
| RESEARCH ARTICLE

Academic Vocabulary in EFL Higher Education: A Narrative Review of Its Role in Academic Literacy and Disciplinary Participation

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| ABSTRACT

Academic vocabulary has traditionally been conceptualized as a set of high-frequency lexical items that support comprehension of academic texts. While this perspective has informed influential pedagogical resources such as the Academic Word List and the Academic Vocabulary List, it provides only a partial explanation of how vocabulary contributes to learning in higher education. Research on academic vocabulary remains dispersed across corpus linguistics, vocabulary acquisition, English for Academic Purposes (EAP), academic literacy, reading research, and disciplinary discourse, with relatively limited integration of these complementary perspectives. This narrative review critically synthesizes scholarship from these traditions to reconsider the role of academic vocabulary in English as a Foreign Language (EFL) higher education. Rather than evaluating vocabulary as an isolated linguistic construct, the review examines its evolving conceptualization, its relationship with academic reading, writing, and disciplinary discourse, the challenges experienced by EFL university students, and the evidence supporting contemporary instructional approaches. The synthesis demonstrates that academic vocabulary is best understood not as a fixed inventory of words but as a dynamic linguistic resource through which students interpret disciplinary knowledge, construct arguments, negotiate meaning, and participate in academic communities. At the same time, the review identifies important limitations in the existing literature, such as the long-term relationship between vocabulary development and academic participation. It argues that effective vocabulary instruction cannot be separated from broader academic literacy practices and is most successful when integrated with authentic reading, writing, discussion, and disciplinary inquiry. By synthesizing evidence across previously disconnected research traditions, this review advances a more comprehensive understanding of academic vocabulary as both a linguistic and educational resource and proposes a shift from teaching academic words in isolation towards supporting students' progressive participation in the discourse practices of higher education.

| KEYWORDS

Academic vocabulary; English as a Foreign Language (EFL); English for Academic Purposes (EAP); academic literacy; disciplinary discourse; higher education; narrative review.

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1. Introduction

The development of academic vocabulary has long been regarded as fundamental to success in higher education because it underpins students' ability to access disciplinary knowledge, interpret scholarly texts, construct arguments, and participate in academic communication. For learners of English as a Foreign Language (EFL), however, acquiring academic vocabulary presents challenges that extend well beyond learning unfamiliar lexical items. Success in university requires students to appropriate the linguistic conventions through which disciplines organize, evaluate, and communicate knowledge, making vocabulary development inseparable from broader processes of academic literacy and disciplinary participation.

Although the importance of academic vocabulary is widely acknowledged, how it should be conceptualized remains a matter of continuing debate. Much of the earlier literature approached academic vocabulary as a relatively stable body of lexical items that occur frequently across academic texts, an approach exemplified by Coxhead's (2000) Academic Word List (AWL) and later refined by Gardner and Davies' (2014) Academic Vocabulary List (AVL). These corpus-based resources have undoubtedly transformed English for Academic Purposes (EAP) by providing empirically grounded frameworks for curriculum design, materials development, and vocabulary assessment. Their pedagogical value remains substantial because they identify lexical items that learners are likely to encounter across a wide range of academic contexts.

Nevertheless, the theoretical adequacy of frequency-based approaches has become increasingly contested. Corpus frequency identifies words that are common across academic texts, but it cannot explain how those words acquire discipline-specific meanings or perform different rhetorical functions within diverse academic communities. Hyland and Tse (2007), for example, argue that many supposedly «general» academic words vary considerably in their semantic, collocational, and rhetorical behaviour across disciplines, calling into question the assumption that mastery of a universal academic vocabulary necessarily prepares students for disciplinary communication. The debate, therefore, is not simply about the superiority of one vocabulary list over another; it reflects fundamentally different understandings of what academic vocabulary represents, as a transferable lexical inventory or as a context-dependent resource embedded within disciplinary discourse.

At the same time, scholarship from academic literacy, disciplinary discourse, and genre studies has increasingly challenged the notion that vocabulary can be understood independently of the social practices through which knowledge is constructed. From this perspective, students do not merely acquire academic vocabulary before participating in university learning; rather, lexical knowledge develops through participation in reading, writing, discussion, and other disciplinary practices (Lea & Street, 1998; Hyland, 2008). This perspective significantly broadens the construct of academic vocabulary by emphasizing its communicative, epistemological, and social dimensions. However, despite its conceptual richness, it has often developed separately from corpus-based vocabulary research, resulting in parallel rather than integrated explanations of academic vocabulary development.

This fragmentation represents an important limitation in the existing literature. Corpus linguistic studies have generated robust evidence regarding lexical frequency, coverage, and phraseological patterns, yet they offer relatively limited explanations of how learners appropriate vocabulary during authentic disciplinary engagement. Conversely, research within academic literacy provides sophisticated accounts of disciplinary participation but frequently assumes rather than explicitly examines vocabulary development. Consequently, existing scholarship offers complementary rather than competing perspectives, but these perspectives have rarely been synthesized into a coherent understanding of academic vocabulary in higher education.

A further limitation concerns the evidence base underpinning instructional recommendations. While numerous studies report positive effects of explicit vocabulary instruction, extensive reading, corpus-informed pedagogy, and strategy training, much of this evidence derives from relatively short-term intervention studies that measure vocabulary gains through receptive tests. Comparatively little is known about how different instructional approaches interact across entire university programmes, how receptive knowledge develops into productive disciplinary language, or how vocabulary growth influences broader educational outcomes such as academic identity, disciplinary engagement, and sustained participation in scholarly communities. Consequently, many pedagogical recommendations remain stronger in principle than in longitudinal empirical support.

Against this background, the present narrative review seeks to move beyond evaluating individual vocabulary lists or instructional techniques by synthesizing scholarship from corpus linguistics, vocabulary acquisition, English for Academic Purposes, academic literacy, disciplinary discourse, and reading and writing research. Its principal contribution lies in bringing these traditions into dialogue to argue that academic vocabulary is most productively understood not as a static lexical inventory but as a dynamic linguistic resource that develops through participation in disciplinary discourse. This perspective neither dismisses corpus-based approaches nor replaces vocabulary research with academic literacy theory. Rather, it argues that each explains different dimensions of academic vocabulary and that a more comprehensive account emerges when lexical description is integrated with disciplinary and discourse-oriented perspectives.

Accordingly, this review addresses four interrelated questions:

- 1-How has the conceptualization of academic vocabulary evolved across different research traditions?
- 2-How does academic vocabulary contribute to academic reading, writing, and disciplinary participation?
- 3-What challenges continue to constrain academic vocabulary development among EFL university students?
- 4-What does current evidence suggest about effective approaches to supporting academic vocabulary development in higher education, and where do important gaps remain?

By critically synthesizing these questions, the review argues that understanding academic vocabulary as a resource for academic participation provides a more comprehensive explanation of its role in higher education than perspectives that emphasize lexical frequency or vocabulary instruction alone. In doing so, it offers a framework for interpreting existing research while identifying conceptual and methodological directions for future investigation.

