. This suggests that students increasingly treated multimodal texts as informational resources rather than templates for copying.

Overall, these findings indicate that students began to transform multimodal input into coherent academic arguments, demonstrating improved literacy integration skills. This directly addresses the second research question concerning how students convert multimodal input into academic writing.

Table 5. Affective Impact of Multimodal Reading

Affective Indicator	Observation
Writing Anxiety	Decreased
Classroom Participation	Increased
Confidence in Drafting	Improved
Perceived Writing Difficulty	Reduced

The fourth theme concerns the affective impact of multimodal reading materials. Participants consistently reported higher engagement and reduced anxiety when working with multimodal texts. Traditional academic readings were often described by students as difficult and overwhelming. In contrast, multimodal materials were perceived as more accessible and engaging. One participant stated: “When there are videos and pictures, I feel more interested. Writing is not scary anymore.” (*Participant S3, interview*)

Another participant explained: “I feel more confident because I understand the topic better before I start writing.” (*Participant S11, interview*). Observation data also confirmed increased classroom participation during multimodal sessions. Students were more active in discussions, asked clarification questions, and demonstrated greater readiness to begin writing tasks.

These findings suggest that multimodal reading texts fostered positive emotional engagement, which in turn supported sustained cognitive effort in writing activities. This theme contributes to answering the third research question concerning students’ perceptions of the role of multimodal reading materials in supporting their writing processes.

In summary, the findings demonstrate that multimodal reading texts exerted a multidimensional impact on students’ academic writing development. The integration of visual, textual, and audiovisual elements enhanced idea generation, improved structural organization, strengthened reading-to-writing integration skills, and increased motivation and confidence. Importantly, these dimensions were interconnected. Enhanced comprehension facilitated richer idea development; improved idea clarity supported better organization; strengthened integration skills contributed to academic argumentation; and increased motivation sustained writing engagement. The results

indicate that multimodal reading texts function as cognitive, structural, literacy, and affective scaffolds in EFL academic writing contexts. Their integration into writing instruction appears to foster holistic academic literacy development rather than isolated skill improvement.

DISCUSSION

This study investigated the impact of multimodal reading texts on students’ academic writing development in an EFL context. The findings revealed that multimodal input significantly influenced students’ idea generation, text organization, reading-to-writing integration skills, and affective engagement. These findings extend current understandings of the reading–writing relationship and support multimodality theory within academic literacy development. The first major finding indicates that multimodal reading texts enhanced students’ idea generation and content elaboration. Students produced longer, more analytical, and better-supported arguments in their post-intervention drafts. This suggests that multimodal texts functioned as cognitive scaffolds that facilitated deeper conceptual processing.

From a theoretical perspective, this finding aligns with social semiotic views of multimodality proposed by Kress (2021), which emphasize that meaning is constructed through the interaction of multiple semiotic resources. Visual and audiovisual elements reduce abstraction and make complex ideas more accessible. When students engaged with infographics, charts, and videos, they were not merely consuming information but constructing layered meanings across modes. This finding also supports Graham (2020), who argues that reading instruction enhances writing quality by strengthening conceptual understanding. In this study, multimodal reading appears to amplify this effect by diversifying the channels of comprehension. The integration of visual and textual stimuli likely reduced cognitive

overload and promoted schema activation, thereby enabling richer written production. Thus, multimodal reading does not simply increase comprehension; it enhances the ideational dimension of writing.

The improvement in thesis clarity, paragraph unity, and coherence suggests that multimodal texts also function as implicit structural models. Students internalized visual hierarchies and translated them into linear academic prose. This finding resonates with Hyland's (2022) view that academic writing is a socially situated practice shaped by discourse conventions. Multimodal texts often present information hierarchically through headings, segmentation, and visual emphasis, which mirrors academic rhetorical structures. When students repeatedly interacted with such materials, they appeared to adopt similar organizational patterns in their essays. Moreover, Jewitt and Henriksen (2022) emphasize that multimodal design reflects meaning-making choices. Students in this study seemed to transfer these design principles into textual organization, demonstrating that multimodal literacy can influence conventional academic writing. This finding contributes to EFL pedagogy by suggesting that exposure to well-designed multimodal texts can indirectly teach discourse structure without explicit structural drills.

The third finding highlights a strengthened reading-to-writing connection. Students shifted from copying textual content to paraphrasing, summarizing, and synthesizing information across modes. This supports the reciprocal model of reading and writing proposed by Lee and Schallert (2022), which suggests that reading comprehension and writing production develop interdependently. In this study, multimodal input appeared to intensify this reciprocity by requiring students to transform visual and audiovisual data into a textual explanation. Similarly, Sun and Wang (2020) argue that reading-to-write instruction enhances

academic writing performance when students actively process and transform source information. The present findings extend this argument by demonstrating that transformation across modes (e.g., image-to-text explanation) may deepen literacy integration skills.

