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# The Vocabulary List for ELT Textbooks in Language Acquisition and Teaching Methodology ${ }^{*}$ 

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#### Abstract

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The study aims to investigate vocabulary demands in academic textbooks for ELT majors, identifying the most frequent word list for preservice teachers and variations in lexical needs across sub-areas. For the purposes, the study compiled a corpus comprising approximately 1.6 million tokens from twelve university textbooks in the integral dimensions of ELT: language acquisition and teaching methodology. By analyzing the lexical coverage of the ELT textbook corpus against the twenty-five 1,000 word-family list from the British National Corpus and Corpus of Contemporary American English (BNC/COCA), the study assessed the lexical load of ELT textbooks and developed an essential vocabulary list. Findings revealed that achieving a 95\% lexical coverage in ELT textbooks necessitates mastery of the top 4,000 word families, including proper nouns, interjections, transparent compounds, abbreviations, and glossary terms. To attain $98 \%$ coverage, however, ELT students require an 11,000word family vocabulary. Further analyses show that textbooks in language acquisition demand a higher lexical requirement compared to those in teaching methodology. By applying a set of criteria for widespread use and pedagogical relevance, the study identified 513 word families beyond the initial 2,000 levels on the BNC/COCA, constituting $9.36 \%$ of the ELT textbooks. The study suggests practical pedagogical implications.


## KEYWORDS

ELT vocabulary, ELT word list, technical vocabulary, discipline-specific word list, vocabulary load, ELT textbooks, corpus analysis

## 1. Introduction

Vocabulary is an essential part of language learning. As vocabulary knowledge constitutes the ability to communicate as the basic building blocks of language system, a robust vocabulary is a stepping stone to effective communication, better literacy skills, higher-level fluency, and greater academic performance (Laufter and Nation, 1995, Nation 2001). Previous research attests to the importance of vocabulary size as a strong predictor in language proficiency across the board: The richer vocabulary, the better fluency development in all aspects of language (Nation 1990). While the vocabulary size is a critical indicator of reading performance, the predictive power of academic vocabulary is much stronger than that of the vocabulary size itself (Moon 2017). Indeed, academic vocabulary emerges as an even more influential factor in determining academic performance, surpassing the significance of sheer vocabulary size.

Since academic vocabulary is characterized by "distinctive lexical, morphological, syntactic, and stylistic features," learning and using academic language could be a task of the greatest challenges (Scott, Nagy and Flinspach 2008). As the meaning of technical academic vocabulary is part of the subject knowledge (Armbruster 1992), L2 readers should have in-depth vocabulary knowledge specifically processed in their field of study. L2 students of ELT majors, in particular, are expected to acquire a higher degree of vocabulary knowledge not only because they are prospective English teachers, but also because their curriculum, materials, and teaching practices require them to master highly specialized academic English. ELT students need to develop an extensive repertoire of technical vocabulary to meet their academic challenges and requirements in their teacher-training.

Previous research has indeed produced word lists relevant to English education. However, the lists were often compiled from relatively small-sized corpora from textbooks used within specific curriculum courses (Lee and Kim 2013), which necessitates further investigation that employs larger corpora from a wider range of textbooks commonly used in practice. Other studies (Chung 2014, Ha 2018) sourced their corpora from research articles that might not be readily available to students majoring in ELT, making the findings less directly applicable to the broader population of preservice teachers. Moreover, no previous research has undertaken the task of evaluating the lexical threshold required for effective comprehension of ELT textbooks. Additionally, given the interdisciplinary nature of ELT, there could be differing lexical requirements depending upon specific sub-areas. Recognizing the essential nature of language acquisition and teaching methodologies as mandatory core dimensions in teacher professional development within ELT, this study seeks to assess the specific lexical demands and challenges inherent to ELT academic materials related to these sub-areas. Thorough lexical analyses of academic textbooks within these two sub-areas may reveal distinct lexical burdens in ELT academic materials for preservice teachers. Ultimately, the research aims to assess the lexical load of ELT textbooks and create a valuable inventory of technical vocabulary that caters to the precise needs of preservice ELT teachers, enhancing the quality of their training and professional competence. The study is guided by the following questions:

1) What size of vocabulary is required for preservice teachers to be able to adequately read their ELT textbooks in core courses?
2) What kinds of words constitute a discipline-specific academic word list that suffices to read ELT textbooks with $95 \%$ lexical coverage?
3) What differences may exist in the lexical threshold and the frequency of domain-specific academic words between ELT sub-corpora: language acquisition as opposed to teaching methodology?