2. Defining Academic Vocabulary

Despite more than three decades of sustained investigation, academic vocabulary remains a concept that is more widely used than consistently defined. Although there is broad agreement that it encompasses the lexical resources required for successful participation in higher education, scholars continue to disagree over its defining characteristics, its boundaries, and its relationship to disciplinary language. These conceptual differences are not merely terminological; they shape how vocabulary is identified, assessed, and taught within English for Academic Purposes (EAP). Consequently, defining academic vocabulary remains one of the central theoretical challenges in the field.

Early conceptualizations were largely informed by corpus linguistics and lexical frequency. From this perspective, academic vocabulary comprises words that occur frequently across academic texts while remaining relatively uncommon in general English (Nation, 2001, 2013). This approach provided an objective and empirically defensible basis for identifying vocabulary likely to support comprehension across disciplines, culminating in Coxhead's (2000) Academic Word List (AWL). The influence of the AWL has been considerable, offering educators a practical framework for curriculum design, materials development, and vocabulary assessment that remains widely used more than two decades after its publication.

Yet the very success of the AWL arguably encouraged an oversimplified understanding of academic vocabulary. Its widespread adoption sometimes implied that mastery of a relatively stable list of word families would provide learners with the lexical resources needed for university study. Subsequent research has shown that this assumption is only partially supported. While frequency identifies vocabulary that learners are likely to encounter, it does not explain how words function within academic communication or how their meanings shift across disciplinary contexts. In this respect, frequency should be viewed as a useful criterion for lexical selection rather than a comprehensive explanation of academic language.

The strongest challenge to universal vocabulary lists has come from research emphasizing disciplinary variation. Hyland and Tse (2007) argue that words appearing frequently across academic corpora often perform markedly different semantic and rhetorical functions in different disciplines. Terms such as analysis, theory, model, or framework may occur in engineering, education, economics, and applied linguistics alike, yet their meanings, collocational patterns, and epistemological significance differ substantially. These findings question the assumption that academic vocabulary constitutes a homogeneous lexical category transferable across disciplines.

However, the disciplinary perspective also has limitations that are less frequently acknowledged. If academic vocabulary is regarded as entirely discipline-specific, the rationale for general EAP instruction becomes difficult to sustain. Students entering university require linguistic resources before they become fully immersed in disciplinary communities, and numerous corpus studies continue to demonstrate substantial lexical overlap across academic texts. Rather than invalidating frequency-based approaches, disciplinary research suggests that general academic vocabulary provides an important foundation whose meanings are progressively refined through disciplinary engagement. The debate, therefore, should not be framed as a choice between general and discipline-specific vocabulary, but as a question of how these dimensions interact during academic development.

This emerging perspective has encouraged a broader reconceptualization of academic vocabulary as a functional linguistic resource rather than a static lexical inventory. Contemporary scholarship increasingly emphasizes that vocabulary knowledge involves understanding how lexical choices contribute to constructing arguments, expressing evaluation, signalling relationships between ideas, and positioning knowledge within disciplinary discourse (Hyland, 2008; Schleppegrell, 2004). From this viewpoint, knowing a word extends beyond recognizing its dictionary meaning to understanding its grammatical behaviour, collocational preferences, register, semantic nuance, and rhetorical function. The shift reflects a broader movement in applied linguistics from viewing language primarily as a structural system toward understanding it as a resource for social and disciplinary communication.

Developments in corpus linguistics have simultaneously reinforced and complicated this reconceptualization. Gardner and Davies' (2014) Academic Vocabulary List (AVL) addressed several methodological limitations of the AWL by drawing on substantially larger corpora and adopting lemma-based rather than word-family criteria. These methodological refinements undoubtedly improved the empirical description of academic lexis. Nevertheless, they did not fully resolve the underlying conceptual question of what qualifies vocabulary as « academic ». More sophisticated corpus methods produce increasingly accurate descriptions of lexical distribution, but they cannot explain why particular lexical choices acquire disciplinary significance

or how learners appropriate them during academic participation. Consequently, advances in corpus methodology should be viewed as enhancing lexical description rather than resolving theoretical debates about the nature of academic vocabulary.

A further expansion of the construct has emerged through research on phraseology, which challenges another implicit assumption of earlier vocabulary research, that words function as independent units of meaning. Studies of lexical bundles, collocations, and formulaic sequences demonstrate that much academic communication depends on recurring multiword expressions that organize arguments, express evaluation, and establish textual cohesion (Biber et al., 2004; Hyland, 2008). This evidence suggests that competence in academic vocabulary cannot be adequately represented by knowledge of individual lexical items alone. Rather, effective participation in academic discourse requires mastery of conventional phraseological patterns that perform important rhetorical and disciplinary functions.

These perspectives indicate that academic vocabulary is best understood as a multidimensional construct situated at the intersection of lexical knowledge, discourse competence, and disciplinary literacy. Corpus-based approaches provide strong empirical evidence regarding lexical frequency and remain indispensable for identifying vocabulary worthy of pedagogical attention. Academic literacy and disciplinary discourse perspectives, by contrast, explain how those lexical resources acquire meaning through communicative practice. Neither perspective alone offers a sufficient account. Frequency-based approaches risk reducing academic language to lexical inventories, whereas purely discourse-oriented perspectives may underestimate the practical value of identifying shared academic vocabulary for novice learners. Their greatest explanatory power therefore lies in their complementarity rather than their opposition.

Accordingly, academic vocabulary should not be conceptualized as a fixed body of words that students acquire before entering disciplinary study, nor as knowledge that emerges only after disciplinary participation. Rather, it is a multifaceted construct that develops progressively through interaction between general academic lexical resources and increasingly specialized disciplinary practices. Viewing academic vocabulary in this way provides a more comprehensive theoretical foundation for understanding its contribution to academic reading, writing, and participation throughout university learning.

3. The Evolution of Academic Vocabulary Research

Research on academic vocabulary has undergone a substantial conceptual transformation over the past three decades. Although this evolution is often presented as a progression from lexical description to discourse-oriented perspectives, the development of the field is better understood as a process of theoretical expansion rather than replacement. Contemporary approaches have not rendered earlier corpus-based research obsolete; rather, they have revealed its explanatory boundaries while extending understanding of how vocabulary functions within academic learning. The central question has therefore shifted from which words students should learn to how lexical resources enable participation in the communicative practices of higher education.

The earliest phase of research was primarily motivated by a practical pedagogical concern: identifying vocabulary that would provide the greatest benefit to learners entering university. Corpus-based studies, most notably Coxhead's (2000) Academic Word List (AWL), addressed this need by demonstrating that a relatively limited number of word families accounted for a substantial proportion of academic texts across disciplines. This represented an important methodological advance because vocabulary selection became grounded in empirical evidence rather than intuition. The influence of this work extended well beyond vocabulary teaching, shaping curriculum design, textbook development, and language assessment internationally.

Nevertheless, the success of frequency-based approaches also exposed their conceptual limitations. Although lexical frequency effectively identifies words that occur in academic discourse, it offers only a descriptive account of language use. It cannot explain why particular lexical choices become meaningful within disciplinary communication, nor how students appropriate those resources as they engage with academic practices. Consequently, frequency-based research answered an important pedagogical question: what vocabulary is common? while leaving largely unresolved the equally important questions of how vocabulary functions and how it develops during university learning.