Importantly, students demonstrated increased awareness of academic conventions, including referencing visual evidence. This reflects an emerging multimodal academic literacy competence, which aligns with Hafner and Ho's (2020) argument that digital multimodal composing expands the boundaries of second language writing research. Thus, multimodal reading appears to strengthen not only comprehension but also knowledge transformation and academic discourse practices. Beyond cognitive and structural dimensions, the findings revealed increased motivation and writing confidence. Students described multimodal materials as more engaging and less intimidating than traditional dense academic texts. This aligns with Jiang and Renandya (2021), who note that affective barriers often hinder academic literacy development in EFL settings. By making input more accessible and visually engaging, multimodal texts may reduce anxiety and enhance self-efficacy.

Nguyen and Habók (2021) also emphasize the role of strategic confidence in writing development. When students feel that they understand a topic thoroughly, they are more willing to take risks in argumentation and elaboration. The present study suggests that multimodal reading supports this confidence-building process. Therefore, multimodal input contributes to writing development not only cognitively but also emotionally an often an underexplored dimension in EFL academic writing research.

The findings support multimodality theory (Kress, 2021) by demonstrating that meaning-making across modes can facilitate linguistic production. They also reinforce the reading-writing reciprocity

framework (Lee & Schallert, 2022; Graham, 2020) by showing that enriched input enhances written output. Importantly, this study extends previous research (e.g., Teng, 2022; Sun & Wang, 2020) by demonstrating that multimodal reading, rather than solely extensive textual reading, can significantly influence academic writing development. The study suggests that multimodal literacy should be integrated into academic writing pedagogy as a foundational rather than supplementary component.

From a pedagogical perspective, the findings indicate that EFL writing instruction should incorporate systematically designed multimodal reading materials, such as: Infographics presenting structured arguments, Short explanatory videos with academic content, Visual data representations for argumentative writing, and Interactive digital texts. Teachers may also encourage students to explicitly analyze how multimodal texts organize ideas before drafting their essays. This could enhance both structural awareness and idea development. Furthermore, integrating multimodal reading may serve as a bridge between digital literacy practices and formal academic writing instruction. In sum, this study demonstrates that multimodal reading texts exert a holistic impact on academic writing development. They function as cognitive scaffolds, structural models, literacy integrators, and affective motivators. The interplay of these dimensions suggests that multimodality is not merely a technological enhancement but a transformative pedagogical approach in EFL academic literacy instruction.

CONCLUSION

This study examined the impact of multimodal reading texts on students' academic writing development in an EFL higher education context. The findings demonstrate that multimodal input contributes significantly to writing development across four interconnected dimensions: idea generation, academic

organization, reading-to-writing integration, and affective engagement. First, multimodal reading enhanced students' ability to generate and elaborate ideas. The integration of visual, textual, and audiovisual elements facilitated deeper conceptual understanding, which was reflected in richer and more analytical written production. Second, students demonstrated improved structural organization in their academic texts, including clearer thesis statements, more coherent paragraph development, and stronger logical progression of arguments. Multimodal texts appeared to function as implicit organizational models that students internalized and applied in their own writing. Third, the findings indicate a strengthened reading-to-writing connection. Students gradually shifted from surface-level copying toward more sophisticated strategies such as paraphrasing, summarizing, and synthesizing information across multiple modes. This suggests that multimodal literacy practices can encourage knowledge transformation rather than simple textual reproduction. Finally, multimodal reading materials positively influenced students' motivation and writing confidence. By reducing cognitive overload and increasing engagement with the topic, multimodal texts supported not only cognitive development but also students' affective readiness to engage in academic writing tasks.

These findings have several pedagogical implications for instructors and program developers in EFL higher education. For instructors, integrating multimodal reading materials into writing instruction can support students' idea development and provide structural models that facilitate the organization of academic arguments. Teachers may incorporate infographics, visual essays, video-based texts, and digitally enriched articles into pre-writing activities to stimulate discussion and encourage deeper engagement with course topics.

Additionally, guided reading-to-write tasks can help students learn how to synthesize information across textual and visual modes. For program developers, the findings suggest the importance of incorporating multimodal literacy into academic writing curricula. Curriculum designers may consider integrating multimodal analysis activities, digital reading tasks, and visual interpretation exercises as part of writing instruction to better reflect contemporary literacy practices in higher education.

Despite these contributions, this study has several limitations that should be acknowledged. The research was conducted within a single course and involved a relatively small group of participants in one institutional context. As a result, the findings should be interpreted with caution and may not be generalizable to all EFL learning environments. Future research may extend this study in several directions. Longitudinal studies could investigate the long-term impact of multimodal reading practices on students' academic writing development. Further research may also examine the role of multimodal literacy across different academic disciplines where students interact with diverse forms of visual and textual information. In addition, studies involving larger and more diverse participant groups would help strengthen the generalizability of the findings. Finally, mixed-methods approaches combining qualitative insights with quantitative measures of writing development may provide a more comprehensive understanding of how multimodal reading influences academic literacy development in EFL contexts. Overall, the study highlights the importance of recognizing multimodal reading as an integral component of academic writing pedagogy. Integrating multimodal literacy practices into writing instruction has the potential to promote holistic academic literacy development that encompasses cognitive, structural, and affective dimensions of

learning.

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