## 2. Literature Review

### 2.1 Academic Vocabulary

Academic vocabulary refers to a range of words that are commonly used in educational contexts. As such, academic language employs "a different constellation of linguistic resources from what is typical or expected in everyday conversation" (Schleppegrell 2004). As a particular register used in school settings, academic vocabulary is classified into two categories: general core vocabulary and discipline-specific academic vocabulary (Beaumann and Graves 2010). The former encompasses commonly used, high-frequency versatile words that appear across various fields of study, while the latter includes domain-specific words specific to a particular discipline which may involve technical jargon.

This line of research has generated a significant body of research concerning the acquisition of fundamental vocabulary that is applicable across various academic domains, alongside vocabulary that is specific to a particular discipline, and how its familiarity relates to text comprehension within those specific fields. The former type of research involved inquiries into a compilation of commonly used words that are prevalent across diverse subjects as in West's (1953) General Service List (GSL, henceforth), whereas the latter focused on identifying subjectspecific vocabulary lists, taking into account the specific registers whose meanings may vary across fields (Nation 2001). Though there is no clear-cut boundary between the general-service and specialist vocabulary, highly specialized academic vocabulary is rarely overlapped with general-service words (Xue and Nation 1984). What is more, words used in everyday language may have different meanings and uses in specialized academic texts (Hyland and Tse 2007), thus distinctively classified as technical or sub-technical vocabulary (Chung and Nation 2003). Since learning specialist or technical words requires students to know the content associated with the word, learning technical vocabulary is part of content learning (Armbruster 1992).

While the size of academic vocabulary needed for successful reading may vary, previous research introduced two lexical benchmarks based on the portion of running words the reader knows in the text: $95 \%$ lexical coverage for a minimum "acceptable" comprehension of texts and $98 \%$ for an "optimal" level of comprehension (Laufer and Ravenhorst-Kalovski 2010). For the minimally acceptable vocabulary threshold for achieving "adequate" comprehension of authentic texts, Laufer (1989) claimed, around $95 \%$ lexical coverage is necessary, assuming readers can infer the meaning of unknown words from contexts. For "successful" comprehension of a text, according to Nation (2006), readers should attain about 98\% lexical coverage. Following Nation's (2006) estimation of vocabulary load based on word frequency within every 1000 word-families, achieving $95 \%$ vocabulary coverage amounts to the knowledge around 4,000 word-families in addition to proper nouns and exclamations, whereas reaching $98 \%$ vocabulary coverage of authentic texts implies a reader is acquainted with 8,000 to 9,000 word-families, thereby requiring a broader vocabulary knowledge. Given the substantial vocabulary size for effective comprehension of academic texts, the widely recognized the 2000 words in the GSL, accounting for about $85 \%$ of written academic English (Nation and Waring 1997), deems insufficient in ensuring effective comprehension of academic textbooks, especially in higher educational contexts. Even when incorporating Coxhead's (2000) Academic World List (AWL, henceforth) - additional 570 word families beyond the GSL, the combined coverage still only spans up to $86.1 \%$ of tokens in the corpus (Coxhead 2000, Li and Qian 2010).

Moreover, the representativeness of the general-purpose vocabulary lists varies across diverse fields and genres: For instance, West's 2000 GSL exhibits lexical coverage ranging from $78 \%$ to $92 \%$ (Nation and Waring 1997). Similarly, Coxhead's 570 academic word families, initially estimated to cover $10 \%$ across academic texts, demonstrated notably lower coverage rates: $2.4 \%$ of English presentations (Hincks 2003) and $6.72 \%$ of anatomy
text (Cobb and Horst 2002). Chung and Nation (2003) highlighted the considerable disparity in the coverage of academic vocabulary within specialized texts. Through a comparison of the distribution of technical vocabulary between two areas, Chung and Nation effectively demonstrated significant variations in the proportion of specialized vocabulary between applied linguistics and anatomy texts. Within the text of applied linguistics, around $68.5 \%$ of the total 93,445 tokens were derived from West's GSL, and an additional $6.9 \%$ were attributed to Coxhead's AWL. However, a considerable portion ( $21 \%$ ) of the corpus remained unaccounted for by existing academic word lists. In contrast, in the field of anatomy, only about $53.3 \%$ of the total 350,000 words were traceable to GSL and $3.7 \%$ to AWL, leaving a significant $43 \%$, comprising $31 \%$ technical vocabulary and $12 \%$ low-frequency words. These results emphasize that the differences in vocabulary distribution depend on the specific field of study and the importance of developing subject-specific vocabulary lists.