These limitations became increasingly apparent as corpus linguistic research expanded. Larger corpora and more sophisticated analytical techniques demonstrated considerable disciplinary variation in lexical use, challenging the assumption that academic language could be adequately represented through a single, general vocabulary list. Hyland and Tse (2007), for example, showed that many words traditionally classified as « general academic » perform different semantic and rhetorical functions across disciplinary communities. Their work did not undermine the pedagogical value of general academic vocabulary; rather, it demonstrated that lexical frequency alone cannot capture the contextual meanings through which academic communication operates.

Importantly, however, the growing emphasis on disciplinary specificity should not be interpreted as a rejection of earlier corpus-based research. Such an interpretation risks creating a false dichotomy between general and discipline-specific approaches. Evidence from corpus linguistics continues to demonstrate substantial lexical overlap across academic texts, particularly during

the early stages of university study when learners require broad academic language before engaging with specialized disciplinary discourse. The more convincing interpretation emerging from recent scholarship is therefore that general academic vocabulary provides a linguistic foundation whose meanings and functions become increasingly differentiated through disciplinary participation.

At approximately the same time, developments in academic literacy research introduced a more fundamental reconceptualization of language itself. Rather than treating vocabulary as an autonomous linguistic system, scholars working within academic literacies argued that language develops through participation in the social practices of higher education (Lea & Street, 1998; Lillis & Scott, 2007). This perspective reframed vocabulary from an object of instruction to a resource for meaning-making. Students were no longer viewed as acquiring vocabulary prior to academic study; instead, lexical knowledge was understood to emerge through reading disciplinary texts, constructing written arguments, participating in seminars, and engaging in scholarly dialogue.

This shift substantially broadened the explanatory scope of academic vocabulary research. Vocabulary became linked not only to language proficiency but also to disciplinary identity, epistemological practices, and academic socialization. Yet academic literacy research has also attracted criticism for providing comparatively limited linguistic accounts of vocabulary itself. While it offers compelling explanations of how language operates within academic communities, it often assumes lexical development rather than examining the mechanisms through which vocabulary knowledge is acquired. Consequently, corpus linguistics and academic literacy research should be viewed as addressing complementary rather than competing dimensions of academic vocabulary.

A further conceptual expansion emerged through research on phraseology. Studies of lexical bundles, collocations, and formulaic sequences challenged another implicit assumption underlying earlier vocabulary research, that said, academic communication could be understood primarily through individual lexical items (Biber et al., 2004; Hyland, 2008). Instead, evidence demonstrated that much academic discourse depends on recurrent multiword expressions that organize arguments, signal evaluation, establish cohesion, and communicate disciplinary conventions. This work reinforced the broader movement away from viewing vocabulary as isolated words toward understanding it as patterned language functioning within discourse.

These developments indicate that the field has become progressively more functionally oriented. Earlier research emphasized lexical description, whereas more recent scholarship seeks to explain the communicative, disciplinary, and rhetorical purposes that vocabulary serves. It is an evolution that reflects a broader shift across applied linguistics from structural descriptions of language toward explanations of language as social action. Importantly, however, the field has not reached complete theoretical convergence. Corpus linguistics continues to prioritize measurable lexical characteristics, while academic literacy research foregrounds disciplinary participation and meaning-making. These traditions often draw on different theoretical assumptions, methodological approaches, and definitions of academic vocabulary, meaning that the field remains conceptually pluralistic rather than unified.

It is a continuing plurality that represents both a challenge and an opportunity. On the one hand, differing conceptualizations make it difficult to develop a universally accepted definition of academic vocabulary or a single instructional model applicable across contexts. On the other hand, the coexistence of multiple perspectives offers a richer understanding than any individual approach could provide. Frequency-based studies explain which vocabulary learners are likely to encounter; corpus-informed research reveals how language is patterned; academic literacy explains how vocabulary contributes to disciplinary participation; and sociocultural perspectives illuminate how lexical competence develops through interaction. Viewed collectively, these traditions suggest that academic vocabulary is best understood as a dynamic linguistic resource whose educational significance emerges through participation in academic discourse.

The preceding discussion provides the conceptual foundation for the remainder of the review. If academic vocabulary develops through participation in disciplinary practices rather than through lexical accumulation alone, then its relationship with academic reading, writing, and disciplinary communication must be understood as reciprocal rather than sequential. The following sections therefore examine how vocabulary functions not simply as a prerequisite for academic literacy, but as one of its central mechanisms.

4. Academic Vocabulary and Academic Reading

Academic reading is widely regarded as the primary means through which university students engage with disciplinary knowledge. Unlike everyday reading, it requires learners not only to decode written language but also to interpret complex arguments, evaluate evidence, synthesize information across texts, and construct new conceptual understandings. Within EFL higher education, academic vocabulary has consistently been identified as a central determinant of this process because lexical knowledge mediates access to both disciplinary concepts and the rhetorical organization of scholarly discourse (Grabe, 2009;

Nation, 2013). Yet despite broad agreement regarding its importance, the precise nature of the relationship between vocabulary and reading comprehension remains less straightforward than is often assumed.

A substantial body of research identifies vocabulary knowledge as one of the strongest predictors of academic reading comprehension (Nation, 2001; Qian, 2002; Perfetti, 2007). Across diverse educational contexts, learners with broader and deeper vocabularies consistently demonstrate superior comprehension of academic texts. This relationship has frequently been interpreted as evidence that vocabulary functions as a prerequisite for successful reading. However, such interpretations should be treated cautiously, as much of the supporting evidence derives from correlational rather than causal research. Strong associations between vocabulary and comprehension do not necessarily establish that vocabulary alone drives reading success; instead, they suggest that lexical knowledge forms part of a broader network of linguistic and cognitive abilities that develop together.

Based on this distinction, researchers have moved beyond measuring vocabulary size toward examining the quality of lexical knowledge. Earlier studies tended to emphasize the number of words learners knew, whereas more recent research argues that vocabulary depth, including semantic precision, collocational awareness, morphological knowledge, and contextual flexibility, is a more powerful predictor of comprehension (Qian, 2002). Students may recognize the same lexical items yet differ substantially in how efficiently they integrate those words into broader textual interpretations. Consequently, academic reading depends not merely on lexical coverage but on the richness and accessibility of lexical representations.

The importance of lexical quality becomes particularly evident in disciplinary reading. Academic texts frequently employ familiar words in specialized ways, requiring readers to interpret meaning in relation to disciplinary conventions rather than general language use. Terms such as *framework*, *significant*, *critical*, or *approach* illustrate this challenge. Although these words are common across academic texts, their meanings are shaped by disciplinary epistemologies and rhetorical purposes. Such observations question approaches that conceptualize vocabulary primarily as stable lexical units independent of context. Instead, successful academic reading appears to require readers to integrate lexical knowledge with disciplinary understanding and discourse awareness.

Theoretical models of reading provide further insight into this relationship. Perfetti's (2007) Lexical Quality Hypothesis argues that efficient comprehension depends on rich lexical representations integrating orthographic, phonological, semantic, and syntactic knowledge. High-quality lexical representations reduce cognitive effort during word recognition, allowing readers to allocate greater attentional resources to higher-order processes such as inference, integration, and critical evaluation. The explanatory strength of this model lies in its ability to connect lexical processing with broader cognitive mechanisms of comprehension. Nevertheless, its emphasis on individual cognitive processing has been questioned for giving comparatively limited attention to the social and disciplinary contexts in which academic reading occurs. Readers do not process vocabulary in isolation; they interpret lexical choices within disciplinary communities that shape how knowledge is produced and communicated.

