To Teach or Not to Teach Collocations in EFL Academic Contexts: An Overview of Current Research and a Response to Reynolds (2019, 2022)

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ABSTRACT

Collocations (e.g., *target audience, highly controversial, abject poverty*, *abysmal failure*, *extenuating circumstances*, *obviate the need*) have continued to attract a lot of attention from corpus linguists, applied linguists, and second language acquisition (SLA) researchers, due to their ubiquitousness in academic English. Furthermore, the effective use of collocations has been perceived to be of paramount importance to English as a second (ESL) and English as a foreign language (EFL) learners' language proficiency, especially as evidenced from the empirical studies that have emerged copiously during the last three decades or so. However, mastering collocations is considered as one of the most formidable aspects of vocabulary acquisition, especially for adult ESL/EFL learners. Therefore, in the general domain of vocabulary learning and teaching, the issue of 'how to address collocations' has remained a point of contention among researchers and pedagogically-oriented scholars, not to mention its status as a persistent professional concern for many English language teaching (ELT) teachers, particularly in EFL contexts. The most perennial question raised in this regard has been the extent to which L2 learners will learn collocations in an implicit laissez-faire atmosphere of enriched surrounding contexts - i.e., incidental learning - than in an instructed sequence of direct attention to them - i.e., explicit instruction. In this narrative overview, I provide theoretical, linguistic, and pedagogical evidence which buttress several arguments *for* the explicit teaching of collocations in EFL contexts. These arguments are used as evidence against the claims made by Reynolds (2019, 2022) *against* teaching collocations.

Key words: collocations; statistical (restricted) collocations; academic English collocations; explicit collocation instruction; implicit collocation learning; EFL contexts

Introduction

The extent to which learners create language by virtue of combining words through language rules (Pinker, 1999) – an *open choice principle* – or via using "a large number of semi-preconstructed phrases that constitute single choices, even though they might appear to be analyzable into segments" – the *idiom principle* (Sinclair, 1991, p. 110) – has been an important and heated debate in language development. It is now widely held that the construct of 'collocation', constituting the main conceptual tool associated with the idiom principle, can plausibly explain how language is produced fluently and accurately (Firth, 1964; Hoey, 2005; McCarthy & O'Dell, 2017; Nattinger & DeCarrico, 1992; O'Keefe et al., 2007; Pawley & Syder, 1983; Szudarski, 2023) as well as how language is taught and learned (Boers & Lindstromberg,

2009; Boers & Webb, 2018; Lewis, 2000; Schmitt, 2004; Siyanova-Chanturia & Pellicer-Sánchez, 2019; Szudarski, 2023; Wood, 2010, 2015; Wray, 2002).

Over the past few decades, corpus research (e.g., Biber et al., 1999; Earman & Waren, 2000; Sinclair, 1991) has provided strong evidence of the pervasiveness of collocations in the English language and, hence, of the paramount importance that should be attached to them in teaching and learning English as a second language (ESL) and as a foreign language (EFL). Thanks to a growing realization of this importance, there has been an ever-increasing interest in investigating the nature of collocations in the speech and writing of ESL/EFL learners, particularly with the advent and integration of corpus and psycholinguistic methods which have simultaneously furthered our understanding, and allowed for more specific questions to emerge.

Recently, in a short chain of commentaries in the *ELT* and *The Reading Matrix* journals, Reynolds (2019) has argued how he is 'Against teaching collocations' to English language learners and how he is 'Still against teaching collocations' (Reynolds, 2022) even after a critique was levelled by Askari and Naghdipour (2021) against the claims in his first commentary. The main thrust of Reynolds' (2019) first commentary can be encapsulated in two arguments. First, drawing on Yorio's (1980, p. 440) claim that "most of the idioms that we ask our students to use are not, in fact, really necessary", Reynolds (2019) argues that "the increasing interest in the teaching and learning of collocations is often the result of native-speakerism (Holliday 2006)" (p. 223). Second, Reynolds extends the notion of intelligibility in the teaching of pronunciation to teaching collocations, claiming that "in general, we should be aiming at comfortably intelligible collocations rather than native-like ones" and that "[t]eachers should not be wasting students' time trying to teach them trivial items … in an effort to have them speak ever more subtly like a 'native speaker of English'" (Reynolds, 2019, p. 224). Examples of such 'trivial' collocations that Reynolds (2019, p. 223) mentioned are *heavily loaded*, *deeply rooted*, and *highly estimated* on the grounds that they are of low frequency in the Corpus of Contemporary American English (COCA). However, Reynolds (2019) expressed the reservation that "[t]his is not to say that idiomaticity should - or even could - be dispensed with altogether" and that he was "explicitly arguing against pushing for finer and finer levels" (p. 224).

In response to Reynolds' (2019) claims *against* teaching 'native-like' collocations, Askari & Naghdipour (2021) provided four arguments *for* teaching such collocations, especially in EFL contexts, the main thrust of which boils down to two ideas. First, "the concept of 'intelligibility' of collocations is rather hazy in Reynolds' comment"; in other words, "the very idea of 'intelligible collocations' in various contexts of English usage and the criteria (e.g., perceptual salience, frequency criteria, or other) to identify which collocations are intelligible and which are not and which are 'important' or 'trivial' have remained unanswered" (Askari & Naghdipour, 2021, p. 171). Second, "intelligibility in using collocations does not obviate the need for learning [and teaching] accurate, precise, native-like [collocations]" (Askari & Naghdipour, 2021, p. 171).

In another commentary on Askari & Naghdipour (2021), Reynolds (2022) largely reiterates the previous issues raised in Reynolds (2019). Nonetheless, the lion's share of Reynolds (2022) arguments seems to center around his claim that there is no direct evidence in the literature that knowledge of collocations facilitates comprehension, and in fact he has been "unable to find any direct evidence for this idea at all" (Reynolds, 2022, p. 145). To complicate the matter further, "even if teachers dedicated a great deal of attention to teaching collocations, the payback in improved comprehension would be *trivial* [emphasis added] at best" (Reynolds, 2022, p. 156). However, in none of these papers could Reynolds provide adequate empirical evidence in support of the 'triviality' of the role of collocations for the comprehension of English texts (both spoken and written forms).

Partially as a response to Reynolds (2019, 2022), in this paper, five general arguments, coupled with specific details, are presented in favor of explicit collocation instruction in EFL contexts. These arguments are then backed up by empirical support from the current research on the topic of L2 collocation learning and teaching. Importantly, empirical evidence is provided for the linguistic, theoretical, and pedagogical importance of explicit collocation teaching in relation to all the four skills of listening, speaking, reading, and writing, especially in EFL academic contexts. In the course of arguments, repeated reference is made to the senior high school context of Iran as an exemplary EFL setting.

In this article, a hybrid approach (Barfield & Gyllstad, 2009; Henriksen, 2013), drawing from both the frequency-based tradition (Hunston, 2002; Sinclair, 1991) and the phraseological tradition (Howarth, 1998; Nesselhauf, 2003, 2005; Paquot & Granger, 2012) is adopted. Accordingly, collocations are defined here as "frequently recurring two-to-three-word syntagmatic units which can include both lexical and grammatical words, e.g., verb + noun (*pay tribute*), adjective + noun (*hot spice*), preposition + noun (*on guard*), and adjective + preposition (*immune to*)" (Henriksen, 2013, p. 30). The definition identifies collocations not only in terms of their generally accepted co-occurrence of words, i.e., word partnership – which is premised on the Sinclair's (1991) early definition of collocation as "the occurrence of two or more words within a short space of each other in a text" (p. 110) – but also in terms of their strength of meaning associations. This conceptualization of collocation is, to some extent, informed by the semantic properties of the individual words, as it could be argued that collocational knowledge is in many ways an extension of semantic knowledge (e.g., Jarvis & Pavlenko, 2008, p. 74). Such a hybrid approach to collocations has been adopted in several other studies as well (e.g., Ackermann & Chen, 2013; Bestgen, 2017; Bestgen & Granger, 2014; Durrant & Schmitt, 2009; Edmonds & Gudmestad, 2014; Ellis et al., 2008; Gyllstad, 2009; Granger & Bestgen, 2014; Li & Lei, 2024; Nguyen & Webb, 2017; Shin & Nation, 2008; Simpson-Vlach & Ellis, 2010; Szudarski & Carter, 2016; Toomer et al., 2024; Vilkaitė & Schmitt, 2019; Wolter & Gyllstad, 2011; Yoon, 2016). For example, Gyllstad (2009, p. 155) defined a collocation as a sequence of at least two words that are "frequently co-occurring" and "where one of the words is used in a figurative, delexical, or technical sense" (e.g., *catch a cold*, *run a business*), thus reconciling both frequency and phraseological approaches to the study of collocations. This definition is pertinent to EFL academic contexts because it features both frequent and transparent and infrequent, but strongly associated collocations characterized by their restricted substitutability (Bestgen, 2017; Snoder, 2017; Szudarski & Carter, 2016; Toomer et al., 2024; Yoon, 2016). Crucially, in terms of meaning, the definition captures the idea of 'idiomaticity of collocations' since idiomatic language can also embrace lexical combinations which are typically construed as collocations (e.g., Boers & Webb, 2015; Macis, 2018; Macis & Schmitt, 2017a, 2017b; Obukadeta, 2020; Philip, 2011; Shi et al., 2023). Macis and Schmitt (2017b), for instance, consider some of the target collocations in other studies as idiomatic collocations because they have figurative meanings (usually in addition to a literal meaning). Examples include *pull strings* and *cut corners* (Webb et al., 2013), and *bottom line* (Wolter & Gyllstad, 2013). Such idiomatic meaning of collocations poses serious problems for L2 learners (Macis, 2018; Macis & Schmitt, 2017a, 2017b).

With these in mind, for the purposes of this paper, collocations "are not the products of general rules applying to words, and nor do they in general behave like single words" (Buerki, 2016, p. 16; Zaabalawi & Gould, 2017). Conversely, this paper assumes that collocations "extend far beyond the realm of lexical items" (Buerki, 2020, p. 31), and that they are driven by *idiomaticity*, which is "native-like selection of expressions one has to know over and above rules and words" (Warren, 2005, p. 35). This native-like selection criterion for collocation instruction and learning helps mitigate the worst impacts of the unnatural

language use that "is problematical for learners in EFL contexts" (Shin & Nation, 2008, p. 310; Lei & Liu, 2024; Sun & Park, 2023; inter alia), where there is an unhealthy obsession with traditional teaching of individual words and grammar rather than collocational combinations (e.g., Barouni Ebrahimi, 2021).

Further arguments in favor of explicit collocation instruction in EFL academic contexts

#1. Collocations are important for EFL learners from various perspectives.

1.1 Linguistic support in favor of teaching collocations

From a linguistic perspective, the quantitative importance of collocations has been well established in the corpus linguistics literature due to their pervasiveness in the English language (e.g., Biber et al, 1999; Erman & Warren, 2000; Hill, 2000; Hoey, 2005; Lea et al., 2002; Nattinger & DeCarrico, 1992; O'Keefe et al., 2007; Shin & Nation, 2008; Sinclair, 2001, 2004). According to the Lea et al. (2002, p. vii), "[n]o piece of natural spoken or written English is totally free of collocation", and "collocation permeates even the most basic, frequent words" (O'Keefe et al., 2007, p. 60). Hinkel (2019) submitted that "most frequent collocations are so ubiquitous that they are encountered in any context, and without these no L2 learner can survive" (p. 116). Altenberg (1998) suggested that "over 80% of the words in the corpus form part of a recurring word-combination in one way or another" (as cited in Hyland, 2008, p. 6). Hill (2000), claimed that "up to 70% of everything we say, hear, read, or write is to be found in some form of fixed expression" (p. 53). According to Erman and Warren (2000), formulaic sequences, including collocations, make up an estimate of 58.6% of the spoken and 52.3% of the written English discourse. Shin and Nation's (2008) large corpus study found that the number of collocations of the first 200 most frequent pivot words account for approximately 68% of all the collocations in spoken English, and that 77% of the total spoken collocations comprise two words. Succinctly stated, this discovery of the ubiquity of multi-word units (including collocations) in natural English has resulted in "a complete overhaul of the theory and practice of phraseology" (Granger, 2021, p. 5).

1.2 Theoretical support in favor of teaching collocations

Theoretically, the most fundamental reason for focusing on collocations stems from the realization that collocations are basic linguistic units which are based on form-meaning pairings of words and multi-units, a view influenced by various theoretical positions and approaches such as the *idiom principle* (Sinclair, 1991, 2004), *pattern grammar* (Hunston & Francis, 2000), *cognitive grammar* (Langacker, 2007, 2008; Littlemore, 2009), *construction grammar* (Ellis, 2013; Goldberg, 2006; Hoffmann, 2022), *systemic functional grammar* (Halliday & Matthiessen, 2014), the *Lexical Approach* (Lewis, 1993, 2000, 2008; Boers & Lindstromberg, 2009), *speech theories* (Bygate, 1987; Levelt, 1989; Kormos, 2006), *usage-based theories of SLA* (Bybee, 2013; Ellis, 2002; Ellis & Wulf, 2020; Tomasello, 2003), and models of word knowledge (Milton & Fitzpatrick, 2014; Nation, 2022). For example, collocation is instrumental in lexically-based theories of language. In fact, the emergence of the *Lexical Approach* to syllabus design and language teaching in the 1990s (Lewis, 1993, 2000, 2008; Boers & Lindstromberg, 2009) was predicated upon the hypothesis that the essential building blocks of language are not grammatical structures, functions, notions, or other units of pedagogy but words and word combinations (i.e., lexis). In Lewis' (1993, p. 89) own words, "language consists of grammaticalised lexis, not lexicalised grammar". Therefore, collocations

derived from corpus analysis serve as the central plank of the Lexical Approach to language teaching. Despite the criticisms raised against the original Lexical Approach (see, e.g., Thornbury, 1998; Timmis, 2008), there has recently been a reappraisal of, especially, its overriding principle, that is, 'teaching lexically' (e.g., Dellar & Walkley, 2016; Timmis, 2008). Timmis (2008) suggests that in lieu of adhering to an entire lexical approach, teachers had better adopt a lexical "dimension" where "raising awareness of *collocations* [emphasis added] and chunks is arguably one of the most important things a teacher can do" (p. 7). Dellar and Walkley (2016) apply 'teaching lexically' not only to the teaching of vocabulary and grammar but also to the skills of listening, speaking, reading, and writing. For them, teaching lexically means prioritizing the naturalness of what we might teach and always teaching words in the company of other words (Dellar & Walkley, 2016). Along the same lines, the *systemic functional approach* advocates the complementarity of lexis and grammar. In other words, "grammar and vocabulary are not different strata [of language]; they are two poles of a single continuum, properly called *lexicogrammar*" (Halliday & Matthiessen, 2014, p. 24). Nation's (2022) widely accepted theoretical model of word knowledge regards knowledge of collocations as one of the key components of the *use* of a word, as "knowing a word involves knowing what words it typically occurs with" (p. 83).

1.3 Pedagogical support in favor of teaching collocations

From a pedagogical perspective, which is of paramount importance in this article, various observations seem to justify L2 collocation learning and teaching. First, collocation has now become an accepted aspect of vocabulary description, acquisition, pedagogy, and assessment, as is evident in the plethora of publications on the topic over the past few decades (e.g., Altamimi, 2024; Altamimi & Conklin, 2023; Barfield & Gyllstad, 2009; Boers et al., 2017; Boers, Demecheleer, et al., 2014; Boers, Lindstromberg, et al., 2014; Boers & Webb, 2018; Brown, 2014; González Fernández & Schmitt, 2015; Henriksen, 2013; Hinkel, 2019; Jeong & DeKeyser, 2023; Laufer & Girsai, 2008; Lewis, 2000; Li & Lei, 2024; McCarthy & O'Dell, 2017; O'Keefe et al., 2007; Paquot, 2018, 2019; Siyanova-Chanturia & Pellicer-Sánchez, 2019; Saito, 2020; Sun & Park, 2023; Szudarski, 2023; Webb, 2020; Wood, 2015; Wray, 2002, 2008; Yamagata et al., 2023, 2024; to name some). It is now widely recognized that knowing a word transcends the form-meaning connection to include aspects of *use* (collocations, grammatical functions, and constraints on use), among other aspects (Nation, 2022; Milton & Fitzpatrick, 2014). In fact, in Nation's (2022) most comprehensive nine-pronged framework for word knowledge, collocation is closely and clearly linked to two other aspects of 'constraints on use' and 'grammatical behavior'. Among these aspects of word *use*, collocation occupies a unique place as it is an indispensable part of word knowledge, particularly in respect to the productive use of words (Brown, 2014; Crossley et al., 2015; Nation, 2022; Schmitt & Schmitt, 2020). According to Brown (2014), "[c]ollocations has attracted considerable interest from researchers, both in its own right and as a prominent part of the wider issue of formulaic language" (p. 123). In L2 learning, and especially in EFL classroom contexts, primary focus is quintessentially on form-meaning links of the words (e.g., Barouni Ebrahimi, 2019), but, conversely, they are also in dire need of learning typical collocations of words to achieve various academic purposes.