### 2.2 Discipline-Specific Word List

In the pursuit of enhancing the teaching and learning of academic lexis, a range of specialized vocabulary lists have been created over time. Stemming from a longer history of research in English for Science and Technology, the earliest investigations emerged from the field of engineering science. Since then, diverse efforts have been dedicated to constructing vocabulary lists pertinent to specific fields, including agricultural studies (Martinez, Beck and Panza 2009), business (Konstantakis 2007, Hsu 2011), chemistry (Valipouri and Nassaji 2013), engineering (Mudraya 2006, Ward 2009, Hsu 2014), environment (Liu and Han 2015), finance (Li and Qian 2010), food (Esfandiari and Moein 2015), medical science (Hsu 2013, Lei and Liu 2016, Wang, Liang and Ge 2008), nursing (Yang 2015), social studies (Kwary and Artha 2017), and more (further details in Kim and Lee 2019).
The recent growth in English for Specific Purposes (ESP) within the Korean research circle has also led to the development of specialized vocabulary lists tailored to various professional fields such as British drama (Jeong 2018), convention English (Kwon 2013), airline cabin crew services (Cho 2015), advertising (Ha 2020), film (Lee 2020), and military English (Kwon et al. 2023). Most of these subject-specific word lists were constructed through the compilation of corpora and generated a word list against the word families in GSL and/or AWL.

In linguistics, earlier lists were formulated based on research articles. Vongpuvititch, Huang and Chang (2009), drawing from a $1,554,032$ word corpus derived from 200 research articles in 5 journals, compiled a list of 603 word families, featuring 475 AWL and 128 non-AWL word-families, representing $11.12 \%$ and $2.8 \%$ of linguistic research articles, respectively. Khani and Tazik (2013) expanded the corpus size by collecting 240 research articles out of 12 journals in applied linguistics and curated 573 AWL and 200 non-AWL word types amounting to $12.48 \%$ of 1,553,450 running words. Likewise, Moini and Islamizadeh (2016) extracted 1,263 word families, reporting a $72.48 \%$ coverage by GSL and a $10.2 \%$ coverage by AWL with additional 224 word families representing $5.07 \%$ of the entire linguistics corpus. In contrast, more recent studies have shifted focus towards vocabulary in major academic textbooks. Kim and Lee (2019) analyzed a corpus of $1,141,830$ running words from five linguistics textbooks widely employed in the foundation courses for English majors, uncovering that English majors need the knowledge of the most frequent 7,000 word families for a $95 \%$ coverage of linguistics textbooks. They also curated the Linguistics Academic Vocabulary List (LAVL), consisting of the most frequent 607 word families equating to $11.05 \%$ of the entire corpus, with an overlap of 208 words sourced from AWL. Lee and Kim (2020) further delved into semantics and pragmatics, reporting that the acceptable comprehension of semantics/pragmatics textbooks requires students to acquire a vocabulary of 5,000 word families plus additional categories, with mastery of 409 word families specific to semantics and pragmatics. Among the 409 word families, 206 words overlapped with the LAVL, leaving 203 word families unique to semantics and pragmatics.