Similarly, Grabe's (2009) interactive model positions vocabulary as a necessary foundation for higher-order comprehension while emphasizing the interaction of lexical, syntactic, discourse, and strategic knowledge. Compared with earlier bottom-up models, this framework provides a more comprehensive account of reading by acknowledging the simultaneous contribution of multiple cognitive processes. Even so, it primarily conceptualizes reading as an individual cognitive activity. Academic literacy perspectives (e.g. Lea & Street, 1998) extend this view by arguing that comprehension also involves learning how disciplines construct arguments, evaluate evidence, and organize knowledge. From this perspective, vocabulary contributes to reading not only because it facilitates lexical access but because it enables learners to participate in disciplinary ways of thinking.

Another area of increasing consensus concerns the reciprocal relationship between vocabulary and reading. Vocabulary supports comprehension, while sustained engagement with academic texts simultaneously promotes vocabulary growth through repeated contextual encounters (Nagy, Herman, & Anderson, 1985; Nation, 2013). This reciprocal relationship is widely accepted, yet important questions remain unresolved. Researchers continue to debate the extent to which incidental vocabulary acquisition through reading alone can support the lexical demands of higher education, particularly in EFL contexts where learners may lack sufficient vocabulary to benefit fully from extensive reading. Stanovich's (1986) Matthew Effect offers one explanation by suggesting that proficient readers continue to expand their vocabularies through reading, whereas less proficient readers experience increasingly limited opportunities for lexical growth. Although this model has received substantial empirical support, it also implies that reading alone may reinforce existing inequalities unless accompanied by explicit pedagogical support.

On this basis, the review points towards a broader reconceptualization of vocabulary instruction. If comprehension depends solely on vocabulary size, instruction should prioritize lexical coverage. If, however, reading depends equally on lexical quality, disciplinary knowledge, inferential reasoning, and discourse awareness, then vocabulary instruction cannot be separated from broader academic literacy development. The accumulated evidence increasingly supports the latter interpretation. Guided reading, explicit

attention to lexical bundles and discourse markers, collaborative discussion, and opportunities to interpret disciplinary texts appear to foster both vocabulary development and higher-order comprehension more effectively than approaches centred exclusively on isolated word learning.

Despite substantial advances, several questions remain insufficiently addressed within the literature. Much existing research continues to evaluate vocabulary using standardized vocabulary tests while measuring reading through general comprehension assessments. Such designs reveal important statistical relationships but provide comparatively limited insight into how learners negotiate unfamiliar vocabulary while interpreting authentic disciplinary texts. Similarly, most evidence derives from cross-sectional studies, leaving relatively little understanding of how vocabulary and reading mutually influence one another throughout university study. Longitudinal and classroom-based investigations are therefore needed to clarify how lexical knowledge develops through sustained engagement with disciplinary reading practices.

Overall, the literature demonstrates that academic vocabulary is indispensable for academic reading, but its contribution extends far beyond facilitating word recognition. Vocabulary enables learners to interpret disciplinary concepts, recognize rhetorical relationships, evaluate scholarly arguments, and participate in the knowledge-building practices of higher education. Rather than functioning as an isolated linguistic variable, it operates within a broader network of cognitive, discourse, and disciplinary processes that collectively shape academic comprehension. Understanding this complexity provides a stronger foundation for examining how vocabulary similarly contributes to academic writing and disciplinary participation.

5. Academic Vocabulary and Academic Writing

Academic writing is widely recognised as one of the principal means through which knowledge is constructed, evaluated, and communicated within higher education. Consequently, vocabulary performs a far more complex role than providing labels for concepts or increasing lexical sophistication. It enables writers to organise arguments, establish logical relationships, express disciplinary reasoning, negotiate authorial stance, and position claims within existing scholarship. From this perspective, academic vocabulary functions not simply as a linguistic resource but as an epistemic resource that supports participation in disciplinary knowledge construction.

A substantial body of research has demonstrated a positive association between vocabulary knowledge and writing quality (Nation, 2013; Schmitt, 2014). Students with broader and deeper vocabularies generally produce texts that are judged to be more coherent, precise, and academically appropriate. However, the strength of this relationship should not be overstated. Much of the available evidence is correlational, making it difficult to determine whether vocabulary itself improves writing quality or whether more proficient writers simply possess richer lexical knowledge because of greater engagement with academic reading and writing. Vocabulary undoubtedly contributes to effective writing, but it operates alongside numerous interacting factors, including disciplinary knowledge, genre awareness, argumentation skills, and metacognitive control.

This complexity has prompted researchers to move beyond vocabulary size as the principal indicator of writing ability. Earlier studies often assumed that lexical sophistication could be measured through the use of low-frequency vocabulary. More recent scholarship, however, suggests that lexical appropriateness may be more important than lexical rarity. Effective academic writing depends not on using increasingly complex words but on selecting vocabulary that accurately conveys disciplinary meanings, fulfils rhetorical purposes, and reflects the conventions of particular academic communities. Consequently, lexical depth, which includes collocational knowledge, semantic precision, and contextual flexibility, appears to provide a more convincing explanation of writing quality than vocabulary breadth alone.

The importance of lexical quality becomes particularly evident in EFL higher education. Many learners possess sufficient vocabulary to describe ideas but lack the lexical resources needed to analyse, evaluate, or synthesise knowledge. As a result, their writing frequently remains descriptive despite an adequate understanding of disciplinary content. This observation challenges instructional approaches that equate vocabulary development with learning increasingly sophisticated words. Rather, academic writing requires students to appropriate the linguistic resources through which disciplines construct arguments, express evaluation, and negotiate knowledge claims (Hyland, 2008). Vocabulary therefore contributes to writing not only by expanding lexical repertoire but also by enabling increasingly disciplinary ways of thinking.

An important development in the literature has been the growing emphasis on the rhetorical functions of vocabulary. Academic arguments depend extensively on reporting verbs, evaluative adjectives, abstract nouns, hedging expressions, and discourse-organising language that establish relationships between evidence and claims. Verbs such as argue, demonstrate, suggest, and indicate, together with nouns such as framework, assumption, implication, and perspective, perform rhetorical functions that extend well beyond their lexical meanings. These linguistic resources allow writers to express varying degrees of certainty, position their work in relation to previous research, and construct disciplinary authority. Consequently, vocabulary knowledge increasingly appears inseparable from rhetorical competence.

Research on phraseology has further strengthened this perspective. Corpus-based studies (e.g. Biber et al., 2004; Hyland, 2008) demonstrate that experienced academic writers rely extensively on lexical bundles and recurrent phraseological patterns to organise discourse and fulfil disciplinary expectations. These findings challenge traditional word-based conceptions of vocabulary by showing that fluent academic writing depends as much on mastery of conventional multiword sequences as on individual lexical items. Nevertheless, the pedagogical implications remain contested. While corpus-informed instruction can enhance learners' awareness of disciplinary phraseology, concerns have been raised that excessive reliance on formulaic language may encourage imitation rather than genuine rhetorical flexibility. The challenge therefore lies in helping students appropriate phraseological resources while maintaining critical and contextually appropriate language use.