Second, knowledge of collocations can facilitate L2 acquisition, especially in EFL contexts, as it promotes accuracy and fluency for both receptive and productive skills through enabling learners to store, process, and produce language in chunks (see #4). Such knowledge is extremely beneficial for learners of English, especially EFL learners, because "choosing the right collocation will make [their] speech and

writing sound much more natural, more native-speaker-like, even when basic intelligibility does not seem to be at issue" (Lea et al., 2002, p. vii). As posited by O'Keefe et al. (2007), "[c]learly, for the learner of any second or foreign language, learning the collocations of that language is not a luxury if anything above a survival level mastery of the language is desired" (p. 60). According to Ur (2012, p. 61), "[a] specific phrase may be grammatically correct and yet sound wrong simply because of *inappropriate collocation* [emphasis added]" (see also Shin & Nation, 2008, for a similar notion). Lewis (2008) proposes that fluency results from acquiring a large stock of fixed and semi-fixed phrases which are "available as the foundation for any linguistic novelty or creativity" (p. 15). According to Ackerman and Chen (2013), "by using a less appropriate collocate, a non-native speaker will sound unnatural or may even become unintelligible among speakers of the target language. Hence if learners aim for advanced proficiency, achieving a high level of collocational competence is essential" (p. 236). González Fernández and Schmitt (2015) echo the same view. Indeed, in their view, lack of collocational knowledge remains problematic for L2 learners: "[r]eceptively, this lack can lead to miscomprehension (Martinez & Murphy, 2011). Productively, the lack of use of collocations, as well as the over-, under-, or mis-use of them, lead to L2 speakers being judged as odd, unnatural or non-nativelike" (González Fernández and Schmitt, 2015, p. 96).

Third, and closely related to the second reason above, is the fact that "language that is collocationally rich is also more precise. … A student who chooses the best collocation will express himself [or herself] much more clearly and be able to convey not just a general meaning, but something quite precise" (Lea et al., 2002, p. vii). Accordingly, "if L2 learners want to use language accurately and fluently, they need to know and use collocations" (González Fernández and Schmitt, 2015, p. 96). Moreover, since collocations are 'conventional' forms of expression, they may be utilized as an efficient manner of expressing concepts or serve the purpose of phrasal terminology in technical, scientific, or academic discourse (Ackermann & Chen, 2013; Durrant, 2009; Lei & Liu, 2018; Schmitt, 2004). As Nation (2022) puts it, just like single-word units, multi-word units, including collocations, have a "communicative purpose" which constitutes "an important part of what is involved in knowing [them]" (p. 435).

Fourth, although for some adult L2 learners "a perfectly nativelike performance may be of relatively little importance" (Wray, 2002, p. 212), mastery of the most common collocations helps L2 learners' use of language, both with fluency development and nativelike section (Ellis et al., 2008; Nattinger & DeCarrico, 2002; Pawley & Syder, 1983; Schmitt, 2004; Siyanova-Chanturia & Pellicer-Sánchez, 2019; Wray, 2002, 2008). With regard to nativelike fluency, achieving a relative mastery of the huge number of "chunked expressions" (including collocations) that adult native speakers have at their disposal enables L2 learners "to reduce cognitive effort, to save processing time, and to have language available for immediate use" (Shin & Nation, 2008, p. 310; for reviews, see *Annual Review of Applied Linguistics 32, 2012*; Hinkel, 2019; Schmitt, 2004; Siyanova-Chanturia & Pellicer-Sánchez, 2019; *TESL Canada Journal, 34, 2017*; Wray, 2002, 2008).

Fifth, native speakerism *per se* – as Reynolds (2019, 2022) claims – is not the main reason for the increasing interest in the teaching and learning of collocations in L2 contexts. It is instead grounded in the idea that collocations constitute a natural component of learners' competence in the L2, their "collocational competence" (Hill, 2000, p. 49). Explicit collocation teaching is premised on the post-communicative paradigm principle that "the primary function of language is *effective* communication" (Ur, 2012, p. 8; emphasis added). Therefore, collocation "is not an added bonus which we pay attention to once students have become sufficiently advanced. Collocation should play an important part in our teaching from lesson one" (Hill, 2000, p. 60). It should be accorded a high status in an EFL teacher's methodology in much the

same way as grammar, pronunciation, and single-word teaching (Hill, 2000). In fact, learning an exhaustive list of single words like "*impetuous* or *initiative*" is ineffective "unless you also know the collocations: *impetuous behavior*, *take initiative*" (Hill, 2000, p. 60).

In spite of the above-mentioned linguistic, theoretical, and pedagogical significance attached to collocation learning, Reynolds (2019, 2022) strongly argues *against* teaching (especially strongly-associated, low-frequency) collocations in EFL classrooms, assuming that they are acquired incidentally in such settings. In the following sections (#2.1 and #2.2), I present eleven arguments that incidental learning of collocations is hard to pin down in EFL contexts. These arguments are subsumed under two general categories: (1) those related to the inherent problems associated with the nature of collocations (#2.1), and (2) those relevant to the typical characteristics of ELT in EFL contexts (#2.2).

#2.1. The inherent problems associated with collocations really matter.

2.1.1 Collocations are generally problematic for EFL learners.

Despite the pervasiveness of collocations in the English language, various manifestations of these units (e.g., collocations, phrasal verbs, idioms) are, in general, problematic for L2 and, especially for EFL learners (e.g., Boers, 2020; Granger, 2019; Hinkel, 2019, 2023; Men, 2018; Meunier, 2012; Meunier & Granger, 2008; Paquot & Granger, 2012; Peters, 2014, 2016, 2020; Pulido, 2022; Rott, 2009; Siyanova-Chanturia & Pellicer-Sánchez, 2019; Wood, 2015; Wray, 2002, 2008, 2019). Specifically, research has shown that collocation learning generally lags behind single-word learning for these learners, especially at the productive level (e.g., Altenberg & Granger, 2001; Bahns & Eldaw, 1993; Barouni Ebrahimi, 2019; Boers, Lindstromberg, & Eyckmans, 2014; Durrant & Schmitt, 2010; Erman et al., 2015; Henriksen, 2013; Hsu & Chiu, 2008; Laufer & Waldman, 2011; Levitzky-Aviad & Laufer, 2013; Li & Schmitt, 2010; Nesselhauf, 2003, 2005; Obukadeta, 2020; Parkinson, 2015; Peters, 2014; Schmitt, 2010; Siyanova-Chanturia & Schmitt, 2008; Tsai, 2015; Wang & Shih, 2011; Yamashita & Jiang, 2010). Furthermore, as testified by a myriad of research studies, collocations in general pose problems for EFL learners (even for those at advanced levels of language proficiency) and that, in broad terms, deficiency in collocation knowledge is a pervasive phenomenon in L2 acquisition (e.g., Altenberg & Granger, 2001; Durrant & Schmitt, 2009; Fan, 2009; Estaji & Montazeri, 2022; Farghal & Obiedat, 1995; Granger, 1998; Henriksen, 2013; Howarth, 1998; Laufer & Waldman, 2011; Levitzky-Aviad & Laufer, 2013; Macis, 2018; Macis & Schmitt, 2017b; Nesselhauf, 2003, 2005; Nguyen & Webb, 2017; Siyanova & Schmitt, 2008; Vilkaitė & Schmitt, 2017; but see Barfield, 2009; González Fernández & Schmitt, 2015; Obukadeta, 2020; Wongkhan & Thienthong, 2021). For example, Peters (2014) argues that "[i]t is not unlikely that the learning burden of collocations is higher because it is more difficult to allocate attentional resources to the formal properties of two (or more) words compared to one" (p. 90). Likewise, Men (2018, p. 2) maintained that "collocation lag" does exist as the EFL learners' language proficiency increases, meaning that they tend to encounter more collocational challenges at higher levels, as corroborated by research findings (e.g., Cao & Badger, 2023; Obukadeta, 2020). The problematic nature of learning collocations is particularly the case with verb-noun and adjective-noun collocations (e.g., Chan & Liou, 2005; Edmonds & Gudmestad, 2014; Granger, 2022; Laufer & Waldman, 2011; Levitzky-Aviad & Laufer, 2013; Nesselhauf, 2003, 2005; Nguyen & Webb, 2017; Obukadeta, 2020; Peters, 2014, 2016; Tsai, 2020).

By way of illustration, Nesselhauf (2005) found that the acquisition of verb-noun collocations (e.g., *take care*, *make money*) and adjective-noun collocations (e.g., *hard work*, *fast food*) proved to be

particularly difficult for German EFL learners. Levitzky-Aviad and Laufer's (2013) corpus analysis of the English passages written by school-aged students and first-year university English majors in Israel also demonstrated a distinct lack of progress in the use of collocations, not only during school years but also during the one advanced year at university. Also, Participant 1 in Macis' (2018) study displayed no knowledge of the duplex collocation *take a hike* even though it was seeded 20 times in the text used as the reading material; nor did her Participant 3 show any learning of duplex collocations *drop the ball* and *hit the roof* despite occurring 20 and 23 times in the text, respectively. Similarly, in Tsai's (2020) study, students in the concept-based approach to verb-noun collocation instruction had problems with producing collocations such as *making a contribution* and *getting attention*. Or, while some of the many senses of the polysemous word *cut* is possible to identify based on a sort of core meaning spread among its various word family members (Grabe & Yamashita, 2022; Nation, 2022), other specific combinations of this word such as *cut short*, *cut classes*, *cut corners*, and *cut benefits* can be challenging for L2 learners (Boers, 2020; see also Macis, 2018; Macis & Schmitt, 2017a, 2017b). This is because the meaning of such lexical combinations "transcends that of the individual words of which they are made up" (Boers, 2020, p. 143); they are distinct "collocational pairings" (Grabe & Yamashita, 2022, p. 265).

2.1.2 Collocations tend to go unnoticed in learning and get neglected in instruction.

It has thus far been reiterated in this paper that collocations are omnipresent in English, that they are valuable for all English learners, particularly EFL learners (Lewis, 2000; Nguyen & Webb, 2017; Nation, 2022; Nesselhauf, 2003, 2005; Obukadeta, 2020; Schmitt & Schmitt, 2020; Tsai, 2020; Webb & Nation, 2017), and that it is necessary to purposefully target them for learning and instruction alongside single-words (Boers, 2020; Hinkel, 2019; Nattinger & DeCarrico, 1992; Pawley & Syder, 1983; Wray, 2002; Pellicer-Sánchez, 2020; Siyanova & Pellicer-Sánchez, 2019). This necessity is premised on the notion that collocational competence is fundamental to enhancing language learning and use (Howarth, 1998; Sinclair, 1991; Szudarski, 2017; Wray, 2002). Nonetheless, collocations are "not noticed, not prioritized, or sidelined as too difficult to teach" (Wray, 2019, p. 260; see also Bishop, 2004; Boers, 2020; Boers, Demecheleer, et al., 2014; Kremmel et al., 2017; Larner, 2019; Laufer, 1989; Levitzky-Aviad & Laufer, 2013; Macis, 2018; Martinez & Murphy, 2011) for several reasons given in the literature. For one thing, collocations pass frequently unnoticed due largely to their 'deceptive transparency' (Laufer, 1989; Boers, Demecheleer et al., 2014; Boers & Webb, 2015) in text, irrespective of their compositionality. In fact, multiword expressions, especially collocations, seem more susceptible of 'deception' since they largely comprise very common words learners would assume to know (Boers, Demecheleer et al., 2014; Larner, 2019), and can consequently lead to misinterpretation (Boers & Webb, 2015). Wolter (2006) claims similarly that "learners will often make collocational errors even when they are familiar with the words that comprise the 'proper' collocation" (p. 746).

Macis (2018), for instance, explains how two of her participants misinterpreted the collocations *climb the wall* and *Big Brother* due to their deceptive transparency, even though the phrases occurred 15 and 7 times, respectively, in the novel. In a similar vein, Kremmel et al. (2017) attribute the failure of some students to correctly answer some reading comprehension questions in their study to the fact that they were unaware of the phraseological properties of such expressions in text reading, even though they demonstrated a decontextualized understanding of them. A corollary to this deception is a lack of attention to and taking notice of the salience of collocations in a text on the learners' part because "even if a learner has not seen a

given combination before, or not seen it very often, her inclination to regard words rather than chunks as the building blocks of text may prevent her from noticing the novelty at the phraseological level" (Boers, Demecheleer, et al., 2014, p. 45).

For another, the identification of unknown collocational combinations may be hindered due to the word boundaries imposed by written and spoken input (Bishop, 2004). EFL learners "generally lack awareness of the formulaic character of language" (Rott, 2009, as cited in Gholami, 2022, p. 451), and they also typically focus on the constituent elements of collocations, rather than their syntagmatic relationships (Altamimi & Conklin, 2023; Aron & Christiansen, 2017; Boers, 2020; Boers, Demecheleer, et al., 2014; Brown, 2016; Hill, 2000; Laufer & Waldman, 2011; Levitzky-Aviad & Laufer, 2013; Nesselhauf, 2003, 2005; Wolter, 2006).

And, lastly, for most L2 teachers, L2 vocabulary acquisition seems to be tantamount to learning individual words (Schmitt & Schmitt, 2020; Wood, 2020; Wray, 2002). As argued by some researchers (e.g., Meunier, 2012; Paquot, 2018), various forms of formulaic sequences (collocations, lexical bundles, etc.) are probably not prioritized by teachers, and formulaicity, even for trained teachers, is often associated solely with idioms. Due to various factors associated with collocations, such as L1-L2 incongruency, the arbitrariness of their nature, and their idiomaticity (see below), EFL learners may shy away from using them in their language production. They may instead "resort to high frequency single words which convey the same, or at least similar, ideas" (Levitzky-Aviad & Laufer, 2013, p. 144). This strategy, when reinforced by teachers holding the idea that effective communication in an L2 hinges merely on the EFL learners' creativity to use any appropriate vocabulary at their disposal, "perpetuates stagnation of vocabulary in free expression" (Levitzky-Aviad & Laufer, 2013, p. 144). Notably, recent research (e.g., Gholami, 2021, 2022, 2024; Gholami & Gholami, 2020) has demonstrated that during incidental focus-on-form teacher-learner communicative interactions, advanced EFL Iranian leaners made more errors with formulaic sequences (including collocations) whereas their EFL teachers provided corrective feedback significantly more often for students' non-formulaic than for formulaic errors. Such findings endorses the results of Brown's (2016) meta-analysis in which he found that morphosyntactic errors received more than half of the corrective feedback at the expense of other linguistic forms such as collocational combinations, and that this emphasis was more prevalent among EFL than ESL teachers.

2.1.3 Collocations can have figurative meanings.

Another feature of collocations that adds to their problematic nature for EFL learners relates to the fact that some collocations can have figurative meanings (usually in addition to a literal meaning) (Gyllstad & Wolter, 2016; Hinkel, 2019; Littlemore & Low, 2006; Macis, 2018; Macis & Schmitt, 2017a, 2017b; Obukadeta, 2020; Philip, 2011; Shi et al., 2023; Snoder, 2017). Such collocations are essentially "imbued with a bewildering range of connotative and associative meanings" (Philip, 2011, p. 26). These additional shades of meaning render such collocations 'semantically burdensome' (Obukadeta, 2020) and therefore problematic for L2 learners to process, learn, and produce (Macis & Schmitt, 2017a, 2017b; Obukadeta, 2020; Philip, 2011; Shi et al., 2023). As stated by Capel (2012), "even if learners know the top 2,000 words in English, the use of these words in phrases will not always be grasped, particularly when the meaning of the phrase as a whole is more figurative" (p. 8).