More relevant to the present study is the research on the vocabulary lists for English Education. Lee and Kim (2013) constructed English Education corpus (EECO) totaling 300,000 running words sourced from university textbooks used within specific curriculum courses. They found the combined lexical coverage of GSL and AWL reached $91.83 \%$, notably higher than the coverage reported by Coxhead (2000), which ranged from 79.8 to $88.8 \%$. Excluding words from GSL and AWL, they further generated a list of Technical Vocabulary for English Education (TV4EE) of 181 word families, representing $3.24 \%$ of EECO. Later studies (Chung 2014, Ha 2018) compiled a larger corpus based on research articles. Chung (2014) found the most frequent 45 word families beyond GSL and AWL made up $2.44 \%$ of a corpus of 55 research articles. He also examined the differing ratios of AWL coverages across sub-corpora: AWL in Korean-published research articles in ELT amounted to $11.83 \%$, slightly exceeding the portion of $11.49 \%$ in ELT articles in England and the USA. In contrast, teaching English as a native language in the USA had only $9.52 \%$ AWL coverage. These findings indicated distinct lexical choices within ELT subfields, contingent on the specific subject or theme. More recently, Ha (2018) complied a corpus of 9,186,721 running words based on 387 research articles published in domestic and international journals. He developed a word list consisting of 744 word families for English education majors, integrating 457 GSL words, 215 AWL words, 23 technical words, and 49 additional terms. In Ha's study, the combined coverage by GSL and AWL averaged at $80.92 \%$, with a coverage rate of $79.98 \%$ for texts by Korean writers and $81.82 \%$ for those by foreign writers, both of which were notably lower compared to the accumulated coverage of $91.83 \%$ in Lee and Kim (2013), which could be attributed to the nature of research articles. Table 1 summarizes vocabulary lists in linguistics and English education, including the corpus size, data types, and coverage percentages by word lists.

Table 1. Vocabulary List in Linguistics and English Education

| Area | Study | Data | Corpus $^{\text {size }}$ <br> siza $^{\mathbf{a}}$ | GSL <br> $\mathbf{( \% )}$ | AWL <br> (\%) | Discipline-Specific WL |  |
| :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Linguistics |  | Size | \% |  |  |  |  |
|  | Vongpumivitich et al. (2009) | RAs | 1.55 | NA | 11.17 | 603 | 14.07 |
|  | Khani \& Tazik (2013) | RAs | 1.55 | 76.04 | 11.96 | 773 | 12.48 |
|  | Moini \& Islamizadeh (2016) | RAs | 4.00 | 72.48 | 10.18 | 224 | 5.07 |
|  | Kim \& Lee (2019) | TBs | 1.14 | $80.59^{\text {b }}$ | NA | 607 | 11.05 |
|  | Lee \& Kim (2020) | TBs | 1.37 | $79.57^{b}$ | NA | 409 | 10.35 |
| English | Lee \& Kim (2013) | TBs | 0.30 | 80.71 | 11.12 | 181 | 3.24 |
|  | Chung (2014) | RAs | 0.25 | 75.88 | 11.83 | 45 | 2.44 |
|  | Ha (2018) | RAs | 9.19 | 70.18 | 10.74 | 72 | 3.95 |

Note. RAs $=$ Research articles; TBs $=$ Textbooks; NA $=$ Not available
${ }^{\text {a }}$ The size of each corpus is presented on a million-word basis
${ }^{\mathrm{b}}$ The coverage up to $2^{\text {nd }} 1000$ word families on BNC/COCA

Although the knowledge of GSL and AWL words aids students in comprehending textbooks and research articles in linguistics and English education, their combined utilization falls short of achieving the desired $95 \%$ lexical coverage for proficient reading. While GSL and AWL have proven instrumental for general usage in diverse contexts, they cannot effectively capture the specialized, technical vocabulary vital in the ELT field, thereby underscoring the necessity for a discipline-specific word list tailored to ELT requirements.

## 3. Research Methodology

Drawing from previous studies (Hsu, 2014; Kim and Lee 2019; Lee and Kim 2020), the current study adopted
a layered method to generate a discipline-specific vocabulary list pertaining to the fundamental domains of ELT. This approach compares the frequency of occurrence of a word in the specialized text against that of a wellestablished general large corpus. The present study curated a high-frequency vocabulary list against Nation (2012)'s twenty-five BNC/COCA 1000-word-family lists, which was designed for learners of English as a foreign language. Since this approach is designed for intermediate to advanced learners, assuming that the target learners are already acquainted with the vocabulary from the basic word list (Surtees and Horst 2013), it suits well with the context of preservice ELT teachers in the study.