Another unresolved issue concerns the relationship between general academic vocabulary and disciplinary writing. Although general academic vocabulary provides an essential linguistic foundation, evidence increasingly suggests that successful academic writing requires progressive adaptation to disciplinary discourse (Hyland & Tse, 2007). Lexical choices that are valued in applied linguistics may be inappropriate in engineering, medicine, or economics because disciplines differ in how they construct evidence, express certainty, and communicate knowledge. This disciplinary variation questions assumptions that a single inventory of academic vocabulary can adequately prepare students for writing across university contexts. At the same time, the existence of considerable lexical overlap across disciplines indicates that general academic vocabulary remains an important starting point. The issue is therefore not whether vocabulary is general or discipline-specific, but how general lexical resources become increasingly specialised through disciplinary participation.

Academic literacy research offers a broader explanation for this developmental process. Rather than viewing writing as the application of linguistic skills, academic literacies scholars conceptualise it as participation in socially situated disciplinary practices (Lea & Street, 1998). That said, vocabulary develops through engagement with disciplinary reading, writing, feedback, and scholarly interaction rather than through isolated vocabulary instruction. This view has considerable explanatory power because it accounts for the contextual and social dimensions of writing. However, it has also been criticised for paying comparatively limited attention to the cognitive and lexical processes underlying language development. Consequently, cognitive and sociocultural perspectives should be regarded as complementary rather than competing accounts of vocabulary development.

These conceptual developments also expose limitations in much existing instructional research. Vocabulary teaching in many EFL contexts continues to emphasise isolated word learning despite growing evidence that productive vocabulary develops most effectively through meaningful writing. Drafting, revising, responding to feedback, and reformulating ideas require learners to retrieve, evaluate, and refine lexical choices repeatedly, thereby strengthening productive lexical knowledge. Writing should therefore be understood not merely as an outcome of vocabulary learning but as one of its principal mechanisms. This reciprocal relationship remains comparatively underexplored despite its potential significance for curriculum design. Thus, longitudinal research examining the interaction between vocabulary development, disciplinary expertise, and writing proficiency would substantially strengthen current understanding.

In light of these perspectives, academic vocabulary contributes to writing in ways that extend far beyond lexical sophistication. It enables writers to organise knowledge, construct arguments, negotiate disciplinary meanings, and participate in scholarly communication. At the same time, writing itself provides one of the richest contexts through which vocabulary becomes increasingly precise, flexible, and disciplinary appropriate. Academic vocabulary and academic writing should therefore be viewed as mutually constitutive processes rather than as separate dimensions of language learning. This reciprocal relationship provides an important foundation for understanding vocabulary as a resource for disciplinary participation.

6. Academic Vocabulary and Disciplinary Discourse

Perhaps the most significant conceptual development in academic vocabulary research has been the recognition that vocabulary cannot be understood independently of the disciplinary contexts in which it is used. Earlier research largely conceptualised academic vocabulary as a shared body of lexical items that students should master to succeed in higher education. While this perspective generated influential pedagogical resources and substantially advanced vocabulary instruction, it offered only a partial explanation of why vocabulary matters in university learning. Increasingly, research suggests that the educational significance of academic vocabulary lies less in the lexical items themselves than in their role in enabling participation in disciplinary ways of constructing and communicating knowledge.

This reconceptualisation reflects broader developments in applied linguistics, particularly the emergence of academic literacies and genre-based perspectives that view language as social practice rather than as an autonomous linguistic system (Lea & Street, 1998; Swales, 1990). Within these traditions, vocabulary is no longer regarded as a collection of words to be acquired before academic study begins. Instead, it is understood as one of the principal resources through which disciplinary communities define concepts, evaluate evidence, establish credibility, and negotiate knowledge claims. Learning academic vocabulary therefore entails more than expanding one's lexicon; it involves learning how language functions within particular epistemological traditions.

Although this perspective has substantially expanded current understandings of academic vocabulary, it also raises important theoretical questions. One implicit assumption within parts of the academic literacy literature is that disciplinary participation supersedes lexical knowledge as the primary explanatory construct. However, such an interpretation risks underestimating the continuing importance of lexical competence itself. Students cannot participate meaningfully in disciplinary discourse without sufficient vocabulary, just as vocabulary alone cannot ensure successful disciplinary participation. Rather than replacing lexical perspectives, disciplinary approaches extend them by explaining how lexical resources become meaningful through disciplinary activity.

The tension between general academic vocabulary and disciplinary specificity illustrates this broader debate. Corpus-based research has long sought to identify vocabulary shared across academic disciplines, resulting in influential resources such as the Academic Word List (Coxhead, 2000) and the Academic Vocabulary List (Gardner & Davies, 2014). These resources remain valuable because they provide learners with a practical foundation for engaging with academic texts. However, subsequent research has demonstrated that many supposedly general academic words vary considerably in meaning, collocation, and rhetorical function across disciplines (Hyland & Tse, 2007). Terms such as analysis, model, evidence, theory, and significant occur widely across academic writing, yet their meanings are shaped by disciplinary assumptions about what constitutes legitimate knowledge.

Importantly, however, this evidence should not be interpreted as demonstrating that general academic vocabulary lacks pedagogical value. Some discussions have tended to frame the debate as a choice between universal vocabulary and discipline-specific vocabulary. The evidence instead suggests a more nuanced interpretation. General academic vocabulary provides an essential linguistic foundation, particularly during the early stages of higher education, while disciplinary engagement progressively reshapes how these lexical resources are interpreted and deployed. The issue is therefore not whether academic vocabulary is general or discipline-specific, but how general lexical knowledge becomes increasingly specialised through disciplinary participation.

This interpretation also highlights an important distinction that remains underdeveloped in the literature: the difference between knowing vocabulary and appropriating vocabulary. Knowing a word involves recognising its form and meaning; appropriating it involves using that word in ways that conform to the communicative expectations of a disciplinary community. Vocabulary development is therefore not simply additive but transformative. As students participate in reading, writing, discussion, and research, familiar lexical items acquire increasingly specialised meanings, rhetorical functions, and epistemic significance. Lexical growth thus reflects changing participation in disciplinary practices rather than merely increasing vocabulary size.

Research on phraseology reinforces this argument. Academic communication depends extensively on recurrent lexical bundles, reporting expressions, hedging devices, and evaluative language that organise arguments and position writers within scholarly conversations (Hyland, 2005, 2008; Biber et al., 2004). These linguistic resources perform interpersonal and epistemic functions that individual words cannot achieve independently. Their importance challenges traditional vocabulary research, which has often treated words as discrete units of analysis while giving comparatively less attention to the patterned language through which disciplinary communication is realised. Consequently, understanding academic vocabulary increasingly requires attention to phraseology, discourse organisation, and rhetorical purpose alongside individual lexical items.

Genre theory provides further support for this functional perspective. Swales (1990) argues that discourse communities are defined by shared communicative purposes and recurrent genres rather than by shared vocabulary alone. Vocabulary therefore derives its meaning from the communicative work it performs within disciplinary genres such as research articles, literature reviews, laboratory reports, and reflective essays. Genre-based pedagogy has translated this insight into instructional practice by encouraging students to analyse how lexical choices contribute to the rhetorical organisation of authentic academic texts. Nevertheless, empirical evidence evaluating the long-term effectiveness of genre-informed vocabulary instruction remains comparatively limited, suggesting that stronger classroom-based and longitudinal research is still required.