Examples of collocations with figurative meanings from the literature include: '*pull strings*', '*cut corners*' (Webb et al., 2013); '*bottom line*' (Wolter & Gyllstad, 2013); '*pay a visit*', '*draw a conclusion*',

'*serve a purpose*' (Gyllstad & Wolter, 2016; '*hot ticket*', '*top drawer*', '*big nose*' (Macis & Schmitt, 2017a); '*red tape*', '*acid test*', '*small potatoes*' (Macis, 2018; Macis & Schmitt, 2017b); '*shelve a plan*', '*foot the bill*', '*spell trouble*' (Snoder, 2017); '*carry weight*', '*new blood*' (Macis, 2018); 'cold war', 'cold feet' (Frankenberg-Garcia, 2018); '*food chain*', '*on the ball*' (Hinkel, 2019); '*tackle question*', '*bear burden/responsibility*', '*shoulder responsibility*' (Obukadeta, 2020); and '*build a career*' (Shi et al., 2023).

What's more, such collocations are considerable in terms of size (Macis & Schmitt, 2017a, 2017b). Macis and Schmitt (2017a) analyzed a small sample of 54 verb-noun and adjective-noun collocations formed around words from the 2,000 most frequent words in English. They found that 'figurative collocations' (those with figurative meanings which cannot be understood from their constituent words) and 'duplex collocations' (those with both a literal and a figurative meaning) collectively made up 22% of their sample. The authors considered this figure "a substantial percentage" (Macis & Schmitt, 2017a, p. 54) that "cannot be written off and ignored as peripheral behavior" (Macis & Schmitt, 2017a, p. 55). Shi et al.'s (2023) study also found that, compared to native speakers, advanced Chinese EFL students (even those at the doctoral and postgraduate levels) processed congruent figurative collocations (e.g., *build a career* vs. *build a house*) more slowly than literal collocation controls (*choose a career* vs. *choose a house*). Granted that frequency may not be the best guide to the likelihood of learning such collocations (Macis & Schmitt, 2017a), and given their substance and figurativeness and thus their problematic nature for L2 learners, researchers (e.g., Littlemore & Low, 2006; Macis & Schmitt, 2017a, 2017b; Philip, 2011; Shi et al., 2023) recommend that such collocations be explicitly taught to EFL learners. Specifically, Shi et al. (2023) suggest that such explicit instruction should focus on "entire combinations of figurative collocations rather than on lexical components" in the attempt to strengthen their form-meaning connection.

2.1.4 Collocations can be adjacent or non-adjacent.

A further related issue is the (non-)adjacency of some collocational constituents in meaningful input which might further compound the difficulties involved in the learning and production of collocations for EFL learners (Ackermann & Chen, 2013; Boers, Lindstromberg, et al., 2014; Vilkaitė, 2017; Vilkaitė & Schmitt, 2019; Wood, 2020). In the case of adjacent collocations, the constituent elements directly follow each other (e.g., *provide information*) whereas in non-adjacent collocations, some other words can intervene between the collocates or the collocates can be used in different morphological variations (e.g., *providing information, provide relevant information, relevant information was provided*; *carry out research, carry out much-needed research*) (see Frankenberg-Garcia, 2018; Vilkaitė, 2017; Vilkaitė & Schmitt, 2019).

For illustrative purposes, Vilkaitė and Schmitt (2019) investigated the incidental learning of 40 verb-noun collocations with an MI (mutual information) score of at least 3 (e.g., *abandon efforts*, *meet demand*, *exercise control*, *assume duties*) by forty EFL undergraduate and postgraduate students from various disciplines and from diverse backgrounds at a British university. Results of their eye-tracking study showed that these relatively advanced EFL learners read adjacent collocations faster than non-adjacent collocations. What's more, some collocations show positional variation (Ackermann & Chen, 2013; Yamagata et al., 2023, 2024). For instance, the noun-verb collocation *results obtained* can also be found in the form of the verb-noun collocation *obtained results* (Ackermann & Chen, 2013). These observations suggest that the non-adjacency and positional-variability characteristics of collocations can be a source of difficulty for EFL learners, even at advanced proficiency levels.

2.1.5 L1-L2 congruency is an important factor in collocation acquisition and use.

Still another crucial factor contributing to the difficulty of collocations for EFL learners is the notion of L1-L2 congruency, meaning that many of the collocation errors produced by these learners are assumed to be the result of 'interlingual transfer' (i.e., induced by the influence of L1). Interlingual transfer is associated with '(in)congruency' of collocations in the learner's L1 and the L2. A congruent L2 collocation is conceptualized as having "a corresponding equivalent in the L1 in terms of the core meanings of the constituent words, in a word-for-word translation" (Gyllstad & Wolter, 2016, p. 298). Indeed, the wealth of studies from different ESL/EFL contexts available in the literature pertinent to interlingual collocation errors is testimony to such a strong influence (e.g., Altamimi, 2024; Bahns, 1993; Bahns & Eldaw, 1993; Cangır & Durrant, 2021; Cao & Badger, 2023; de la Viña et al., 2024; Fan, 2009; Garner, 2022; Jiang, 2022; Jeong & DeKeyser, 2023; Laufer, 2011; Laufer & Waldman, 2011; Mekahli, 2024; Nagy, 2020; Nesselhauf, 2003, 2005; Obukadeta, 2020; Peters, 2016; Pulido & Dussias, 2020; Sadeghi, 2009; Sonbul & El-Dakhs, 2020; Szudarski & Conklin, 2014; Terai et al., 2023; Wang, 2011; Wolter & Gyllstad, 2011, 2013; Wolter & Yamashita, 2015, 2018; Wu et al., 2024; Yamashita, 2018; Yamashita & Jiang, 2010; Zhou, 2016). It seems that congruent collocations have an advantage over incongruent collocations because of their potential for easier processing and, thus, for learning (Gyllstad & Wolter, 2016). Yet, EFL learners have also the propensity to rely heavily on an 'open choice principle' rather than on the 'idiom principle' (Sinclair, 1991, 2004) in L2 collocation production. Therefore, to construct collocations, they are likely to look for individual words first, and then assemble them through an analytic word-by-word approach (Laufer & Waldman, 2011; Siyanova & Schmitt, 2008), rather than via an idiomatic approach. Echoing the same point, while L2 learners seem to rely on a hypothesis that idioms are language-specific and, as a result, non-transferable (Kellerman, 1978), they seem to operate with a 'hypothesis of transferability' regarding collocations, i.e., the fallacy that there is always a direct translational equivalence of L1 elements in L2 (Bahns, 1993).

For instance, in an early, highly-cited study based on a comparison between German and English, Bahns (1993) claims that "the majority of [verb-noun] collocational errors can be traced to L1 influence" (p. 61). Examples of interlingual transfer in Bahns (1993) include *make attention to* instead of *pay attention to* and *drive a bookshop* instead of *run a bookshop*. Nesselhauf (2003) attributed nearly 56% of the verb-noun collocational errors made by German advanced EFL learners to the influence of the L1, which Nesselhauf (2005) confirmed. Laufer and Waldman's (2011) learner corpus analysis showed that L1 was the source of around 57% of the errors across all levels. Moreover, of 47 error types found among 144 recurrent erroneous collocations in the corpus, 42 types were the result of the students' L1 interference. The highest percentage of interlingual errors found in this study again persisted at the advanced level (64.5%). The study conducted by Sadeghi (2009) in Iran indicated that, overall, L1 interference accounted for 85.7% of collocational problems for cohorts of both high school students and relatively advanced university students majoring in EFL, further corroborating previous findings. Obukadeta's (2020) corpus study also indicated that relatively advanced ESL learners' "productive knowledge of incongruent collocations lags behind their knowledge of congruent collocations" (p. 141).

#2.2. The typical characteristics of ELT in EFL contexts really matter.

In contrast to ESL contexts where opportunities for exposure to the language abound (Obukadeta, 2020; Parkinson, 2015; Yoon, 2016), ELT in many EFL contexts is characterized by various distinctive features

which tend to thwart implicit collocation learning as a viable strategy. It will be argued that these characteristics, some of the most important of which are discussed in this part, shed light on the necessity of explicit collocation instruction in such contexts.

2.2.1 EFL contexts are not conducive to incidental acquisition of collocations.

Some pedagogy-minded applied linguists advocate incidental learning of collocations (e.g., Nation, 2022; Schmitt & Schmitt, 2020; Webb & Nation, 2017), considering collocational knowledge to be largely implicit in nature. As a matter of fact, several studies in recent years have empirically demonstrated that form and meaning of collocations can be acquired incidentally from various modes of meaning-focused input such as reading, listening, reading-while-listening, online news, and TV viewing (e.g., Alotaibi et al., 2022; Dang & Long, 2024; Dang et al., 2022; Durrant & Schmitt, 2010; Jung & Lee, 2023; Jung et al., 2022; Lin, 2021; Macis, 2018; Macis et al., 2023; Pellicer-Sánchez, 2017; Pellicer-Sánchez et al., 2022; Peters et al., 2023; Pu et al., 2024; Puimège & Peters, 2019, 2020; Vu et al., 2023; Vu & Peters, 2022, 2023; Webb & Chang, 2022; Webb et al., 2013; Wongkhan & Thienthong, 2021).

For example, in a pioneering oft-cited study, Webb et al. (2013) embedded 1, 5, 10, and 15 encounters of a set of 18 collocations in modified short stories from a graded reader which 161 EFL Taiwanese university students listened to while reading. Results illustrated that 15 encounters with the target collocations led to significantly higher gains than 1, 5, and 10 encounters, both on the receptive and productive knowledge of form as well as on the receptive knowledge of form and meaning. The results led the authors to conclude that five or more encounters might be necessary for EFL learners to incidentally learning the *form* of collocations. But, as the authors acknowledge, the nature of the study needs to be borne in mind since only the receptive knowledge of *form* was measured at the pretest stage. Besides, the audio support of the reading in this study could have had an impact on learning gains. In two related studies, Pellicer-Sánchez (2017) and Pellicer-Sánchez et al. (2022) looked into incidental collocation learning by ESL learners at a British university through presenting them with a short story in which six adjective-pseudoword collocations (e.g., *loud twoser* meaning *loud noise*) were inserted 4 or 8 times, and were asked to read the story for comprehension. The participants' collocation knowledge was measured via a combination of paper-and-pencil and interview tests. Results were indicative of learning collocations incidentally from reading at the level of form recall and recognition, regardless of frequency manipulation (i.e., 4 vs. 8 occurrences). However, as acknowledged by the authors, the results of these studies should be interpreted with caution due to the use of a pseudoword as the second constituent in each collocation in the experiments, because "the novelty of the pseudoword is likely to catch a reader's attention" (Pellicer-Sánchez & Boers, 2019, p. 156). The *real* component parts of all the collocations used in the studies were made up of entirely familiar words (e.g., *small bowl*, *dirty clothes*, *loud noise*) which research (e.g., Godfroid, Boers, & Housen, 2013) has shown to attract little attention. Thus, "it is conceivable that their combination in a [real] wordstring will go unnoticed, too" (Pellicer-Sánchez & Boers, 2019, p. 156). Macis (2018) also examined three advanced L2 learners in detail while they read the 115,000-word semi-authentic novel in which 38 duplex verb-noun and adjective-noun collocations (i.e., those with both a literal and a figurative meaning) were seeded from 1 to 25 times. Through individual interviews, she found that collocational knowledge of more than half of the target collocations was incidentally enhanced either partially or fully for each participant in terms of meaning recall.

Taken together, the general claim made by such studies regarding incidental acquisition of collocations has been attenuated by a number of reservations expressed regarding its generalizability across types of collocations and learners of different characteristics. For instance, incidental acquisition of L2 collocations proves a slow process (Laufer & Waldman, 2011; Li & Schmitt, 2010; Macis, 2018; Peters, 2014; Yoon, 2016) and is incremental in nature (e.g., Macis, 2018; Nation, 2022; Puimège & Peters, 2020; Schmitt & Schmitt, 2020). Crucially, research (e.g., Choi, 2017; Durrant & Schmitt, 2010; Lin, 2021; Nattinger & DeCarrico, 1992; Pellicer-Sánchez, 2017; Pellicer-Sánchez et al., 2022; Peters, 2014; Peters et al., 2023; Puimège et al., 2023; Shabani & Abbasi Dogolsara, 2023; Sonbul & Schmitt, 2013; Szudarski & Carter, 2016; Toomer & Elgort, 2019; Webb et al., 2013) has indicated that 'frequency of occurrence' of the target collocation in the input is an important mediating factor in enhancing collocational knowledge. This incidental acquisition of collocations is rooted in usage-based approaches to L2 acquisition (e.g., Bybee, 2010; Ellis, 2002; Ellis & Wulff, 2020; Tomasello, 2003), according to which 'frequency of occurrence' is the *sine qua non* for the representation and acquisition of language items. In usage-based approaches, language (in) use is taken seriously, and they focus on "usage events", defined by Langacker (2008) as "actual instances of language use, in their ful phonetic detail and contextualized understanding" (p. 81).

However, individual collocations in most of the current textbooks in EFL contexts do not appear frequently enough to facilitate their acquisition without explicit instruction. The hiatus between the occurrences of the same collocation, if any, in such materials can be so long that the benefits of the re-encounters might be dwarfed. It is also extremely unlikely that slightly adapted and/or non-manipulated authentic texts brought occasionally to the classroom by teachers in some EFL classrooms contain enough exposures to the same target collocations (between 5 to 15) (e.g., Webb et al., 2013) in a short time span to provide learners with a real seedbed for incidental acquisition of them (Pellicer-Sánchez & Boers, 2019; see also Macis et al., 2023; Macis et al., 2021). For example, Boers and Lindstromberg (2009) identified 42 instances of verb-noun collocations (e.g., *commit suicide*) in 120 pages of a novel, and found that 35 instances (83%) occurred only once. Likewise, the phrase '*time and again*' has occurred only twice in Boers' (2021) 235-page book with a long-time span in between. Also, the likelihood that even quite common collocations (e.g., *make an effort*, *take place*) are encountered frequently enough during extensive reading (and listening) for incidental acquisition to occur is quite low (Boers & Lindstromberg, 2009; Nguyen & Webb, 2017) in EFL contexts. This is because "[t]he lower frequency of collocations in comparison to the component words will make it much more difficult to learn strings of words incidentally" (Nguyen & Webb, 2017, p. 315). For instance, the words *take* and *place* are encountered 864168 and 475496 times in the COCA respectively, but their quite common collocational combination *take place* has a frequency of 13684 (according to my corpus query in February 2024). This means that within the COCA, *take place* occurs once in around every 137,000 words. For native speakers of English this is not recognized as a big issue since they may be exposed to such collocations quite frequently through large amounts of meaning-focused input. In contrast, in the EFL context, it amounts to a very considerable amount of meaning-focused input to re-encounter the same collocation (Boers, 2021; Nguyen & Webb, 2017; Pellicer-Sánchez & Boers, 2019). This extensive amount of exposure to English is unlikely to be adequately resourced via the current ELT programs in EFL contexts (see below).