### 3.1 Construction of the Corpus

A corpus was created from major ELT textbooks that were commonly utilized in the pre-service teacher training programs. By examining multiple ELT syllabi available online, the study collected a series of textbooks recurrently employed in ELT curricula and grouped them into two primary areas: Acquisition (A) and Methodology (M). Then all selected textbooks, initially available in PDF format, were converted into 12 separate text files. Guided by previous research (Hsu 2014; Kim and Lee, 2019; Lee and Kim, 2020), the materials were thoroughly reviewed and refined by removing extraneous elements such as the front matter, headers, illustrations, bibliographic references, and indices. The finalized corpus was named the ELT Textbooks Corpus (ELTTC henceforth), containing a cumulative total of $1,579,852$ running words with its two distinct sub-corpora: ELTTC-A, comprising 659,578 words from acquisition textbooks and ELTTC-M incorporating 920,274 words from methodology textbooks. Table 2 gives the composition of ELTTC including the sizes of tokens, the type/token ratio (TTR) and standardized type/token ratio (STTR) measures.

Table 2. Composition of the ELT Textbooks Corpus (ELTTC)

| Areas (corpora) | Textbooks $^{\mathrm{a}}$ | Types | Tokens | TTR | STTR |
| :--- | :--- | ---: | ---: | ---: | ---: |
|  | Book 1 | 9,636 | 130,649 | 7.38 | 43.21 |
|  | Book 2 | 9,877 | 195,844 | 5.04 | 38.12 |
| Acquisition | Book 3 | 5,128 | 71,460 | 7.18 | 36.22 |
| (ELTTC-A) | Book 4 | 5,523 | 87,508 | 6.31 | 38.81 |
|  | Book 5 | 6,703 | 94,943 | 7.06 | 40.02 |
|  | Book 6 | 5,994 | 79,174 | 7.57 | 41.55 |
|  | Sub-total | 42,861 | 659,578 | 6.76 | 39.66 |
|  | Book 7 | 9,319 | 161,255 | 5.78 | 42.25 |
|  | Book 8 | 12,966 | 284,715 | 4.55 | 4.26 |
|  | Book 9 | 9,953 | 198,836 | 5.01 | 39.18 |
| Methodology | Book 10 | 6,321 | 86,987 | 7.27 | 37.71 |
|  | Book 11 | 7,725 | 83,334 | 7.33 | 42.73 |
| Total | Book 12 | 6,162 | 920,274 | 6.23 | 39.75 |

${ }^{\text {a }}$ The list of selected textbooks is provided in Appendix A.

### 3.2 The Program

To assess the lexical threshold and retrieve the inventory of the word families of the ELTTC, the study utilized the RANGE program (Nation 2012). The RANGE software was based on comprehensive word family lists sourced from the large contemporary corpora: British National corpus (BNC) and the Corpus of Contemporary American

English (COCA). With its built-in reference BNC/COCA twenty-five 1,000-word-family lists ${ }^{1}$ categorized according to the difficulty levels, RANGE is designed to tally the frequency of the most common words required until a specified level of lexical coverage is achieved. Since the lexical coverage progresses within the BNC/COCA word lists, incremented by every 1000 -word-family band, the vocabulary demand is computed by adding the coverage percentage of each band starting from the initial 1000-word-family band and advancing through higher 1,000 -word-family bands until the cumulative coverage reaches the lexical threshold of $95 \%$, which corresponds to the vocabulary load necessary for the minimum desired level for comprehending ELT textbooks.

When the ELTTC was run on the RANGE program, the output displays the frequency of vocabularies for each 1000 word-list band of $25,000 \mathrm{BNC} / \mathrm{COCA}$ plus four additional lists including proper nouns, interjections, compounds, and abbreviations, categorized as Basewrd31, Basewrd32, Basewrd33, and Basewrd34 respectively. Following the previous studies (Hsu 2014, Kim and Lee 2019), the words extracted under 'Not found in any list' by RANGE were further examined and sorted into their respective Baseword lists as initially defined. This process resulted in the creation of an extra category 'glossary' to accommodate a list of technical words that are not present in the BNC/COCA word levels but have a domain-specific meaning and use.