Another unresolved issue concerns the balance between cognitive and sociocultural explanations of vocabulary development. Research (e.g. Lantolf, & Thorne, 2006) typically conceptualise vocabulary as knowledge residing within the individual learner, whereas academic literacy and sociocultural perspectives emphasise participation in communities of practice. Each perspective captures an important dimension of vocabulary development, yet neither alone provides a complete explanation. Cognitive models explain how lexical representations develop and support comprehension, whereas sociocultural theories explain why particular lexical resources become meaningful within disciplinary contexts. Rather than viewing these approaches as competing paradigms, a more productive synthesis recognises that vocabulary development is simultaneously cognitive, linguistic, and social.

This integrated perspective highlights the dual challenge of acquiring disciplinary knowledge while simultaneously learning the language through which that knowledge is constructed. Vocabulary limitations therefore constrain more than language proficiency; they restrict access to disciplinary participation itself. Conversely, as learners engage increasingly with disciplinary reading, writing, discussion, and research, vocabulary develops as both a consequence and a facilitator of academic participation.

Academic vocabulary should therefore be viewed as a dynamic resource that evolves through engagement with disciplinary practices rather than as a prerequisite that must be mastered before meaningful participation becomes possible.

Therefore, the accumulated evidence suggests that the most significant contribution of recent scholarship is not the rejection of earlier lexical approaches but their repositioning within a broader understanding of academic discourse. Vocabulary remains fundamental to academic success, yet its educational significance lies not simply in the number of words students know but in their ability to mobilise lexical resources to construct knowledge, negotiate disciplinary meanings, and participate legitimately within scholarly communities. This reconceptualisation provides the conceptual bridge to the following sections, where the challenges of developing such competence and the pedagogical approaches designed to support it are critically examined.

7. Challenges Faced by EFL University Students in Developing Academic Vocabulary

Despite decades of research and the development of increasingly sophisticated pedagogical resources, academic vocabulary remains one of the most persistent barriers to success in EFL higher education. Across diverse educational contexts, university students frequently begin their studies with sufficient command of everyday English yet struggle to engage with disciplinary texts, construct academic arguments, or participate confidently in scholarly discussions. Importantly, these difficulties cannot be explained simply by limited vocabulary size. Rather, they emerge from the interaction of linguistic, cognitive, disciplinary, instructional, and contextual factors that collectively shape students' opportunities to participate in academic discourse.

One of the most consistently identified challenges concerns the transition from general English proficiency to academic language proficiency. Secondary language education often prioritises grammatical accuracy and communicative competence, whereas university learning requires students to interpret abstract concepts, evaluate evidence, and communicate through increasingly specialised academic registers. Cummins' (2000) distinction between Basic Interpersonal Communicative Skills (BICS) and Cognitive Academic Language Proficiency (CALP) continues to provide a useful explanation for this transition. Nevertheless, its application to higher education should be treated critically. While the distinction captures broad differences between conversational and academic language, it has been criticised for presenting language proficiency as a relatively stable dichotomy rather than recognising the fluid and context-dependent nature of academic literacy. Contemporary research increasingly suggests that academic language develops through participation in disciplinary practices rather than through progression between discrete categories of proficiency.

The lexical demands of university reading further amplify these challenges. Academic texts contain dense conceptual information, specialised terminology, nominalisations, and complex phraseological patterns that place considerable demands on learners' lexical knowledge (Nation, 2013). Yet evidence suggests that the principal difficulty is not simply the presence of unfamiliar vocabulary but the interaction between vocabulary and comprehension. Students with restricted lexical knowledge frequently struggle to construct coherent interpretations because cognitive resources are diverted towards resolving lexical uncertainty rather than integrating ideas across texts (Grabe, 2009; Perfetti & Stafura, 2014). However, this relationship is reciprocal rather than unidirectional. Limited vocabulary constrains reading, but limited engagement with academic reading simultaneously restricts opportunities for vocabulary growth. Consequently, vocabulary deficits should be viewed not merely as a cause of comprehension difficulties but also as one consequence of limited participation in academic literacy practices.

The distinction between receptive and productive vocabulary represents another well-established challenge, although its educational implications are often underestimated. Research consistently demonstrates that learners recognise substantially more academic vocabulary than they can actively use in speaking or writing (Nation, 2013). Productive vocabulary requires far more than recognising word meanings; it demands knowledge of collocations, grammatical behaviour, register, rhetorical appropriateness, and disciplinary conventions. While this distinction is widely accepted, comparatively little research has examined how receptive knowledge is transformed into productive academic language over time. The mechanisms through which learners appropriate vocabulary for disciplinary communication therefore remain insufficiently understood, representing an important gap in current research.

Morphological complexity and phraseological competence further complicate lexical development. Academic English relies extensively on derivational morphology, nominalisation, and recurrent lexical bundles that enable writers to express complex relationships economically. Morphological awareness has consistently been associated with vocabulary growth and reading comprehension (Carlisle, 2000), yet its contribution should not be overstated. Morphological knowledge facilitates inference but cannot compensate for limited conceptual understanding or disciplinary knowledge. Similarly, growing recognition of phraseology has highlighted that successful academic communication depends not only on individual words but also on conventional patterns of language use. Despite increasing research attention, these dimensions remain comparatively underrepresented in classroom practice, where vocabulary instruction continues to focus predominantly on isolated lexical items.

Perhaps the most significant challenge identified across the literature concerns the disciplinary nature of academic vocabulary. Corpus-based research has demonstrated considerable lexical overlap across academic disciplines, whereas academic literacy research emphasises the contextual specificity of disciplinary discourse. Rather than resolving this tension, existing research suggests that both perspectives capture different dimensions of academic language. Students require a foundation of general academic vocabulary while simultaneously learning how familiar lexical resources acquire specialised meanings within disciplinary communities. The educational challenge therefore lies not simply in learning additional vocabulary but in adapting existing lexical knowledge to new disciplinary contexts. This developmental process remains comparatively underexplored, particularly in multilingual university settings.

The persistence of these challenges also reflects limitations in prevailing instructional practices. Despite strong evidence supporting contextualised vocabulary learning, instruction in many EFL contexts continues to rely heavily on memorisation, bilingual translation, or decontextualised vocabulary lists. Such approaches may facilitate short-term recognition but provide comparatively limited opportunities for developing the flexible, productive, and discipline-sensitive vocabulary required for university study. However, attributing persistent lexical difficulties solely to ineffective pedagogy would oversimplify a more complex issue. Institutional constraints, curriculum demands, assessment practices, and limited opportunities for authentic academic interaction also shape students' vocabulary development. The challenge is therefore educational as much as linguistic.

Learner-related factors introduce an additional layer of complexity. Extensive reading, motivation, metacognitive awareness, prior educational experiences, and opportunities for language use all influence vocabulary development. Students who engage regularly with disciplinary texts generally demonstrate greater lexical growth than those relying primarily on deliberate memorisation (Nation & Waring, 1997). Nevertheless, the literature also cautions against attributing vocabulary development primarily to individual learner responsibility. Such interpretations risk overlooking the role of institutional environments in creating, or limiting, opportunities for meaningful engagement with academic language. Vocabulary development emerges through the interaction of learner agency and educational context rather than either factor independently.