What is more, the contrived frequency of targeted collocational items in "flooded" or "seeded" (Boers, 2019; Pellicer-Sánchez & Boers, 2019; Szudarski, 2017) – or "artificially-enriched" (Durrant & Schmitt, 2010) – instructional materials typically found in the (mostly lab-based) studies aimed at

examining incidental learning of collocations (e.g., Alotaibi et al., 2022; Durrant & Schmitt, 2010; Jung et al., 2022; Macis, 2018; Pellicer-Sánchez, 2017; Pellicer-Sánchez et al., 2022; Peters et al., 2023; Szudarski & Carter, 2016; Vilkaitė, 2017; Webb et al., 2013) as well as the use of pseudowords in lieu of real words in some of those studies (e.g., Pellicer-Sánchez, 2017; Pellicer-Sánchez et al., 2022; Pu, Chang, & Wang, 2024) are faced with a lack of ecological validity in EFL contexts. As also pointed out by Snoder (2017), it is extremely unlikely that the instructional materials in EFL contexts contain 15 occurrences of verb-noun collocations as in Webb, Newton, and Chang (2013) and its replication study by Peters et al. (2023), 12 repetitions of verb-noun and adjective-noun collocations as in Szudarski and Carter (2016), 4 or 8 repetitions of adjective-pseudoword collocations as in Pellicer-Sánchez (2017), 20-25 occurrences of verb-noun and adjective-noun collocations as in Macis (2018), 8 repetitions of adjective-pseudonoun collocations as in Pellicer-Sánchez et al. (2022), 6 occurrences of adjective-pseudonoun collocations as in Jung et al. (2022), or 4 occurrences of verb-noun collocations as in Vilkaitė (2017). Besides, except for Vilkaitė's (2017) study, in which two slightly adapted informational texts relevant to the subjects' actual course were selected as reading materials, in almost all the studies in which incidental learning of collocations were reported, the materials exploited included graded readers or (short) stories. Even the authentic text used in Pu et al. (2024) was in fact a story with adequate comprehension level for both pre- and upper-intermediate university students in terms of vocabulary coverage and readability levels. The relative easiness of such reading materials ensures their comprehension which is fundamental to any learning to occur, collocations included. Such reading materials are, however, rarely used in many EFL contexts, especially in the mainstream high school education where ELT materials are locally designed by the Ministries of Education (MEs) and typically include short texts of predominantly informational nature. Consequently, the odds are that a collocation will occur more than once in such informational texts. Furthermore, in almost all these studies, intermediate to advanced L2 leaners at the university level have been recruited as the participants (Peters et al., 2023 is an exception in which secondary school students were also recruited as subjects). For instance, the 84 participants in Durrant and Schmitt (2010) were postgraduate students at the University of Nottingham at the time of the experiment. Likewise, the participants in Macis' (2018) study were advanced learners (PhD students) who had lived in England for around four years at the time of the study, and hence had had exposure to English frequently and abundantly.

All this means that it would take "large amounts of unmodified input to foster incidental acquisition of many FSs, and even so, certain types of FSs might just not occur the required number of times for considerable learning to occur" (Pellicer-Sánchez and Boers, 2019, p. 156). To conclude from this part, most of the current EFL settings fail to meet the frequency (or repetition) condition cited in the literature for the incidental learning of collocations to occur.

2.2.2 Collocations are on the periphery of ELT materials in EFL contexts.

Closely related to what was said in 2.2.1 above, the approach traditionally taken to collocation presentation in most EFL textbooks is also not conducive to the incidental acquisition of collocations (Boers et al., 2017; Boers, Demecheleer, et al., 2014; Brown, 2011; Coxhead et al., 2020; Hashemi et al., 2012; Koprowski, 2005; Li-Thi et al., 2017; Macis & Schmitt, 2017a, 2017b; Nesselhauf, 2005; Saeedakhtar et al., 2020; Sonbul & Schmitt, 2013; Tasi, 2015; Vu & Michel, 2021). Here, traditional coursebook instruction is operationalized as the instruction that is based exclusively on the materials and activities incorporated into the coursebook, including "meaning-focused input (reading texts, listening texts, instructions for tasks, etc.)

and vocabulary activities that occasionally include formulaic sequences, without formulaic language being the main focus of instruction" (Li-Thi et al., 2017, p. 132). Additional arguments in this regard come from the research finding that there is an obvious lack of a transparent, consistent, and systematic approach to vocabulary, and especially collocation, instruction in most EFL textbooks (Cao et al., 2022; Coxhead et al., 2020; Eid & Al-Jamal, 2023; Klinger, 2024; Schmitt & Schmitt, 2020; Sun & Dang, 2020; Tsai, 2015) in which the three psychological conditions (or cognitive processes) that are essential for the successful acquisition of collocations – i.e., *noticing*, *retrieval*, and *creative use* (Nation, 2022) - are followed. This necessitates modifications to the curricula in EFL contexts by teachers in order to cover the prescribed textbooks more effectively and simultaneously supplement them with various aspects of vocabulary knowledge in both contextualized and decontextualized forms (Nation, 2022; Schmitt & Schmitt, 2020; Woolard, 2000).

In EFL contexts, on the one hand, "coursebooks can never provide enough exposure and must be accompanied by substantial extensive listening and reading materials, so as to expose learners to a large number of collocations" (Tasi, 2015, p. 735; see also Hoang & Crosthwaite, 2024; Jordan & Gray, 2019; Tomlinson & Masuhara, 2013). On the other, in such contexts, particularly in formal school settings, the curriculum and class time make considerable demands on the teachers. This means that "very little class time can be dedicated to extensive reading [and listening] activities such that target collocations are generally not a focus of language instruction" (Tsai, 2020, p. 140; see also Puimège & Peters, 2019, 2020).

Another more crucial issue pertains to the lexical syllabus in EFL settings, for example, the senior high school context of Iran (see below). In such contexts, the lexical syllabus is usually a by-product of the curriculum, organized around other pedagogical considerations (e.g., grammar, reading and listening texts). Worse still, collocations are subservient to the new words in the materials utilized in these contexts (Hashemi et al., 2012; Mirzaei et al, 2016; Saeedakhtar et al., 2020; but see Cao et al., 2022, for the high school textbooks in Vietnam). In her detailed analysis of verb-noun collocation use by German advanced learners of English, Nesselhauf (2005) pointed out the serious deficiencies in the classroom teaching of these collocations, and concluded that "collocations … do not seem to be taught in a way that leads to their acquisition" (p. 238). Tsai (2015) paints a gloomier picture of this scenario in the case of collocations, stating that collocations "are often the by-product of the lexical syllabus, in the sense that they are presented along with target words, rather than being the focus of teaching" (p. 733). Brown (2011) analyzed the vocabulary activities in nine General English textbooks vis-à-vis the nine aspects of lexical knowledge proposed in the literature, and found that most textbooks do not give collocations due attention. Whereas form-meaning aspect received by far the most attention in those activities, only a marginal proportion (8%) of the vocabulary exercises in the textbooks was dedicated to collocations. Similar results were also reported in Vu and Mitchel's (2021) analysis of 873 vocabulary activities in four English for Academic (EAP) textbooks published by Cambridge and Oxford for upper-intermediate and advanced levels. Similarly, Boers et al. (2017), based on their analysis of 323 phrase-focused exercises incorporated into 10 globally-used general EFL textbook series, found that 61% of the collocation exercises in their sample were devoted to a range of the 'matching' type of practice. 'Gap-filling' at the sentence-level as well as discourse-level formats was the second most frequent type of collocation exercise (24%) in this sample. As concluded by the authors, matching and gap-fill exercises together seem to "make up the bulk (almost 85%) of the phrase-focused [collocation] exercises in contemporary EFL textbooks" (Boers et al., 2017, p. 76). The textbooks contained only a small proportion (6%) of other possible types of productive collocation exercises, such as

'sentence composition', whereby learners are required to contextualize given collocations by generating sentences of their own.

The scenarios described thus far in this section apply to many ELT materials for mainstream EFL contexts, particularly to the *Vision* textbook series designed locally for the current Iranian upper- secondary school education. First, the term 'collocation' is conspicuously absent in *Vision 1* and *Vision 2* where students are sporadically asked to match the constituents of some collocations in decontextualized form, without using the label 'collocation'. The term collocation is introduced surprisingly quite belatedly in *Vision 3* (Grade 12) (Alavi Moghaddam et al., 2018, p. 27) where students are expected to be at the CEFR B2 level (Council of Europe, 2020). To exacerbate the situation, the explicit teaching of collocation is presented as a *vocabulary development strategy* in only a single paragraph without any recycling in subsequent parts of the book. This manner of introducing collocations seems to run counter to the teaching guideline that teachers should "teach students the word 'collocation'" (Conzett, 2000, p. 75).

Second, collocations are treated somewhat perfunctorily in the whole textbook series at this level, as they contain only 15 instances of semi-incidental inclusion of collocational combinations (e.g., *blood pressure*, *heart attack*, *fossil fuels*, *renewable energy*) used as a pre-reading vocabulary activity. Of these, 13 collocations are typographically enhanced (i.e., typed in red) in a *single* sentence and embellished with a picture to represent the meaning, while the 2 others (*gain weight* and *mother tongue*) appear in a decontextualized form in a Word Bank tag (typed in blue) attached to the Conversation part. In both cases, however, the meaning of the collocational combinations are supposed to be guessed from the context of either the sentence or the conversation, rather than being defined, glossed, and/or recycled in varied contexts (see Conzett, 2000; Durrant & Schmitt, 2010; Jung et al., 2024). The rest of the collocation exercises in the *Vision* textbook series and the workbooks accompanying them almost invariably (39 instances) encompass a single decontextualized, 'matching' format: reassembling phrases from jumbled up constituents. Such form-recognition, decontextualized collocation exercises are arguably of less practical value than other types of activities in which learners are actively engaged in producing collocations (e.g., meaning-recall exercises) (Boers et al., 2017; Zwier & Boers, 2023). Yet, Boers et al.'s (2017) study demonstrated that "the exercise format in which students are asked to select intact expressions to fit sentential contexts" led to the highest gains at the level of both form recall and meaning recall (p. 373). The authors' recommendation was that instead of paying too much attention to the individual constituents of collocations, EFL instruction should focus on learning collocations as holistic units from the start (Boers et al., 2017). This suggestion is grounded in the idea that "in real language production learners need to be able to retrieve the collocations from memory instead of being presented with options to choose from" (Zwier & Boers, 2023, p. 153). Accordingly, Boers et al. (2017) called into question the effectiveness of collocation exercises in the current EFL textbooks whereby learners are required "to experiment with different word combinations before it is revealed to them which combinations are the ones to be retained in memory and which are the ones to be suppressed in future" (p. 77).

Still another issue that adds further complications to collocation teaching in most current EFL course books is that collocations are typically practiced in only one exercise (Boers, 2020), as is particularly the case with the *Vision* textbook series in Iran. And yet, research has illustrated that language use factors (i.e., 'engagement' with the L2 (see Hiver et al., 2024; Mercer & Dörnyei, 2020; Schmitt & Schmitt, 2020) facilitate the acquisition of collocations (e.g., González Fernández & Schmitt, 2015). Besides, repeated encounters with the same collocation during deliberate work can make a big difference (e.g., Durrant & Schmitt, 2010; Peters, 2014; Zhang, 2017). Along the same lines, Macis and Schmitt (2017a) reminded us

of the inadequacies of the ELT textbooks on the grounds that the semantic properties of collocations have received quite scant attention in the design of those textbooks. This, in turn, has culminated in adopting simplistic definitions of collocation by teachers that "focus on the pattern of co-occurrence in language, rather than the meanings that they may convey" (Macis & Schmitt, 2017a, p. 50).

Furthermore, learning materials typically exploited in EFL classroom-based contexts do not always provide a fair reflection of the collocational combinations that are conventional or common to native speakers (Boers & Strong, 2017; Brown, 2011; Hashemi et al., 2012; Koprowski, 2005; Koya, 2004; Macis & Schmitt, 2017a; Saeedakhtar et al., 2020; Tasi, 2015; Vu & Mitchel, 2021). Rather, if there is an explicit collocation component in a coursebook, program, or course, it is haphazard, ephemeral, and divorced from the rest of English instruction. Worse still, strong collocations and those with figurative meanings are seldom discussed and elaborated upon in ELT textbooks or materials as intact wholes (see Boers, Demecheleer, et al., 2014; Hill, 2000; Tsai, 2015; Macis & Schmitt, 2017a, 2017b). In the study by Saeedakhtar et al. (2020) in the EFL senior high school context of Iran, for example, participants exhibited total unfamiliarity with the term 'collocation', 82% of them had not paid attention to collocations before the intervention, 87% stated that school textbooks are void of collocations, and, more importantly, 83% reported that teachers do not pay attention to collocation instruction in their classes (see 2.2.3). Illuminated by such findings, it is not surprising that "EFL college students (English majors and non-English majors), high school students, and professors lack collocational knowledge" mainly because "collocation has been neglected in EFL classrooms" (Hashemi et al., 2012, p. 524).

2.2.3 Multiple modes of collocation input are not provided in many EFL contexts.

Incidental learning of collocations is affected by mode of input (Alotaibi et al., 2022; Boers, 2020; Dang & Long, 2024; Dang et al., 2021, 2022; de la Viña et al., 2024; Jung & Lee, 2023; Lin, 2021; Puimège & Peters, 2019, 2020; Tuzcu, 2023; Vu, Noreillie, & Peters, 2023; Vu & Peters, 2022, 2023; Webb & Chang, 2022; Webb et al., 2013), even though inconsistent findings have been reported in this respect (see Tuzcu, 2023; Pu et al., 2024; for discussions). This means that for collocation acquisition to occur incidentally, various modes of input (e.g., reading-while-listening, reading-while-listening plus textual enhancement) are required. To illustrate, Webb and Chang's (2022) investigation with EFL Taiwanese college students showed that reading-while-listening was more effective than reading or listening alone in incidental learning of 17 target collocations in the same graded reader. Similarly, results of the study by Vu and Peters (2022) indicated that form recall of 32 collocations learned from reading-while-listening was higher than the learning gains through reading-only for Vietnamese pre-intermediate, EFL university students. Vu and Peters (2023) also found that reading-while-listening plus textual input enhancement (i.e., underlining) and reading with textual input enhancement were more effective than reading-while-listening in learning 32 collocations by Vietnamese EFL leaners, as assessed at the level of form recall.

However, as already described in 2.2.2 (see also 2.2.4 below), the current condition of ELT in many EFL settings stands in a rather stark contrast to such research findings. To give an example from the present Iranian senior high school context, the overwhelming number of decontextualized, matching collocation exercises are presented only in the written mode in the Workbooks accompanying the Student Books. The author's classroom observations of a purposive sample of experienced teachers during the data collocation stage for a piece of research showed that the Workbooks are worked on only minimally. Such realizations point to the idea that, unlike ESL contexts, the multimodal presentation of collocations in the current EFL

academic milieus is a comparatively rare occurrence (see also Obukadeta, 2020; Parkinson, 2015; Yoon, 2016).

2.2.4 There is a lack of extramural English collocation learning in EFL contexts.

Still an important issue in EFL settings, like the senior high school context of Iran, is the notorious lack of extramural English (EE). EE refers to "learner-initiated informal (and typically voluntary) use of English in online and offline settings outside the walls of the classroom" (Schurz & Sundqvist, 2022, p. 934). This is done through engagement with a variety of activities in English such as viewing television in, listening to music, reading books, playing video games, and using the Internet and social networking for obtaining various types of information. Although it seems a contradiction in terms, some learners in some settings might also engage in EE inside the classroom. This happens, for instance, when during an English class students might watch YouTube videos in English on their own laptops or cell phones while they should be doing a different activity (Sundqvist, 2024).

Research has indicated that EE has the potential to foster EFL learners' language proficiency (for reviews, see Schurz & Sundqvist, 2022; Sundqvist, 2024; Wouters et al., 2024). More importantly, "the amount and type of informal exposure learners have to English outside the classroom can affect the degree to which collocations are learned", as suggested by González Fernández and Schmitt (2015, p. 110). As an example, research has illustrated that watching L2 television might be an effective way to incidentally acquire knowledge of formulaic language (e.g., Lin & Siyanova, 2014; Majuddin et al., 2021; Puimège & Peters, 2019, 2020). Specifically, in the study by González Fernández and Schmitt (2015) with 108 Spanish learners of English from the beginning to advanced proficiency levels, several EE activities were correlated with collocation acquisition: emersion in English-speaking countries .64, reading .61, TV/films .38, and social media .33.

However, in many EFL countries like Iran, language policies ban, or at least restrict, the import of English terms and the use of English in public life. To give a concrete example, almost all English films and TV series shown on the national TV in Iran are dubbed into Persian (or Farsi). The use of such EE activities in the classroom is also not allowed normally in the country, as they are viewed as a "nuisance" (Ur, 2012, p. 213) most likely on socio-cultural and socio-political grounds, but also on grounds of "media-hyped dangers – sexual predators, cyberbullying, and pornography" (Rosen, 2010, p. 104). Similarly, constraints of computer and electronic device usage for collocation learning in classrooms were reported by Chinese EFL senior secondary school students in Fang et al. (2021). Similar assertions concerning the conspicuous lack of the application of corpora and other technologies to collocation learning in pre-tertiary levels have been made in the literature (e.g., Boulton & Cobb, 2017; Saeedakhtar et al., 2020; Ueno & Takeuchi, 2023).