### 3.3 Extracting the Word List

The discipline-specialist vocabulary list for reasonable comprehension of ELT textbooks was extracted following the method of prior research (Nation 2006, Hsu 2014). Initially, the cumulative coverage percentages of the first 2,000 word-families were established as the baseline vocabulary load and those of the additional categories were calculated and appropriately integrated prior to those of the first 2000 words, as these marginal words pose minimal learning challenges for vocabulary acquisition (Nation 2006, Hsu 2014). Then, the cumulative percentage of running words covered up to the first 2000 words was then deduced from the target 95 lexical coverage. This process resulted in the creation of the ELT Vocabulary List (ELTVL henceforth) - a specialized compilation of vocabulary pertinent to understanding ELT textbooks with a lexical coverage of $95 \%$ beyond the first 2000 words. Given that formal English education during the secondary level covers the 2,000 word families, the focus was shifted towards words beyond the first 2,000 words to cater to the need of ELT majors at the tertiary level.

When selecting target vocabulary, further criteria have been adopted from the relevant literature (e.g., Coxhead 2000, Hsu 2014, Kim and Lee 2019, Lee and Kim 2020):
(1) Specialized occurrence: The word families are beyond the first 2,000 word families.
(2) Range: Members of a word family appear at least across 7 out of 12 textbooks.
(3) Frequency: Members of a word family occur at least 72 times across textbooks in the ELTTC.

Thus, the range of $7(60 \%)$ and frequency of 72 ( 6 occurrences by 12 textbooks) were chosen after repeated experiments to fulfill the targeted lexical coverage of 95 percent. The detailed discussion of this procedure will be presented in Section 4.2 below.

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## 4. Results and Discussion

### 4.1 The Lexical Load of the ELTTC

Regarding Research Question 1, the vocabulary load for preservice teachers for moderate comprehension of the ELT textbooks was estimated by utilizing BNC/COCA based word lists. The results are summarized in Table 3 including the frequency of the words for each level of the BNC/COCA word list in addition to the coverage and cumulative percentage of the ELTTC.

Table 3. BNC/COCA base word list in the ELTTC

| Level | Tokens | \% | Cumulative \% | Word Families |
| :---: | :---: | :---: | :---: | :---: |
| Proper noun | 29,798 | 1.88 | 1.88 | - |
| Interjection | 2,214 | 0.14 | 2.02 | - |
| Compound | 8,182 | 0.52 | 2.54 | - |
| Abbreviation | 6,602 | 0.42 | 2.95 | - |
| Glossary | 2,478 | 0.16 | 3.11 | - |
| $1^{\text {st }}$ | 1,116,162 | 70.46 | 73.57 | 1000 |
| $2^{\text {nd }}$ | 191,188 | 12.07 | 85.64 | 969 |
| $3{ }^{\text {rd }}$ | 134,732 | 8.51 | 94.15 | 960 |
| $4^{\text {th }}$ | 23,032 | 1.45 | 95.60 | 830 |
| $5^{\text {th }}$ | 14,207 | 0.90 | 96.50 | 685 |
| $6^{\text {th }}$ | 6,581 | 0.42 | 96.91 | 597 |
| $7^{\text {th }}$ | 7,654 | 0.48 | 97.40 | 493 |
| $8^{\text {th }}$ | 4,848 | 0.31 | 97.70 | 427 |
| $9^{\text {th }}$ | 1,468 | 0.09 | 97.80 | 353 |
| $10^{\text {th }}$ | 2,011 | 0.13 | 97.92 | 270 |
| $11{ }^{\text {th }}$ | 1,196 | 0.08 | 98.00 | 225 |
| $12^{\text {th }}$ | 840 | 0.05 | 98.05 | 149 |
| $13^{\text {th }}$ | 797 | 0.05 | 98.10 | 135 |
| $14^{\text {th }}$ | 985 | 0.06 | 98.16 | 113 |
| $15^{\text {th }}$ | 407 | 0.03 | 98.19 | 83 |
| $16^{\text {th }}$ | 339 | 0.02 | 98.21 | 81 |
| $17^{\text {th }}$ | 587 | 0.04 | 98.25 | 71 |
| $18^{\text {th }}$ | 214 | 0.01 | 98.26 | 52 |
| $19^{\text {th }}$ | 189 | 0.01 | 98.27 | 40 |
| $20^{\text {th }}$ | 145 | 0.01 | 98.28 | 52 |
| $21^{\text {st }}$ | 169 | 0.01 | 98.29 | 37 |
| $22^{\text {nd }}$ | 89 | 0.01 | 98.30 | 32 |
| $23^{\text {rd }}$ | 96 | 0.01 | 98.30 | 22 |
| $25^{\text {th }}$ | 20 | 0.00 | 98.31 | 15 |
| $25^{\text {th }}$ | 108 | 0.01 | 98.31 | 19 |
| Not in the lists | 26,713 | 1.51 | 100.00 |  |
| TOTAL | 1,584,051 | 100.00 |  |  |