Recent technological developments further illustrate the evolving nature of academic vocabulary development. Digital corpora, concordancers, online dictionaries, spaced-repetition applications, and vocabulary learning platforms have expanded learners' access to authentic academic language and created new opportunities for independent, data-informed lexical learning (Coxhead, 2025; Webb, 2019; Webb & Nation, 2017). Corpus-informed resources, in particular, enable students to examine authentic patterns of word frequency, collocation, phraseology, and disciplinary usage, thereby supporting deeper lexical knowledge than traditional dictionary consultation alone (Biber et al., 2004; Hyland, 2008).

At the same time, the rapid adoption of machine translation and generative artificial intelligence (AI) tools has introduced new questions about the nature of vocabulary learning itself. Although these technologies can facilitate comprehension, reduce linguistic barriers, and provide immediate linguistic support, their influence on long-term lexical development remains uncertain. Vocabulary acquisition research consistently demonstrates that durable lexical knowledge depends on repeated retrieval, contextual inference, elaborative processing, and meaningful productive use (Nation, 2013; Schmitt, 2008; Webb & Nation, 2017). If learners rely extensively on AI-generated lexical choices rather than actively retrieving and manipulating vocabulary themselves, opportunities for these cognitively demanding learning processes may be reduced. However, empirical evidence regarding the educational impact of generative AI on vocabulary development is still emerging, and current findings suggest that its effects depend largely on how such tools are pedagogically integrated rather than on the technologies themselves (Kasneci et al., 2023; Zawacki-Richter et al., 2019). Consequently, AI should be understood neither as an inherent threat nor as a complete solution to vocabulary learning, but as a pedagogical resource whose educational value depends on whether it promotes or replaces meaningful engagement with academic language. These findings suggest that academic vocabulary development should not be conceptualised as the accumulation of increasingly specialised lexical knowledge. Rather, it represents a gradual process of becoming able to use language appropriately within increasingly demanding disciplinary contexts. The difficulties experienced by EFL learners therefore arise not from a single linguistic deficiency but from the interaction of vocabulary knowledge with reading comprehension, writing, disciplinary learning, instructional experiences, and opportunities for academic participation. These factors reinforce one another over time, creating developmental trajectories that are difficult to alter through isolated instructional interventions.

This exposes an important conceptual tension within the literature. Much research continues to conceptualize limited academic vocabulary as an individual learner deficit that can be remedied through explicit instruction or strategy training. Such an orientation implicitly assumes that vocabulary development is primarily the accumulation of lexical knowledge. In contrast, academic literacies and sociocultural perspectives argue that vocabulary knowledge is inseparable from participation in the communicative practices through which disciplines construct and negotiate knowledge (Lea & Street, 1998; Lantolf & Thorne, 2006; Gee & Gee, 2007). From this perspective, vocabulary limitations may reflect unequal access to authentic disciplinary discourse as much as deficiencies in lexical knowledge itself. The central pedagogical challenge therefore shifts from teaching academic words in isolation to creating

learning environments that enable sustained participation in disciplinary reading, writing, dialogue, and inquiry, through which vocabulary, disciplinary understanding, and academic identity develop reciprocally (Hyland, 2008; Wingate, 2018, 2022).

8. Instructional Approaches for Developing Academic Vocabulary in EFL Higher Education

Research on academic vocabulary instruction has progressively shifted from asking which teaching technique is most effective to examining the conditions under which vocabulary development supports academic literacy and disciplinary participation. This shift reflects a broader reconceptualization of vocabulary as a dynamic component of academic communication rather than an isolated linguistic target. Nevertheless, despite growing consensus that vocabulary learning should be contextualized and integrated with disciplinary learning, the literature remains divided regarding the relative contributions of explicit instruction, incidental learning, strategy training, and technology-mediated approaches. Much of the existing evidence demonstrates positive outcomes for individual interventions, yet comparatively little explains how these approaches interact over time to support sustained academic development.

A consistent finding across studies is that explicit vocabulary instruction facilitates initial lexical learning, particularly for low-frequency academic vocabulary that learners are unlikely to acquire independently (Nation, 2013; Schmitt, 2008). Direct instruction provides learners with semantic, morphological, and grammatical information that reduces the cognitive burden of processing unfamiliar vocabulary and improves immediate comprehension. However, evidence also indicates that these gains are often limited to receptive knowledge unless learners subsequently encounter and use target vocabulary in authentic communicative contexts. This raises an important limitation in the literature: although explicit vocabulary instruction consistently produces gains in students' knowledge of targeted words, most intervention studies assess outcomes immediately after instruction using proximal measures of taught vocabulary. Comparatively few studies investigate whether these gains are retained over time, transferred to untaught vocabulary, or productively applied in disciplinary reading and writing. Recent systematic reviews and meta-analyses have likewise concluded that evidence for long-term maintenance and far transfer remains limited, despite well-established short-term instructional effects (Hjetland et al., 2023; Bengochea, 2024).

This limitation has contributed to increasing support for integrated approaches that embed vocabulary development within reading, writing, and disciplinary inquiry rather than treating it as a separate instructional objective. From this perspective, vocabulary learning is viewed as an outcome of meaningful academic engagement rather than a prerequisite for it. Coxhead (2025) argues that contextualized encounters enable learners to develop richer lexical representations because words are processed alongside disciplinary concepts, rhetorical structures, and communicative purposes. Yet this position also warrants critical consideration. Although contextualized learning appears pedagogically desirable, empirical evidence rarely isolates the mechanisms responsible for its effectiveness. It therefore remains unclear whether improved vocabulary learning results primarily from contextual richness, increased exposure, learner engagement, or opportunities for productive language use. These factors frequently co-occur, making it difficult to determine which components are essential and which merely facilitate learning.

The literature likewise presents extensive reading as one of the most powerful mechanisms for vocabulary development because it provides repeated encounters with academic language in meaningful contexts (Nation & Waring, 1997). Strong evidence supports the reciprocal relationship between reading and vocabulary growth: vocabulary facilitates comprehension, while comprehension creates further opportunities for incidental lexical learning. However, this reciprocal relationship also exposes an important challenge for EFL learners. Incidental acquisition presupposes sufficient lexical coverage to comprehend texts successfully. Students with limited academic vocabulary often struggle to benefit from extensive reading precisely because inadequate comprehension restricts opportunities for noticing and consolidating unfamiliar vocabulary. Consequently, claims regarding the effectiveness of extensive reading must be interpreted cautiously, particularly in contexts where learners begin university with restricted lexical resources. Increasingly, research suggests that extensive reading is most effective when combined with explicit lexical support and guided discussion rather than implemented as a stand-alone intervention.

Similar considerations emerge in relation to corpus-informed instruction, morphological awareness, and vocabulary learning strategies. Although these approaches differ theoretically, they converge in their emphasis on developing learners' capacity for independent vocabulary learning. Corpus-based pedagogy enables students to investigate authentic disciplinary language, morphological instruction supports inference of unfamiliar vocabulary, and strategy training promotes self-regulated learning through contextual analysis and retrieval practice. While each approach has demonstrated educational value, evidence comparing their relative effectiveness remains limited. Furthermore, much of the existing research evaluates these interventions independently, despite the likelihood that their benefits derive from complementary rather than competing functions. Future investigations should therefore move beyond comparisons of individual methods towards examining how multiple instructional approaches interact within coherent academic literacy programmes.