2.2.5 EFL learners tend to overuse, underuse, or misuse collocations.

Research also indicates that EFL learners tend to adhere to and overuse a rather limited range of high-frequency, but low-stakes collocations with which they are familiar and feel more confident about – what has been termed 'lexical teddy bears' (Nesselhauf, 2005) and 'safe bets', 'zones of safety', 'islands of reliability', or 'frames' (e.g., Boers et al., 2006; Boers & Lindstromberg, 2009; Nattinger & DeCarrico,

1992) – while they show a general proclivity towards underusing less frequent, but strongly associated ones (e.g., Altenberg & Granger, 2001; Biber & Gray, 2013; Cao & Badger, 2023; Chen, 2019; Durrant & Schmitt, 2009; Fan, 2009; Granger, 1998, 2019; Granger & Bestgen, 2014; Howarth, 1998; Li & Schmitt, 2010; Ellis et al., 2008; Obukadeta, 2020; Siyanova-Chanturia & Schmitt, 2008; Tasi, 2015; but see Garner, 2022; González Fernández & Schmitt, 2015). Examples of the former include *good example*- 4,052 instances in the COCA, *long way*- 13,777, and *hard work*- 11,986, while *densely populated*- 952, *preconceived notions*- 112, *abject poverty*- 245, *resist temptation*- 75, and *bated breath*- 142 are examples for the latter. Indeed, it is the use of such native-like "significant collocations" that distinguishes higher-level learners from lower-level ones, as the latter are characterized as having "an undeveloped sense of salience and of what constitutes a significant collocation" (Granger, 1998, p. 6).

For instance, Granger (1998) looked at '-ly intensifier + adjective' collocations produced by advanced French learners of English in their academic essays and compared them with similar essays written by native English students and found that the former underused 'boosters' (e.g., *strongly*, *highly*, *deeply*) in their essays. She concluded that although advanced French learners of English did use collocations in their essay writing, they tended to underuse native-like collocations but overuse unidiomatic pairings of words through direct L1 translation. Howarth (1998) reported that 'restricted' *verb-noun* collocations (e.g., *make a claim*, *reach a conclusion*) were employed by advanced non-native MA students about 50% fewer than natives in written academic corpora. Altenberg and Granger (2001) found that a high-frequency verb like *make* engendered great difficulty for their EFL learners, even at an advanced proficiency level. As a result, delexical uses of *make* (e.g., *make a decision*) as well as its causative uses (e.g., *make something possible*) proved to be particularly problematic for these learners. Nesselhauf's (2003) study with advanced German-speaking learners of English in free written production showed that her learners made the greatest proportion of errors (79%) with verb-noun collocations (e.g., *take a break*, *take a picture*, *shake one's head*). One of the three studies in Siyanova-Chanturia and Schmitt (2008) focused on adjective-noun collocations used by advanced Russian learners of English and native university students in their academic writing. The authors found that only 45% of the collocations employed by advanced Russian students in their academic written texts were frequent and strongly associated English collocations. Durrant and Schmitt's (2009) study of the comparison between advanced L2 learners' and English native speakers' use of 'premodifier-noun' collocations in their writing also found that L2 learners overused highly frequent collocations and underused lower-frequent, but strongly associated collocations (i.e., those with high mutual information, or MI, scores). Li and Schmitt's (2010) study on the use of adjective-noun collocations in the academic writing assignments of four advanced Chinese learners of English over the course of one academic year (12 months) at the University of Nottingham showed that these postgraduates, as a whole, used fewer adjective-noun collocations, and tended to use a small number of such collocations more repetitively. As stated by the authors, "relatively little substantial change [occurred] in the production of adjective-noun collocations over the course of an academic year" in these advanced EFL writings (Li & Schmitt, 2010, p. 41). Similarly, Tsai (2015) found that Taiwanese EFL students at the A2-C1 proficiency levels exhibited a stark difference from native speakers in terms of collocation type-token-ratio in argumentative essay writing (13.63% vs. 56.23%). Even though these learners used more collocation tokens (collocation quantity) in their essays than did native speakers, there was a stark difference between the two groups in terms of collocation type (collocation diversity). In other words, EFL leaners' use of diverse collocations to express meanings in their essays was hampered by their limited repertoire of collocations in such a way that the collocation *attend class* inserted in the instructions for writing appeared 1213 times, making up a quarter of the collocation

tokens (Tasi, 2015). Chen and Baker (2016) analyzed the discourse features in written corpora of Chinese EFL learners, and found that while only writing of proficient learners (C1) was close to that of academic prose, the discourse of learners at B1 and B2 levels "tend[ed] to share more features with conversation" (p. 849). Finally, Yoon's (2016) study into the development of the association strength of verb-noun collocations in the argumentative and narrative writings of 51 high-intermediate ESL students over one academic semester showed no change in the association strength of the learners' verb-noun collocations (as measured via MI and frequency), especially in argumentative writing. One conclusion drawn from his analysis was that ESL students overused weaker high-frequency collocations in both types of genres (with a less diverse range of verbs), but underused stronger low-frequency collocations. Yoon's (2016) analysis showed that many of the collocational combinations in the ESL students' essays included high-frequency (general) verbs (e.g., *have*, *make*, *take*, *get*, and *do*) and that these verbs had semantically comparable counterparts with much higher association strengths typical of academic genres (e.g., *get conclusion* vs. *draw conclusion*, *get confidence* vs. *gain confidence*, *have information* vs. *retain information*, *make party* vs. *throw party*, *make research* vs. *conduct research*, *make crime* vs. *commit crime*, and *do rule* vs. *establish rule*). Based on these findings, Yoon (2016) suggested that "ESL writers need more explicit instruction encouraging verb-noun combinations with specific lexical items (i.e., strongly associated) for formal and academic writing tasks" (p. 54).

Equally important, EFL learners tend to misuse collocations, producing unconventional lexical combinations that deviate from the 'institutionalized' norms of a particular academic discourse (Cao & Badger, 2024; Howarth, 1998; Pawley & Syder, 1983; Nattinger & DeCarrico, 1992; Nesselhauf, 2003, 2005; Swales, 1990). Examples from Cao and Badger (2023) include *dominate drawbacks*, *release stress*, and *attain scholarship*.

2.2.6 Attention-drawing techniques alone are not sufficient for the acquisition of collocations in EFL contexts.

One of the semi-incidental (Pellicer-Sánchez & Boers, 2019; Schmitt & Schmitt, 2020) techniques frequently mentioned in the literature for teaching formulaic sequences is the use of attention-drawing, or awareness-raising, techniques. Such techniques embrace input enhancement (e.g., bolding, highlighting, underlining, italics, and quotation marks), input flood/ input enrichment (e.g., glossing), or a combination of both (e.g., input enhancement + glossing). Input enhancement, defined as "pedagogical techniques designed to draw L2 learners' attention to formal features in the L2 input" (Kim, 2006, p. 345), aligns with Schmitt's (2001) *Noticing Hypothesis* according to which increased attention and noticing are essential for subsequent retention of target language items. Applied to vocabulary and formulaic sequences, noticing is the first cognitive process to stimulate learning and involves directing learners' attention to these linguistic items and making them cognizant of their salience and usefulness (Jones & Haywood, 2004; Nation, 2022). Input flood is also informed mainly by usage-based accounts of L2 acquisition (e.g., Ellis, 2002) as well as a large body of research showing that 'frequency of exposure' is key to gaining proficiency in an L2 (see Nation, 2022; Peters et al., 2023; Schmitt & Schmitt, 2020; Uchihara et al., 2019; see also 2.2.1). For instance, Uchihara et al.'s (2019) meta-analysis of 45 effect sizes from 26 studies found a medium effect ($r = .34$) of repetition on incidental vocabulary learning. Such attention-drawing techniques are presumed to lead to the promotion of both 'depth of processing' and higher engagement with the target items on the grounds that learners' attention is explicitly (or directly) drawn to the enhanced items, and hence making

them more perceptually salient and noticeable (Altamimi & Conklin, 2023; Puimège et al., 2024; Toomer et al., 2024). In fact, a handful of studies in recent years have focused on the effect of awareness-raising on the processing and/or learning of collocations from the written (and spoken) input through both offline, online (i.e., eye-movement), and text-audio synchronization procedures (e.g., Altamimi & Conklin, 2023; Boers, Demecheleer, et al., 2017; Boers, Eyckmans, et al., 2006; Choi, 2017; Jung & Lee, 2023; Jung et al., 2024; Majuddin et al., 2021; Puimège et al., 2024; Sonbul & Schmitt, 2013; Szudarski & Carter, 2016; Toomer & Elgort, 2019; Toomer et al., 2024; Tuzcu, 2023; Vu & Peters, 2022, 2023).

In most of the studies in which traditional (offline) measures of explicit collocational knowledge (e.g., form recognition, form recall, and/or meaning recall) were mostly or exclusively used to measure learning gains (e.g., Boers, Demecheleer, et al., 2017; Sonbul & Schmitt, 2013; Szudarski & Carter, 2016; Toomer & Elgort, 2019; Toomer et al., 2024; Vu & Peters, 2022, 2023; but see especially Puimège et al., 2024; Szudarski & Carter, 2016; Toomer et al., 2024), results overall seem to attest to greater learning gains accrued from the input enhancement of collocations. To give an example, Sonbul and Schmitt (2013) carried out a study (Experiment 2) with 43 ESL advanced postgraduate students from different L1 backgrounds at a British university in which 15 intact medical collocations (*vanishing lung*) were used in three conditions: enriched input (3 occurrences of each collocation), enhanced (red, bold), and decontextualized (direct, out-of-context instruction of collocations for memorizing). On measures of explicit knowledge (i.e., form recognition and form recall), all the conditions led to significant gains in collocation knowledge, testifying their effectiveness in facilitating collocation learning. Furthermore, the enhanced condition resulted in better gains than the enriched condition; however, it was not more effective than the decontextualized condition. On measures of implicit learning (primed lexical decision), there was no difference between the three conditions, suggesting that none of these conditions can facilitate implicit learning of collocations. One limitation of this study was that it did not measure the form-meaning aspect of knowledge of collocations; thus, it is not clear whether the students can use those collocations in actual production. This limitation was addressed in Szudarski and Carter (2016) in which the authors explored the effects of two types of instruction on the acquisition of verb-noun and adjective-noun collocations of 41 EFL Polish senior high school students: input flood only (6 to 12 repetitions) and input flood plus input enhancement (underlining). The study found that input enhancement of collocations resulted in superior gains from a form recognition and a form recall test, but not from a meaning recognition test and that collocation enhancement obviated the need for more exposures. In the eye-tracking study carried out by Choi (2017), 38 Korean EFL college students read an authentic text in two conditions: textually enhanced collocations (i.e., bolded) or unenhanced collocations. The 14 enhanced collocations generated more and longer fixations, indicating that these items attracted more attention than unenhanced items. In a post-reading collocation recall test, the input-enhanced group also performed better than the unenhanced group. However, apart from the enhanced collocations, the experimental group recalled significantly less unenhanced text segments than the control group. The two groups also did not differ significantly in their processing of familiar collocations. Toomer and Elgort (2019) conducted a conceptual replication of Sonbul and Schmitt (2013) in which 62 advanced ESL students were divided into three incidental experimental conditions: no typographic enhancement, bolding, and bolding-plus glossing. The 15 target medical collocations were repeated nine times in nine reading texts for the three treatments. Results of explicit measures (pen-and-paper cued recall and form recognition tests) overall showed that all three conditions resulted in posttest knowledge gains of collocations although "[r]epeated exposure to bolded collocations produced greater explicit knowledge than repeated exposure to typographically unenhanced collocations"

(Toomer & Elgort, 2019, p. 405). However, implicit learning (measured via primed lexical decision) was evidenced only in the unenhanced condition, supporting the results of Sonbul and Schmitt (2013). Lastly, Toomer et al. (2024) compared the effects of repeated exposures (12 occurrences) of typographically-enhanced (i.e., bolded) lexical (verb-noun; *raise the issue*) and grammatical (preposition-noun; *at issue*) with unenhanced lexical and grammatical collocations. Their subjects were Chinese ESL students at a university in an English-speaking country. Results of their cued-recall, gapfill post-test reveal that, compared with the unenhanced condition, bolding produced greater number of accurate responses with grammatical (but not lexical) collocations.

As noted, despite some conflicting findings (see Puimège et al., 2024; Szudarski & Carter, 2016; Toomer et al., 2024), such line of research, broadly speaking, suggests that typographic enhancement helps leaners to better 'remember/recall' collocations in written and spoken input (e.g., Boers et al., 2017; Choi, 2017; Sonbul & Schmitt, 2013; Szudarski & Carter, 2016; Toomer & Elgort, 2019; Vu & Peters, 2022, 2023). However, awareness-raising techniques alone do not guarantee the acquisition and proper use of collocations. As highlighted by Laufer and Waldman (2011), "the real problem of collocations in L2 does not lie in recognition but in learning to use them properly" (p. 652). According to Boers, Eyckmans, et al. (2006), "[n]oticing may be a prerequisite for learning, but it does not necessarily guarantee the acquisition of every single element that gets noticed" (p. 257), a view echoed by Puimège at al. (2024). The review of intervention studies by Boers and Lindstromberg (2012) illustrated that such techniques are unlikely to bring about substantial gains in collocation acquisition (p. 99), a finding which is also buttressed by Peters and Powels (2015). Importantly, although drawing learners' attention to the form and lexical make-up of collocations can lead to a more durable memory trace (Boers, Demecheleer, et al., 2017), such noticing of collocation form does not readily culminate in the retention of semantic knowledge which involves a deeper and more elaborate level of analysis and processing (e.g., Leow & Martin, 2017) for the collocation to be used in language production. Snoder (2017, p. 142) succinctly summarizes Boers and Lindstromberg's (2009) criticism of an overreliance assumed in the 'learner autonomy hypothesis' to notice and acquire collocations independently: "(a) identifying collocations requires expert help from teachers or learning sources, (b) it overestimates learners' willingness to engage in such activities extramurally, and (c) it disregards the role of memory in internalizing unknown lexical 'chunks'". A similar complaint is also voiced by Nesselhauf (2003) regarding the emphasis on raising L2 learners' awareness of collocations in lieu of explicit teaching of them. Furthermore, attention-drawing can take attention away from other, unenhanced, parts of the text (Choi, 2017) or, alternatively, the target collocations themselves may be of low perceptual salience in the sense that they may not attract learners' particular attention to their form (Puimège et al., 2024).

Still another contributing factor to incidental collocation learning in this strand of research is related to the context and the proficiency level of the learners in most of those studies. The majority of the studies reviewed above (e.g., Boers, Demecheleer, et al., 2017; Sonbul & Schmitt, 2013; Szudarski & Carter, 2016; Toomer & Elgort, 2019; Toomer et al., 2024) exploited ESL learners studying in English-speaking countries at the time of the study, which means that they had adequate exposure to the language through the context. By way of example, the participants in Toomer and Elgort (2019) were upper-intermediate to advanced levels with a mean vocabulary size of 9,000 word families and a mean of 3.93 years spending in English-speaking countries. While Boers et al. (2017) call their participants 'EFL' learners, they were living in a region of Belgium "where people [were] exposed to English on a daily basis, mostly through British, American and Australian TV programs, films, pop music, computer games, and (other) English-medium

entertainment on the internet" (p. 452). Moreover, the participants were English majors at university (first- and third-year students) with intensive programs comprising six hours per week. Such learning conditions are a far cry from the ones in most (if not all?) EFL contexts where there is a notorious "poverty" of exposure both inside and outside the classroom (see 2.2.1 and 2.2.4). Finally, and perhaps most importantly, is the finding that gaining initial 'receptive' knowledge of collocations would require at least 8-10 encounters (Durrant & Schmitt, 2010), and that sizable learning gains would require 15 (Webb et al., 2013) or even 25 (Macis, 2018) exposures. As already pointed out in 2.2.1, such manipulated frequencies of collocations lack ecological validity in EFL academic contexts.

In a nutshell, the above-mentioned findings notwithstanding, durable collocational gains cannot always be accrued from purely semi-incidental exposures (e.g., Puimège et al., 2024; Szudarski & Carter, 2016). This means that awareness-raising might be effective only when combined with other types of (explicit) instruction (Altamimi & Conklin, 2023; Toomer & Elgort, 2019; Szudarski, 2012; Szudarski & Conklin, 2014; Zaabalawi & Gould, 2017).

#3. Non-conformity to native-like collocations can have serious repercussions for EFL learners in academic settings.

As also argued by Askari & Naghdipour (2021), learning and using collocations can be extremely beneficial for learners of English, especially EFL learners. Due to the pervasiveness of collocations in academic language, their centrality in academic settings has been well-documented (e.g., Ackermann & Chen, 2013; AlHassan & Wood, 2015; Conzett, 2000; Coxhead & Byrd, 2007; Durrant, 2009; Granger, 2022; Hinkel, 2019, 2023; Hyland, 2008, 2012; Lewis, 2000a; Lei & Liu, 2018; Peters & Pauwels, 2015; Polio & Yoon, 2021; Szudarski, 2023; Xia et al., 2023; Yoon, 2016). According to Lewis (2000a), "in academic writing, where the focus is almost exclusively on accurate communication of information, among colleagues with a shared background in a particular topic, standard words, phrases, collocations and other chunks are an essential prerequisite for effective communication" (p. 189). These word combinations constitute "a key component of fluent linguistic production, marking out novice and expert use in a range of genres" (Hyland, 2012, p. 150). In fact, the recursiveness of such collocations in various academic genres "suggests at least some perceptual salience among users and conventionalization within a particular discourse community" (Hyland, 2012, p. 152; Murray, 2017). For instance, (extended) collocations like *as a result of*, *research findings*, and *table of results* help to identify that a text belongs most likely to an academic register/genre, whereas *with regard to*, *in pursuance of*, *pursuant to*, *evidence to the contrary*, and *in accordance with* are more likely to demarcate a text as legal (Hyland, 2008, 2012). Likewise, formulaicity, including the appropriate use of collocations, can be considered to constitute "the skeleton of L2 learners' proficient academic writing" (AlHassan and Wood (2015, p. 61) because formulaicity is crucial for "the development of writing that fits the expectations of readers in academia" (Coxhead & Byrd, 2007, p. 135), its underuse in students' writing "may mark a writing assignment as inappropriate and too colloquial" (Peters and Pauwels, 2015, p. 29), and its misuse "will make foreign language learners sound odd and non-native like" (Peters and Pauwels, 2015, p. 29). Vilkaitė's (2016) analysis of the *BNC Baby*, a sub-corpus of the British National Corpus (BNC), also indicated that of the whole 32.44% formulaic language in the register of 'academic prose', 9.72% belonged to collocations. Similarly, Lei and Liu (2018) point to the "important functions" that collocations perform in academic writing (p. 234) such as 'hedging' (e.g., *tentatively suggest*, *likely explanation*) and 'reporting and interpretation' (e.g., *indicate a correlation*, *suggest a*

possibility). The authors insist that both ESL/EFL learners and teachers need to become familiar with such functions of collocations. As stated by Hinkel (2019), "[t]he teaching of academic writing […] may be difficult to carry without teaching recurrent academic collocations and multiword units" (p. 126; see also Hinkel, 2023). Additionally, within academic writing, EFL learners have been found to overuse lexical combinations more appropriate to spoken discourse (Coxhead & Byrd, 2007; Gilquin & Paquot, 2008; Yoon, 2016).

In fact, due to the specific importance attached to collocation teaching and learning in academic contexts, several attempts have been made in recent years to promote the accessibility and acquisition of collocations (see Szudarski, 2023, for a recent overview of corpora and collocations). For example, collocation dictionaries have been compiled (e.g., Benson et al., 2010; Hill & Lewis, 1997; Lea et al., 2002; Mayor, 2013; McIntosh et al. 2009; Rundell, 2010). Lists of collocations for pedagogic purposes have also been provided (e.g., Ackermann & Chen, 2013; Chon & Shin, 2013; Durrant, 2009; Green, 2019; Green & Lambert, 2018; Jablonkai, 2020; Khamkhien & Wharton, 2020; Lei & Liu, 2018; Nguyen & Coxhead, 2023; Shin & Nation, 2008; Uhrig & Proisl, 2012; Zhou, 2016). Still, the relative efficacy of specific exercises apropos of enhancing L2 collocation knowledge have been examined (e.g., AlHassan & Wood, 2015; Boers et al., 2017; Boers, Demecheleer, et al., 2014; Boers & Strong, 2017; Durrant & Schmitt, 2010; Jeong & DeKeyser, 2023; Murray, 2017; Peters & Pauwels, 2015). And, most importantly, tools, frameworks, guidelines, activities, and procedures for semi-explicit and explicit teaching of collocations have been devised (e.g., Altamimi & Conklin, 2023; Boers, Eyckmans, et al., 2014; Chen, 2019; Fang et al., 2021; Farshi & Tavakoli, 2021; Franken-Garcia et al., 2019; Handl, 2008; Hill et al., 2000; Jung et al., 2024; Lewis, 2000, 2008; Liu, 2010; Martinez, 2013; Mirzaei et al., 2016; Murray, 2017; Nagy, 2020; Pakzadian, 2023; Peters, 2016; Peters & Pauwels, 2015; Puimège et al, 2023, 2024; Pulido & Dussias, 2020; B. L. Reynolds, 2016; B. L. Reynolds & Teng, 2021; Snoder & B. L. Reynolds, 2019; Sonbul & El-Dakhs, 2020; Sonbul & Schmitt, 2013; Szudarski, 2012, 2017; Szudarski & Carter, 2016; Toomer & Elgort, 2019; Toomer et al., 2024; Tsai, 2020; Ting & Lin, 2015; Walker, 2011; Yamagata et al., 2023, 2024; Zaabalawi & Gould, 2017; Zhang, 2017).

By way of example, Martinez (2013) proposed the Frequency-Transparency Framework (FTF) to help teachers prioritize multi-word expressions as a target for explicit instruction. Applied to collocations, based on this framework, if there are two frequent collocational phrases of similar frequency but different degrees of semantic transparency, priority should be given to the more opaque collocation. Also, if of the two infrequent collocational phrases one is transparent and the other is opaque, the opaque one should be given precedence for explicit instruction because it might act as a barrier to comprehension. Ackermann and Chen (2013) compiled a list of 2,468 various cross-disciplinary lexical collocations that are frequently used in English academic discourse. Their collocation list gives precedence to strongly associated content words, i.e., 'restricted collocations' with high MI scores. Such collocations "are pedagogically relevant in an EAP context" (Ackermann & Chen, 2013, p. 246) and hence deserve explicit instruction. Examples include: noun-noun (*background knowledge*, *source material*); adjective-noun (*conflicting interests*, *conventional wisdom*); verb-noun (*cast doubt*, *take precedence*); verb-noun (*adversely affect*, *closely resemble*); verb-adverb (*differ significantly*, *expand rapidly*); adverb-adjective (*slightly different*, *mutually exclusive*); and adverb-verb (*deeply rooted*, *inextricably linked*). Lei and Liu's (2018) academic English collocation list (AECL) for ESL/EFL learners, complied from six different corpora, is composed of 9,049 collocations (with an *MI* score of at least 3 and a *T* score of at least 2) of eleven patterns commonly used

for general *academic* English purposes. The items on this list "perform semantic functions that are specific to academic English" (Lei & Liu, 2018, p. 233). Samples of collocations for the noun '*study*' from AECL commonly found in research articles are: *descriptive/pioneering study*; *conduct/deserve/replicate study*; *case/pilot study*; (the) *study addresses/confirms/explores/fails/reveals/utilizes*.

Accordingly, the so-called native-like collocations (e.g., *heavily loaded*, *deeply rooted*, *highly estimated*) that Reynolds (2019) deems as 'trivial' items and, hence, not deserving of being taught in EFL classrooms, are in fact statistical collocations with high MI scores that "are perfectly natural combinations of words and even restricted collocations that convey precise meaning and are typical of academic prose" (Paquot, 2018, p. 39). Stated another way, such tightly-associated collocations indicate "extremely precise, irreplaceable vocabulary use" (Xu, 2018, p. 264). Even more importantly, the mean MI score in such collocations has been found to be the most effective measure of assessing the quality of L2 learners' writing in academic contexts (Bestgen, 2017, p. 74). Moreover, most of such items are incongruent collocations and/or academic English collocations that are "motivated", i.e., they "are shaped by the semantic functions they perform in academic [contexts]" (Lei & Liu, 2018, 231). Hence, such collocations "should be regarded as strong candidates for [explicit] classroom instruction" (Szudarski, 2017, p. 213). From this perspective, if collocation learning by EFL learners should be based only on 'frequency' of collocations alone (as implied in Reynolds, 2019), and not on strength of association between them (i.e., MI value), "it is unsurprising that they fail to develop a repertoire of low-frequency, high-MI collocations" (Durrant, 2014, p. 472).

More examples for such statistical (or restricted) collocations with MI scores of 3 and above (following Hunston, 2002) include: *hardly surprising*, *distinctly unenthusiastic* (Hunston, 2002); *densely populated*, *preconceived notions* (Durrant & Schmitt, 2009); *traffic jam*, *alcoholic beverage* (Bestgen & Granger, 2014); *unforeseen circumstances*, *exploit resources*, *overcome difficulty* (González Fernández & Schmitt, 2015); *target audience*, *highly controversial* (Bestgen, 2017); *potential conflict*, *antique furniture* (Macis & Schmitt, 2017a); *overwhelming majority*, *integral part*, *corroborate findings*, *fill a gap* (Paquot, 2018); *exhaustive list*, *wide variety*, *serve purpose* (Paquot, 2019); and *vast majority*, *ultimate goal* (Nguyen & Coxhead, 2023).

Particularly, in the context of high-stake national and international tests, non-conformity to these native-like use of collocations can have serious academic repercussions for the future of EFL candidates. These issues also apply equally to two nationally administered high-stakes tests in Iran as well as to standardized international tests (e.g., IELTS). The different parts of the English Test for university admission examination in Iran (called English *Konkur*) for senior high school students wishing to pursue their higher education in English-related majors are indeed replete with low-frequent, but strongly associated, collocations. Examples include *tip-top shape* (86 instances in the COCA), *have the lead* (73), *exact replica* (193), *persistent offender* (2), *potentially toxic* (139), *appalling state* (12), and *extensive treatment* (57). To give more concrete examples, in the 2023 and 2024 English *Konkur*, answering 13 and 16 out of the 20 multiple-choice questions dedicated to vocabulary items hinged upon knowledge of collocational combinations, respectively (not to mention those in other parts of the test). For illustrative purposes, three examples from the 2023 (items 24, 28, and 35 on the test) and three from the 2024 (items 21, 24, and 32) English *Konkur* are given below.

24. My wife was *deeply depressed*, and I too was an *emotional wreck* as I tried to ------- *the demands* of work and family life.
      (a. juggle   b. yieldc. ban   d. resist)

28. The tourists may not *stand much* ------- of discovering *ancient relics*, but they still visit the farm in the hope of finding something unusual.

   (a. promise b. opportunity c. possibility   d. chance)

35. If you suffer from a *chronic* ------- like allergies, asthma, or depression, there are both *over-the-counter* and *prescribed medications* that can help *alleviate the pain*.

   (a. condition   b. situation   c. mode   d. circumstance)

21. Some are allowed to *take early* -------, including the military, police officers, and people with *physically-demanding jobs*.

   (a. retirement   b. wage   c. suspension   d. migration)

24. If we do not actively try to *preserve* our -------, we risk losing the common experience that makes each of us who we are.

   (a. scope   b. future   c. satisfaction   d. heritage)

32. As they cannot work legally in Thailand, they have little option but to ------- *a living collecting rubbish*, or to *take ill-paid* informal *work* on *construction sites*.

   (a. seize   b. grip   c. lead   d. scratch

In each instance, senior high school students in Iran are already familiar with one constituent of the collocation as they are among the list of words incorporated in their ELT textbooks: *demand* in 24, *chance* in 28, *condition* in 35, *retirement* in 21, *heritage* in 24, and *living* in 32, respectively. However, the whole collocations, as a unit of language, are virtually nonexistent in their textbooks. The same situation goes for the rest of the collocational pairings italicized in the stem of these items, too.

The second important role ascribed to collocational knowledge in the EFL context of Iran can be seen in the National Matriculation English Test (NMET) for senior high school students. On this nationally administered high-stake language test, students are required to respond to a variety of writing tasks the most challenging of which is to write a short informational essay on a familiar topic following a generic writing pattern: an introductory paragraph, the main body, and a concluding paragraph. Success in this integrated reading-writing task relies heavily on students' ability to make use of the rhetorical organization features of English (e.g., definition-example, description, explanation, comparison-contrast, cause-effect, problem-solution, process/sequence, and argumentation) that typify expository and persuasive texts. Considerable importance is attached to text quality on this task, particularly using appropriate (native-like) collocations to convey the intended meaning.

This emphasis on collocation in academic writing is also justified by several recent research findings in various academic settings (e.g., Bestgen, 2017; Bestgen & Granger, 2014; Coxhead & Byrd, 2007; Crossley et al., 2015; Garner, 2022; Garner et al., 2019, 2020; Granger & Bestgen, 2014; Tsai, 2015; Yoon, 2016). For example, Tsai (2015) found that Taiwanese EFL undergraduate students "did use and/or [had] the need to use collocations in [argumentative essay] writing, even in a way much denser than their NS [native speaker] counterparts and textbooks did" (p. 734). According to Crossley et al. (2015), "collocation accuracy" was the most important measure in human evaluations of lexical proficiency in academic writing, accounting for the greatest amount of variance in the holistic scores of a corpus of 240 spoken and 240 written texts produced by (beginning, intermediate, and advanced) L2 learners and native speakers (p. 570). Likewise, the results of the analyses of two datasets of EFL learners' writing texts carried out by Bestgen (2017) indicated "the existence of strong link between formulaic competence [bigram collocations with MI score of 3 and above] and raters' judgments on text quality" (p. 74). Paquot's (2019) large-scale study based on human raters' evaluation of the phraseological sophistication of 98 research papers written by French EFL university students at B2 to C2 levels of the CEFR was also indicative of the essential role that

phraseological complexity (e.g., collocations) has to play in EFL writing quality. Finally, results of Garner's (2022) analysis of a verb-noun collocations in a sample of 1,888 essays chosen from the TOEFL 11 Corpus written by EFL learners (low, medium, and high proficiency levels) from four L1 backgrounds (Arabic, Italian, Japanese, Korean) revealed that "more proficient writers produced a more diverse range of [contiguous and non-contiguous] verb-noun collocations that were less frequent and more positively and strongly associated" (Garner, 2022, p. 909). Further, the findings offered evidence that "higher scoring essays written by L2 writers contain a greater variety of less frequent, yet more strongly associated, verb-noun collocations" (Garner, 2022, p. 931).

As Lewis (2000a) suggested, "in academic writing, where the focus is almost exclusively on accurate communication of information … standard words, phrases, collocations and other chunks are an essential prerequisite for effective communication" (p. 189). Simultaneously, the appropriate and effective use of collocations and other types of lexical phrases is also a key factor when assessing L2 writing and speaking in academic settings (Hsu & Cheng, 2023; Garner, 2022; Garner et al., 2019, 2020; Hinkel, 2023; Paquot, 2018, 2019; Polio & Yoon, 2021; Saito, 2020; Wood, 2015). On the other hand, some longitudinal research (e.g., Yoon, 2016; Yoon & Polio, 2017) has provided evidence of a lack of development in the argumentative essay writing of high-intermediate ESL students in terms of linguistic complexity and collocation strength even after a whole academic semester. Furthermore, Polio (2019) lamented that enough attention is not given to language-focused instruction in L2 writing classes. Such observations illustrate the necessity of explicit and systematic teaching of academic writing, an integral part of which is collocations instruction (Ackerman & Chen, 2013; Chen, 2019; Coxhead & Byrd, 2007; Garner, 2022; Garner et al., 2019, 2020; Hinkel, 2019, 2023; Lei & Liu, 2018; Li & Schmitt, 2010; Ellis et al., 2008; McCallum & Durrant, 2022; Polio, 2019; Polio & Yoon, 2019; Ward, 2007; Yoon, 2016; Yoon & polio, 2017).