The increasing incorporation of digital technologies introduces further complexity into this discussion. Corpus tools, concordancers, online dictionaries, and vocabulary applications have expanded opportunities for individualized learning and

immediate access to authentic academic language. At the same time, widespread reliance on machine translation and generative artificial intelligence raises important pedagogical questions that remain largely unresolved. While these technologies undoubtedly improve efficiency and provide valuable lexical support, it is still unclear whether they promote the deep cognitive processing necessary for durable vocabulary acquisition or instead encourage surface-level lexical substitution. Current evidence on this issue remains limited, particularly regarding how AI-assisted writing influences the development of productive academic vocabulary over extended periods of study. Given the rapid integration of generative AI into higher education, this represents one of the most significant gaps in contemporary academic vocabulary research.

Another notable limitation concerns the predominance of short-term, intervention-based research. Most instructional studies evaluate vocabulary growth through pre- and post-tests administered over relatively brief periods, providing valuable evidence of immediate learning outcomes but offering little insight into how academic vocabulary develops across entire university programmes. Such designs often treat vocabulary as an isolated measurable outcome rather than as part of students' broader academic trajectories. Consequently, relatively little is known about how instructional practices influence students' disciplinary socialization, academic identity, or capacity to participate confidently in scholarly communities. Longitudinal classroom-based research would therefore provide a more comprehensive understanding of how vocabulary development unfolds through sustained academic engagement.

Therefore, the literature suggests that identifying a single superior approach to academic vocabulary instruction may be less informative than examining how complementary instructional practices support different dimensions of lexical development. Research consistently indicates that explicit instruction plays an important role in establishing initial word knowledge (Nation, 2022; Schmitt, 2008; Webb & Nation, 2017), while extensive reading and meaningful disciplinary engagement provide the repeated contextual encounters necessary for consolidating vocabulary knowledge and promoting deeper lexical understanding (Grabe, 2009; Webb, 2019). Likewise, collaborative interaction, morphological awareness, and strategic vocabulary learning contribute to learners' ability to use academic vocabulary more flexibly and independently across contexts (Carlisle, 2000; Lantolf & Thorne, 2006; Schmitt, 1997). Recent evidence syntheses further suggest that vocabulary interventions are most effective when they combine multiple sources of lexical input and use rather than relying on isolated instructional techniques (Bengochea & Sembianti, 2024; Hjetland et al., 2023). Viewed collectively, these findings indicate that the effectiveness of vocabulary instruction depends not only on individual pedagogical methods but also on the extent to which they provide sustained opportunities for learners to encounter, apply, and refine academic vocabulary across authentic learning contexts.

This also highlights a broader theoretical implication. Rather than viewing academic vocabulary as a discrete body of lexical items to be acquired, contemporary perspectives increasingly conceptualise vocabulary development as inseparable from participation in disciplinary discourse and academic literacy practices (Gee, 2007; Hyland, 2007; Lea & Street, 1998). From this perspective, academic vocabulary supports learners' engagement with the genres, rhetorical conventions, and knowledge-building practices that characterise higher education (Swales, 1990; Hyland, 2005). Consequently, future research should extend beyond measuring short-term vocabulary gains to examine how lexical development contributes to broader educational outcomes, including disciplinary learning, academic writing, and students' capacity to participate effectively in scholarly communities. Such an orientation would shift attention from vocabulary knowledge as an end in itself towards understanding its role in enabling meaningful participation in academic discourse.

Conclusion

This review has argued that academic vocabulary is best understood as a linguistic resource that supports participation in academic discourse rather than simply as a discrete body of words to be mastered. Early corpus-based research made an indispensable contribution by identifying high-value lexical items through resources such as the Academic Word List and the Academic Vocabulary List. However, subsequent research has shown that frequency alone provides only a partial account of academic language. The educational value of academic vocabulary lies not merely in the words themselves but in how they enable learners to interpret disciplinary knowledge, construct arguments, negotiate meaning, and communicate within academic communities. Consequently, understanding academic vocabulary requires a perspective that integrates lexical knowledge with the functional demands of academic discourse.

Bringing together evidence from vocabulary research, corpus linguistics, English for Academic Purposes, academic literacy, reading research, and disciplinary discourse reveals substantial convergence despite differences in theoretical orientation. Across these traditions, academic vocabulary is increasingly viewed as embedded within the literacy practices through which knowledge is produced, interpreted, and communicated in higher education. Although explicit instruction remains an important component of vocabulary development, lexical growth is also shaped by sustained engagement with academic reading, writing, discussion, and disciplinary inquiry. Rather than representing separate dimensions of learning, vocabulary development and academic literacy appear to reinforce one another throughout students' educational experiences.

The review further highlights that academic vocabulary serves multiple, interconnected functions in higher education. It supports comprehension of increasingly complex texts, facilitates the construction of coherent and evidence-based arguments, enables participation in disciplinary communication, and contributes to students' academic socialisation. These functions are mutually reinforcing: reading expands lexical knowledge, writing promotes productive and precise language use, and disciplinary participation creates opportunities to consolidate and refine vocabulary in authentic contexts. Academic vocabulary should therefore be viewed not only as a prerequisite for academic success but also as a capability that continues to develop through ongoing participation in university learning.

The literature likewise suggests that the challenges experienced by EFL university students cannot be explained solely by limited vocabulary size. Instead, vocabulary learning is influenced by the interaction of linguistic, cognitive, disciplinary, and pedagogical factors, including restricted exposure to authentic academic language, the complexity of disciplinary discourse, and differences in instructional contexts. This complexity indicates that no single instructional approach is sufficient to address students' vocabulary needs across diverse academic settings.

From a pedagogical perspective, the accumulated evidence supports an integrated approach to vocabulary instruction. Explicit teaching is particularly valuable for establishing initial knowledge of unfamiliar lexical items, while extensive reading, disciplinary writing, collaborative interaction, and strategy instruction provide complementary opportunities for repeated exposure, contextual application, and productive use. Rather than competing alternatives, these approaches appear to address different aspects of vocabulary learning and are likely to be most effective when implemented in combination within authentic disciplinary contexts.

The review also identifies several important gaps in the existing literature. While considerable attention has been devoted to evaluating instructional interventions and measuring vocabulary gains, comparatively little is known about how academic vocabulary develops across students' university programmes or how lexical development relates to broader educational outcomes, including disciplinary learning, academic identity, and sustained engagement in scholarly communities. Future research would therefore benefit from longitudinal, classroom-based, and discipline-sensitive investigations that examine vocabulary development as part of students' wider academic trajectories. Such work would also contribute to a better understanding of how vocabulary learning both supports and is shaped by academic literacy practices in multilingual higher education.

Ultimately, this review proposes that academic vocabulary is most productively conceptualised not as an end point of language learning but as an evolving resource that enables participation in higher education. This perspective does not diminish the importance of deliberate vocabulary instruction or lexical knowledge; rather, it situates them within the broader processes through which students engage with disciplinary texts, construct knowledge, and participate in academic communities. Viewing vocabulary through this broader lens provides a more comprehensive framework for understanding its contribution to learning and offers a productive direction for future research and pedagogical practice in EFL higher education.

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