Obvious dire consequences for EFL learners' mis-collocations can also be seen in the case of high-stakes international tests such as IELTS. Among the four language skills tested in IELTS, EFL students from many Asian countries tend to get lower scores in writing in comparison to scores on other skills (British Council, 2024). In the IELTS writing Task 1, test takers are required to write a 150-word summary of the information presented in graphic or diagrammatic form, while in Task 2, they are required to write an essay in at least 250 words in a formal, academic style (British Council, 2024). Research has shown that these tasks, especially Task 2, are difficult for many students from Asian countries such as China, Iran, Japan, Saudi Arabia, Russia, Vietnam, and international students in American universities, occasioning them lower scores than the average level (e.g., Clark & Yu, 2021, 2022; Futagi et al., 2008; Hou, 2014; Li et al., 2023; Panahi & Mohammaditabar, 2015; Smirnova, 2017; Yao, 2014). Notably, it has been revealed that inappropriate use of collocations is among the common errors associated with IELTS writing (e.g., Bagheri & Riasati, 2016; Futagi et al., 2008; Paquot, 2018).

#4. Knowledge of collocations positively impacts a range of L2 proficiency metrics.

Reynolds (2022) expresses skepticism about the argument made by Askari and Naghdipour (2021) that knowledge of collocations facilitates comprehension of texts (spoken and written) and, hence, views teaching them a pointless exercise. In fact, he has been "unable to find any direct evidence for this idea at all" (Reynolds, 2022, p. 145). Contrary to this argument, there is now ample empirical evidence in support of the effects of collocational knowledge on many facets of language comprehension and production. According to Granger and Meunier (2008), "[p]hraseology is a key factor in improving learners' reading

and listening comprehension, alongside fluency and accuracy" (p. 251). As posited by Jeong and DeKeyser (2023), collocations play "a crucial role in enabling the comprehension and expression of messages" (p. 933). Broadly construed, research indicates that collocation knowledge, and especially explicit collocation instruction, is positively associated with a variety of L2 proficiency metrics including, but not limited to: listening comprehension (e.g., Hsu & Hsu, 2007; McGuire & Larson-Hall, 2017; Pan et al., 2018; Yeldham, 2018, 2020); speaking proficiency and comprehensibility (e.g., Boers et al., 2006; Eguchi & Kyle, 2020; Estaji & Montazeri, 2022; Hougham et al., 2024; Hsu & Cheng, 2023; Hsu & Chiu, 2008; Janebi Enayat & Derakhshan, 2021; McGuire & Larson-Hall, 2017, 2021; Saito, 2020; Sarvari et al., 2016; Uchihara et al., 2022; Xu, 2018); reading comprehension (e.g., Hsu, 2010; Jung et al., 2024; Keshavarz & Salimi, 2007; Kremmel et al., 2017; Lin, 2007; Ma & Lin, 2015; Martinez & Murphy, 2011; Qian, 1999, 2002); and writing (e.g., Akhter & Nordin, 2022; AlHassan & Wood, 2015; Fang et al., 2021; Garner, 2022; Garner et al., 2019, 2020; Hsu, 2007; Huang, 2014; Jung et al., 2015; Kim et al., 2018; Kyle & Crossley, 2016; Kyle & Eguchi, 2021; Paquot, 2018; Peters & Pauwels, 2015; Qian, 2022; B. L. Reynolds, 2016; Yoon, 2016; see also McCallum & Durrant, 2022).

In what follows I attempt a brief overview of research addressing the nexus between collocation and the four language skills. Obviously, however, an article-length treatment cannot hope to provide anything resembling an exhaustive review. Instead, I focus on a selective number of such a line of research for description and elaboration.

4.1 Collocation and listening

In an early study, Hsu and Hsu (2007) adopted an experimental approach to unravel explicit teaching of lexical collocation in the EFL context of Taiwan. A cohort of 34 college English majors were divided into three groups and received three different types of instruction before completing a test of listening comprehension adapted from the TOEFL test: single-item vocabulary instruction, lexical collocation instruction, and no instruction. Even though the focus of the study was not on the listening processes, the students receiving 'lexical collocation instruction' scored the highest in comparison to the other two groups on a product scale.

Yeldham (2018) study found the facilitating effect of formulaic sequences (including collocations) in Taiwanese EFL listeners' lower-level processing, especially in listening to cognitively challenging texts. As the author concluded, the presence of formulaic sequences obviated the need to process function words in those phrases through bypassing them in the listening task. The holistic processing of formulaic sequences helped the participants to concentrate more on extracting the general meaning of the whole formulas rather than on the individual words comprising them, suggesting that explicit instruction in such decoding skills in conjunction with strategy training "contributes to learners' better understanding and control of the L2 listening processes and thus helps them improve their general comprehension performance" (Dai & Liu, 2012, p. 243).

Pan et al. (2018) explored the effectiveness pre-listening vocabulary support on the performance of 61 EFL first-year college students on a simulated TOEIC (Test of English for International Communication) listening test in Taiwan. The researchers devised two vocabulary support interventions: unexpanded vocabulary-instruction with a focus on single words only versus expanded vocabulary-instruction targeting lexical quantity plus lexical quality (i.e., a focus on multiword units, including collocations). Results indicated that, over a span of 18 weeks, the latter intervention produced more significant gains on the TOEIC

listening test in comparison with the former, suggesting that collocational knowledge has the potential to enhance listening comprehension of EFL learners.

4.2 Collocation and speaking

McGuire and Larson-Hall (2017) in a five-week intervention study explicitly taught English formulaic sequences (including collocations, such as *high probability*, *take advantage*, *definite plans*) to a group of intermediate to advanced students from Thailand, Japan, and China. The experimental group was taught formulaic sequences and practiced using them in authentic listening and speaking delivered through a task-based approach. The focus of instruction in the control group was not on formulaic sequences but on isolated vocabulary and grammar in a traditional way. Results indicated that, compared to the control group, explicit teaching of formulaic sequences augmented speech rate and mean length of run for the experimental group; helped these participants to use the formulaic sequences in spontaneous speech; and this use of formulaic sequences in turn led to increased fluency in their spontaneous speech.

Xu (2018), based on three contemporary theories of speech production and a logical analysis of the relationship between collocation and L2 oral proficiency, proposed the term "spoken collocational competence" (SCC) as a new construct to account for L2 learners' collocational usage and performance in naturally occurring speech. As distinct from collocation knowledge and processing, SCC, Xu (2018) argues, "accounts for the unfocused, procedural collocational performance in speaking" which "is performed at near-instantaneous speed and with little or no conscious control" (p. 262).

Saito (2020) investigated the extent to which the use of collocations accounted for intuitive judgments of 10 English-native speakers of L2 comprehensibility and contextually appropriate use of 85 Japanese EFL learners with varied proficiency levels. Results revealed that the comprehensibility and appropriateness of these L2 learners' speech "were strongly determined by [their] use of low-frequency combinations containing infrequent, abstract and complex words (i.e., mutual information)" (Saito, 2020, p. 548).

In another related study, Saito and Liu (2022) explored the role of collocation use and EFL comprehensibility through rater judgments (EFL, ESL, Native raters) of transcriptions of picture oral description and oral interview tasks produced by 61 Japanese EFL students with different levels of English proficiency. Results demonstrated that collocations, especially strongly associated ones (as measured via MI scores), were judged by all raters to have significant relationships with L2 comprehensibility, and hence L2 speaking proficiency.

Uchihara et al. (2022) examined the relationship between collocation knowledge and oral proficiency of 40 Japanese EFL university students elicited through a word association task and a spontaneous speaking task (picture narrative). Their findings revealed that students who made use of more low-frequency, strongly associated collocations had a faster speech with fewer silent pauses, hence were judged to be more fluent as measured via a variety of objective and subjective criteria. As the authors concluded, students with rich collocational networks had a more fluent and lexically rich oral production, pointing to the unique role of collocation knowledge in oral proficiency.

Drawing on the linkage between collocation knowledge and speech production assumed in speech theories, Estaji and Montazeri's (2022) study tapped into the frequency and the differentiating power of different types of grammatical and lexical collocations in the speaking performance of Iranian IELTS test-takers. Their corpus data comprised transcriptions of 60 recordings (110, 000 words) of the IELTS speaking mock tests (bands 6, 7, and 8). The analysis found 3,252 collocations (1,074 grammatical and 2,178 lexical)

in the corpus the larger number of which were produced by test-takers at the 7 and 8 band scores; thus, these collocational patterns could differentiate IELTS test-takers across different band scores. The results, while substantiating previous research (e.g., Crossley et al., 2015; Sarvari et al., 2016), indicate that appropriate collocation use would result in higher gains in academic testing situations.

Empirical evidence for the effect of collocation instruction on speaking fluency of EFL learners also comes from the study by Hsu and Cheng (2023) with 92 intermediate, high-intermediate, and advanced English majors at a university in Taiwan. The researchers compared three types of instruction: direct collocation instruction, single-item vocabulary instruction, and no instruction. Results clearly showed students who received direct collocation instruction outperformed the other two groups on speaking fluency tests. Furthermore, while there was no statistically significant difference in the performance of students at the intermediate levels, collocation instruction had the most notable impact on advanced-level learners. The study concluded that direct collocation instruction significantly enhances the speaking proficiency of, especially advanced, EFL learners.

Finally, Hougham et al.'s (2024) analysis of a corpus consisting of oral presentations of 150 ESL advanced students from 20 L1 backgrounds at a UK university also uncovered that bigram MI usage (e.g., *global warming*, *sexual harassment*, *wide range*), in particular, has a critical role in predicting English language proficiency and oral presentation performance.

4.3 Collocation and reading

In an early study, Lien (2003) explored the effects of three types of instruction on reading comprehension of 85 Taiwanese EFL college students at three academic levels (junior, sophomore, and senior), namely, vocabulary instruction, collocation instruction, and no instruction. Results of three reading comprehension tests indicated that, overall, collocation instruction had the most positive effects on the students' reading comprehension although its correlation with reading comprehension was different for different proficiency levels. In other words, the effects of collocation instruction on reading comprehension increased as the participants' level of proficiency increased.

Keshavarz and Salimi (2007) carried out a study with 100 Iranian intermediate EFL students majoring in English to test the relationship between the learners' knowledge of grammatical and lexical collocations and their performance on cloze tests. The authors used two types of cloze tests in their study. The first multiple-choice cloze test consisted of verb + noun lexical collocations (e.g., *peel banana*, *express concern*, *take test*) and grammatical collocations including adjective + preposition (e.g., *replete with*), noun + preposition (e.g., *attitude toward*), and verb + preposition (e.g., *insist on*). The second test was an open-ended cloze test comprising multiple-choice items of lexical and grammatical collocations based on a 387-word reading text extracted from a global intermediate-level textbook. Results of their analysis indicated that "learners' collocational competence and proficiency level are closely and positively associated" (Keshavarz & Salimi, 2007, p. 88). As stated by the authors, "collocations should be *explicitly taught* [emphasis added] with emphasis on the restricted type and on learners' productive knowledge" (Keshavarz & Salimi, 2007, p. 89).

Hsu (2010) examined the effects of three types of vocabulary instruction on the reading comprehension and vocabulary learning of 102 Taiwanese college English majors in reading three slightly adapted authentic texts at the intermediate level. The 'single-item vocabulary instruction' group were taught content words in the texts as separate items without offering their possible lexical combinations (e.g., *solve*,

accurate, *brainstorm*, *variety*, *efficiently*, *desirable*). For the 'lexical collocation instruction' group, the researcher provided explicit instruction and practice in a variety of collocation types available in the texts (e.g., *solve problem*, *accurate information*, *brainstorm solution*, *wide variety*, *solve efficiently*, *highly desirable*). The 'no instruction' group did not receive any instruction in either single-item or collocation instruction, but enjoyed an implicit-based, self-study procedure before taking the post tests. Results of the three immediate and delayed vocabulary and reading comprehension tests revealed that 'collocation instruction' had the greatest positive effect not only on reading comprehension performance, but also on vocabulary learning across all academic levels. The researcher concluded that increasing collocational knowledge helps "elevate learners' comprehension in texts" (Hsu, 2010, p. 72).

Martinez and Murphy (2011) conducted a study with 101 adult EFL learners designated as intermediate to higher levels at private language schools in Brazil. The authors tested the reading comprehension of the learners through two tests series each comprising four short texts. One part of the test (Test 1) contained the short texts in their original version (intact words) while in the other part (Test 2) the arrangement of the exact same words constituted multiword expressions, including collocations (e.g., large, and, by → *by and large*). Results revealed that "learners' comprehension not only decreased significantly when multiword expressions were present in the text but students also tended to overestimate how much they understood as a function of expressions that either went unnoticed or were misunderstood" (Matinez & Murphy, 2011, p. 267). As concluded by the authors, "multiword expressions just may present a larger problem for reading comprehension than accounted for in the current literature" (Martinez & Murphy, 2011, p. 274), suggesting that 'explicit instruction' can alleviate, if not eradicate, such problems.

Ma and Lin (2015) investigated the overall and relative contribution of four subcomponents of vocabulary knowledge to reading comprehension of 124 university students in Taipei, Taiwan: vocabulary size, word association, collocational knowledge, and morphological knowledge. Results revealed an overall significant contribution of the four vocabulary subcomponents to reading comprehension (20%). Specifically, the study showed that of the three components of vocabulary depth (i.e., derivation, collocation, and word association), 'collocation knowledge' explained the most proportion of variance (5.6%) in contributing to reading comprehension performance, substantiating the results of Qian (1999, 2002).

Two consecutive studies were undertaken by Kremmel et al. (2017) to explore the role of phraseological knowledge in EFL reading comprehension. In their first quantitative study, the researchers investigated the contribution of syntactic, lexical, and phraseological knowledge to reading comprehension of 418 Austrian EFL advanced students in reading authentic texts in their penultimate year of secondary education. The authors used four reading tasks intended to tap into the students' understanding of main ideas and supporting details. Results of this study indicated that "knowledge of phrasal expressions emerged as the strongest predictor to FL reading test performance (β = .57)", far beyond the contribution of vocabulary (β = .29) and syntactic (β= .06) knowledge (Kremmel et al., 2017, p. 855). As the authors postulated, "phraseological knowledge is a latent variable that is not subordinate to either vocabulary or syntactic knowledge", concluding that phraseological knowledge is indeed a crucial predictor of EFL reading comprehension (Kremmel et al., 2017, p. 855).

In Study 2, Kremmel et al. (2017) aimed at pinpointing whether and how another group of 15 advanced Austrian EFL learners process and make use of phraseological knowledge (e.g., collocations), in achieving textual comprehension. The participants completed a multiple-choice test on 60 formulaic expressions first, and then their think-aloud protocols were recorded as they answered the comprehension

questions on a passage containing these sequences. It was found that the participants' knowledge of formulaic sequences helped them to correctly answer the comprehension questions. As asserted by the authors, "explicit teaching of [collocations] might facilitate reading success in the same way that increasing a person's vocabulary size has been established to help reading comprehension and reading test performance" (Kremmel at al., 2017, p. 866).

Shi et al. (2023) probed the extent to which the semantic property of figurativeness of English collocations (e.g., *build a house* vs. *build a career*; *grow flowers* vs. *grow business*) affected self-paced reading of both L1 and L2 readers. Data were collated from 40 native English speakers and 44 Chinese English learners (doctoral, postgraduate, and undergraduate students). They read sentences containing 40 verb-noun collocations in which one constituent was used in a figurative sense. Results illustrated that, compared to English native speakers, figurativeness of collocations negatively impacted L2 learners' reading, even though L2 proficiency level had an effect in this regard. In the authors' own words, "[f]igurativeness, like L1-L2 congruency, has a measurable influence only on L2 collocational processing" (Shi et al., 2023, p. 70), suggesting again that explicit instruction can facilitate the processing and, as a result, comprehension of texts containing figurative collocations.

Farjami (2023) exploited Moodle as a platform to teach reading comprehension online to Turkish intermediate EFL university students during the Covid-19 pandemic. Over a period of ten weeks, he taught reading comprehension using conventional methodologies to a control group, while in his experimental group the students received collocation-focused instruction as an extracurricular activity. As revealed by the results, the experimental group significantly outperformed the control group at the post-reading stage "because of collocation-focused activities", suggesting that this added bonus "had a substantial impact on the [EFL] reading skills" of these learners (Farjami, 2023, pp. 89-90).

Jung et al. (2024) examined the impact of two glossing conditions, viz single-word glossing versus collocation glossing, compared with a control un-glossing condition on the reading comprehension as well as the incidental lexical and collocational learning of 63 EFL learners in Hong Kong in reading two English texts. The subjects' comprehension was measured through 12 paper-based true-or-false sentences for each text. Results indicated that, compared to the unglossed and single-word glossing conditions, collocation glossing significantly promoted comprehension of the texts.

4.4 Collocation and writing

Hsu (2007) found that there was a significant correlation between higher type and token frequencies for verb-noun and adjective-noun restricted collocations and higher scores on essays written by Chinese EFL university students.

AlHassan and Wood (2015) recruited twelve EFL students with pre-intermediate to advanced proficiency levels from various L1 backgrounds attending EAP courses in a Canadian university. Using a consciousness-raising methodology consisting of presentation, practice, and production stages, the students were trained to use 40 formulaic sequences and 25 collocations in various writing tasks. Results were indicative of the obvious increase in use of the instructed items as well as other creative ones in almost all the students' paragraph writing tasks after the intervention.

To address Taiwanese medical students' lack of collocational knowledge in EFL writing in their respective field of expertise, B. L. Reynolds (2016) instructed 25 undergraduates how to self-edit their academic writing for verb-noun collocational errors via *TANGO* (a web-based English-Chinese bilingual

parallel corpus collocational concordance). Students were then required to self-edit three drafts of two shot essays (descriptive and opinion) on medical issues. In terms of quantitative results, explicit instruction in self-editing "resulted in verb-noun accuracy increasing steadily with each subsequent draft for two essay types" (B. L. Reynolds, 2016, p. 213).

Results of the study by Kim et al. (2018), based on an analysis of two different types of corpora (i.e., a corpus of argumentative writings by EFL learners and a corpus of free writing by L1 speakers and ESL writers) indicated that the use of 'bigrams and trigrams with strong (directional) association' was the strongest predictor of L2 writing proficiency. In other words, L2 learners who produce collocations with stronger associations (e.g., through MI score or MI^2 score) (e.g., *exultant triumph*, *artificial intelligence*) will be judged to be more proficient. These results endorsed previous research (e.g., Jung et al., 2015; Kyle & Crossley, 2016) that texts with higher collocation density are likely to receive higher scores on L2 writing tasks.

Paquot (2018) uncovered the impact of syntactic, lexical, and phraseological (i.e., statistical collocations) complexity on human raters' overall judgment of English writing quality of upper-intermediate (B2) to advanced (C1-C2) levels using a corpus of 98 research papers written by French EFL university students as part of their course requirements. As shown by the results, statistical collocations, especially the use of adjective-noun and verb-object collocations with high MI values (e.g., *hasty conclusion*, *integral part*, *wide range*, *illustrative example*, *arouse curiosity*, *fill gap*, *corroborate finding*, *avoid misunderstanding*), significantly affected human raters' overall judgments of writing quality at these levels. As interpreted by the author, "learner texts that get higher proficiency scores are best distinguished by a higher proportion of *amod* [adjective modifier] and *dobj* [direct object] dependencies with medium to high MI values and a lower proportion of such dependencies with low MI values" (Paquot, 2018, p. 39).

Fang et al. (2021) scrutinized the effect of three training sessions in corpus-based learning of collocations (adjective-noun, verb-noun, verb-preposition) on the lexical quality of 22 Chinese EFL senior secondary school students in IELTS writing Task 2. Specifically, the authors found that "the students collocated better in their writing after the intervention" (Fang et al., 2021, p. 96). Results of this study confirmed Huang's (2014) study in which Chinese university students' use of collocations in essay writing improved significantly, Smirnova's (2017) study on the effects of using corpora training on reducing the number of collocation errors in ILETS writing Tasks 1 and 2 by Russian undergraduate students, as well as that of Saeedakhtar et al. (2020) in the case of 66 verb-preposition collocations instruction with Iranian EFL low-intermediate high school students.

5. Explicit collocation instruction should become an indispensable part of EFL instruction.

Given the reasons spelled out so far in different parts of this paper, explicit collocation instruction has been advocated, in one way or another, by the overwhelming majority of researchers from various fields as an effective way of accelerating collocation learning in L2 (ESL and especially EFL) contexts (see 5.1 below). Following previous researchers (e.g., El-Dakhs et al., 2018; Lantolf & Tsai, 2018; Le-Thi et al., 2017; Li and Lei, 2024; Pakzadian, 2023; Tsai, 2015, 2020), *explicit collocation instruction* in this paper is defined operationally as an approach consisting of at least three components: (a) presentation of target collocations through explicit metalinguistic information; (b) exposure to target collocations through various input modes (e.g., in varied sentences, in dialogs, in short paragraphs, or in reading/listening texts); and (c) reinforcement

activities (e.g., making new sentences using target collocations, using gap-filling exercises in which the whole collocations are missed, and L1 translation).

As contended by Bahns and Eldaw (1993), EFL learners' collocation knowledge does not develop in parallel with their vocabulary knowledge owing partially to the fact that collocations are not explicitly taught; this, in turn, leads to learners' neglect of collocation learning in such contexts. Lamenting the 'neglected' state of collocations in EFL contexts, Farghal and Obiedat (1995) highlighted that "the flexible lexical and/or syntactic range of collocations as opposed to idioms, for instance, should not lower their importance; on the contrary, collocations should be treated on a par with, if not superiorly to, idioms" (p. 315). As inferred by Singleton (1997), the teaching of given lexical items needs to address not only individual forms and concepts, but also […] 'local' syntax and collocational environments" (p. 222). Conzett (2000) extends the notion that 'vocabulary will not take care of itself' to that of 'collocations', postulates that "ESL students need additional, explicit instruction in collocations", and recommends that teachers explicitly teach students the word 'collocation' and use this term throughout the class time (p. 75). Placing collocation instruction at the top of a planned language input agenda, Woolard (2000) emphasized the prominent role that teachers are to play proactively not only in helping students' identification and awareness of collocations in texts but also in raising their awareness of 'mis-collocations' in language production. He further added that teachers "should re-examine their coursebooks for collocation, adding exercises which focus explicitly on co-text and which draw the students' attention to significant *verb + noun*, *adjective + noun*, *verb + adverb* [and other types of] collocations" (Woolard, 2000, p. 32). In a similar vein, Hill (2000) holds that teachers should emphasize to students that "they do not really 'know' or 'own' a word unless they also know *how that word is used*, which means knowing something about its collocational field" (p. 60; original emphasis). That's why he recommends that, as a good rule, teachers teach some of the most common collocations of each new word. Therefore, when teaching the new word *belief*, Hill (2000) advises teachers to teach not only its common collocations (such as *strong beliefs*, *have a belief*, *belief in God/the power of medicine/yourself*), but even its strong collocations (such as *beggar belief*) at the same time (p. 60). To choose which collocations to teach, Hill (2000, pp. 63-64) enumerates four types: unique collocations (e.g., *foot the bill*, *shrug our shoulders*, due to the uniqueness of the verbs *foot* and *shrug* in these collocations); strong collocations (e.g., *trenchant criticism*, *rancid butter*, *ulterior motives*, *harbor grudges*) where the two collocates are strongly associated in terms of meaning; weak collocations (e.g., *big flat*, *blue shirt*, *good meal*) where the relationship between the two components is very loose; and medium-strength collocations (e.g., *hold a conversation*, *make a mistake*; *recover from a major operation*) in which students know the meaning of individual words, but have not yet mastered the collocation as single item. Hinkel (2023, p. 435) submitted that "*without explicit instruction*, most language learners cannot readily identify the occurrence or prevalence of multiword phrases [e.g., collocations] in English discourse" and, as a result, "opportunities for learning how and when to use them in language *comprehension* or *production* are often diminished" (emphases added; see also Hinkel, 2019, p. 110). Given the limited class time, Hill (2000) accords primacy to the teaching of 'medium-strength' collocations at the intermediate level and above. Nevertheless, as it was already explicated in different parts of this paper, teaching 'unique' and 'strong' collocations judiciously should also have their particular place in EFL academic contexts.

Such theoretical positions underscore the importance as well as the necessity of explicit collocation instruction in ESL/EFL contexts.

5.1 Empirical evidence for explicit collocation instruction in EFL contexts

In fact, promising results have been reported from various explicit instructional approaches to collocation learning in different EFL contexts. There is now ample evidence from 19 studies in Durrant's (2014) meta-analysis, from 64 research projects in 17 primary studies in Li and Lei's (2024) recent meta-analysis, from 32 corpus-based empirical studies in a recent systematic review by Sun and Park (2023), from 37 studies in a research timeline (Boers & Webb, 2018), as well as from several narrative research summaries (e.g., Durrant et al., 2022; Granger, 2021; Szudarski, 2017, 2023; Szudarski & Barclay, 2022; see also #3) that attest, in one way or another, to the necessity and/or effectiveness of explicit collocation instruction in EFL contexts. A broad overview of some of the above studies was provided in 4.1 to 4.4 in relation to the role that collocations play in mastering the four macro-skills. Since such an exhaustive list of empirical research defies detailed description within the confines of this paper, a few of them will be selectively adumbrated in the following overview. Readers are thus referred to the above-mentioned references for close reading of such explicit instruction studies.

Zhang (2017) compared the effects of training in a receptive-productive integration task on the development of verb-noun (e.g., *assume responsibility*, *deny access*, *bear resemblance*, *take initiative*, *set parameters*) collocation knowledge of 120 Chinese EFL sophomores with the effects of the receptive and productive tasks instruction. Results were indicative of enhancement of collocation knowledge (in terms of form, form-meaning, and grammar) in all three types of instruction, although this effect was more significant in the receptive-productive integration task. Li (2017) utilized corpora and found that Chinese postgraduates displayed a significant improvement in using verb-preposition collocations in their EFL academic writing, substantiating the results of Wu (2016) in the case of adjective-noun and verb-noun collocations with both low and high proficiency levels. In his overview of the main research findings relevant to learning and teaching L2 collocations, Szudarski (2017) recommended explicit classroom instruction for 'incongruent' as well as 'restricted' collocations. Tsai (2020) examined the relative efficacy of form-focused instruction versus concept-based instruction in the explicit teaching of a set of verb-noun collocations (e.g., *make progress*, *make a comment*, *make a contribution*) to a sample of 73 Chinese-speaking intermediate learners of English at a university in Taiwan. Compared to a control group, both types of explicit instructions facilitated these EFL learners' development of establishing the relationship between form and meaning for verb-noun collocations, although the concept-based approach proved better than form-focused instruction in this regard. Sun and Park (2023) conducted a systematic review of 32 empirical studies on corpus-based acquisition of collocations and the effectiveness of corpus-based collocation instruction in EFL contexts. The researchers concluded that "[o]verall, the reviewed studies collectively demonstrate the positive impact of corpus-based instruction on learners' collocational knowledge, usage, and retention" (p. 18). More importantly, the meta-analysis of a total of 64 research projects in 17 primary studies on the effectiveness of instruction on collocation learning in EFL contexts carried out by Li and Lei (2024) revealed that although an aggregate result of $d = 1.415$ was produced for both implicit and explicit instructions, explicit collocation instruction ($d = 2.283$) proved to be more effective than implicit collocation instruction ($d = 1.032$).

Final remarks

Despite the generally critical tone of this paper *against* those scholars (e.g., Reynolds, 2019, 2022) who believe in de-emphasizing explicit collocation instruction in EFL classrooms, I do not wish to question the

value of a judicious concern with implicit collocation learning that might occur in such settings under exceptional circumstances. With this caveat in mind, in this article, I presented five general arguments *for* explicit teaching of collocations in EFL academic contexts. Grounded in empirical evidence from the available literature on the topic, these arguments were further used as a response to two central claims in Reynolds (2019, 2022): (1) that the payoff of teaching, particularly 'low-frequency', collocations is not worth the effort as it entails a trade-off in terms of the limited time of classroom instruction; and (2) that knowledge of collocations has no 'direct' effect on comprehension.

Regarding the first central claim, I failed to find any trace of how to deal with such infrequent (but strongly associated) collocations in Reynolds (2019, 2022), in case students encounter them in their classroom materials for learning and assessment. However, this claim was construed in at least two rather different ways in this paper. First, students should be left to their own devices to learn such collocations incidentally and produce them liberally. I argued against this, providing evidence that the chances are slim that these (and many common and frequent) collocations are learned incidentally in many EFL settings. As explicated in different sections of this paper, the justifications can be numerous and of various types, but they were subsumed under two broad categories: those related to the nature of collocations *per se*; and, those germane to the typical characteristics of ELT learning and teaching in EFL contexts. Second, collocations are, generally speaking, not a defining feature of the English language in EFL contexts and, hence, do not merit particular attention. I also gave several reasons for the critical role of collocations in EFL contexts from linguistic, theoretical, and pedagogical perspectives for the ramifications of mis-collocations in EFL learners' academic achievements.

In respect to the second central claim in Reynolds (2022), sufficient empirical evidence from the literature was provided apropos of the positive effect of collocational knowledge on a range of English language proficiency metrics such as listening comprehension, speaking proficiency, writing ability, and reading comprehension.

An obvious conclusion drawn from the overview of research results in this paper is that the acquisition of L2 collocations is compounded by several factors. Some of these factors covered in this paper include, though not limited to: a lack of semantic and perceptual salience; 'deceptive transparency' of many collocations; 'incongruence' (i.e., cross-linguistic variability) of many collocational phrases; the 'dispersion' of the collocations across texts (i.e., whether a collocation occurs across a variety of texts or only in specific contexts); the 'exclusivity' or 'formulaicity' of collocates, i.e., "the extent to which the two words appear solely or predominantly in each other's company", usually measured through the MI score (Gablasova et al., 2017, p. 160); 'directionality' of the collocates, i.e., "the components in a collocate do not attract each other with equal strength" (Gablasova et al, 2017, p. 160); (in)adequacy of exposure to L2 input; and contexts and cultures of learning.

The above-mentioned arguments were used to provide the rationale for explicit teaching of collocations in EFL academic contexts. Thus, the position I take in this paper concurs with those scholars who side with the view of explicit collocation instruction in such contexts. This position would initially entail developing awareness of collocations as "independent entities, divorced from knowledge of any individual words" (Durrant, 2014, p. 472). It is then premised on the realization that "collocations require *instruction* [emphasis added] accompanied by contextualized uses, practice, and more practice" (Hinkel, 2019, p. 129; see #5), and that this instruction involves supporting leaners in developing strategies to turn the collocations to which they are exposed into intake which can result in acquisition and use (Badger, 2018). It is noted, however, this approach to collocation teaching in EFL classrooms does not necessarily

mean throwing out all established pedagogy or forgoing other aspects of English (such as grammar, fluency, prosody, etc.) - which Reynolds (2019, 2022) seems to be concerned about losing - and devoting an inordinate amount of time to a hopeless attempt to teach a comprehensive command of collocations. But, if we accept that the number of new words to which EFL learners are typically exposed over the course of a year is limited, then we can set realistic goals for collocation teaching in our classrooms. For the senior high school in Iran, for example, the number amounts to around 120 new entries each year. Given this situation, following (Pan et al., 2018), this paper takes the position that an emphasis on improving the *quality* of learners' vocabulary repertoire with a focus on explicit instruction of collocations is both practicable and preferable. What teachers need to do is a "delicate balancing act" (Harwood, 2002) in which they do not go overboard, but expose learners to a great range of collocational combinations while simultaneously ensuring that learners are not overwhelmed by them and are enabled to abstract key concepts and useful rules of grammar.

While there is still a lack of consensus as to the most efficacious ways of teaching collocations explicitly, the approach adopted by Hinkel (2019, 2023; see also Conzett, 2000) can be an excellent candidate in EFL contexts. As explained by Hinkel (2019, 2023), in L2 contexts where spoken and written texts are the primary sources of teaching, both 'frequent and transparent' and 'infrequent and opaque' collocations lend themselves well to instruction when working in any language skill. This means that in addition to the specific class time regularly allocated to largely form-meaning aspects of vocabulary in typical EFL classrooms, teachers can find a place to engage in 'unplanned' collocation teaching during the hustle and bustle of their interactive classrooms. To illustrate, collocations found in a supplementary reading excerpt brought to the class by the teacher can become the focus of a language task at the pre- and/or post-reading phase, written on the board, and extended by providing contextualized examples. A follow-up supplemental writing practice can further promote the recall and consolidation of those collocations. In a similar fashion, those encountered in listening and speaking tasks can be added to the students' repertoire of collocations and come in handy in practicing grammar (see Nagy, 2020, for similar activities and exercises for teaching collocations). However, as a final note of caution, teachers must strive to ensure that such unplanned teaching "does not detract from the central focus of activity by drifting into a long and possibly irrelevant tangent" (Brown & Lee, 2015, p. 483).

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