The first 1000 word families on the BNC/COCA list accounted for $70.46 \%$ of the total words in ELTTC and the second 1000 word families contributed $12.07 \%$. When combined, the cumulative coverage percentage of the
first two 1000 word families on BNC/COCA amounted to $82.53 \%$. This coverage percentage slightly exceeded $80.59 \%$ of the general linguistics textbooks by Kim and Lee (2019) and $79.57 \%$ in semantics/pragmatics text by Lee and Kim (2020). When incorporating the additional categories, cumulative coverage point reached $95.60 \%$ as indicated in Table 3 (highlighted in bold), corresponding to the fourth 1000 word families. In other words, in order to attain a lexical coverage of $95 \%$ for ELT textbooks, prospective ELT teachers need to acquire vocabulary up to the fourth level of the BNC/COCA lists encompassing 4,000 word families, in addition to proper nouns, interjections, abbreviations, compounds and the glossary. Notably, this lexical requirement is comparatively lower than 7,000 word families in general linguistics textbooks in Kim and Lee (2019) and 5,000 word families in semantics/pragmatics texts in lee and Kim (2020). This discrepancy could be interpreted as ELT textbooks containing a broader selection of general-service words. However, opting for the $98 \%$ coverage level of comprehension of the ELT textbooks, there is a striking disparity in the vocabulary threshold needed. Despite the gradual decrease in the proportion of word families across frequency bands, preservice teachers would necessitate a vocabulary size of 11,000 word families to achieve the $98 \%$ lexical coverage. Given that they are mandated to pass the National Teacher Certification Exam, it becomes crucial for them to reach the level of unassisted reading.

Meanwhile, there found a marked distinction in the distribution of the additional categories within the ELTTC in comparison to their frequency of occurrences in Kim and Lee's (2019) linguistics textbooks. Specifically, the supplementary categories in the ELTTC-transparent compounds (.52\%), abbreviations (.42\%), and glossary (.16\%) - displayed notably higher proportions. In contrast, these same categories had lower proportions within Kim and Lee's (2019) linguistic corpus: transparent compounds (.19), abbreviation (.25) and glossary (.05). As a result, the cumulative occurrences of these supplementary categories increased in the current study, lowering the lexical demand for the ELT textbooks. This approach ensures that the estimation of lexical demand remains focused on the core content of the ELT textbooks.

### 4.2 The ELT Word List (ELTVL)

In addressing Research Question 2, which aims to determine the specific types of words that make up the ELT Vocabulary List (ELTVL) necessary for a lexical coverage of 95\% of ELT textbooks, two-stage analyses were conducted. First, the threshold for the ELTVL was calculated by deducting the cumulative coverage percentage obtained from the first 2000 word levels (amounting to $85.64 \%$ on Table 3) from the desired total coverage of $95 \%$. As a result, the remaining 9.36 lexical coverage $(95 \%-85.64 \%=9.36 \%)$ will constitute the ELTVL.

Then, with the predefined inclusion criteria requiring a minimum of 72 instances in at least 7 out of 12 textbooks (as discussed in section 3.3), the compilation of ELTVL resulted in a total of 513 word families. The last entry in the ELTVL was metalinguistic at the $17^{\text {th }}$ level of BNC/COCA, with a collective count of 99 appearances distributed across 9 textbooks. Among the 513 word families included in the finalized list, 235 were found to overlap with Coxhead's (2000) AWL, while the remaining 278 word families were distinctively associated with the ELT domain. These overlapping items accounted for a lexical coverage of $4.29 \%$, thereby affirming the instrumental nature of the AWL. While the portion of AWL words within the ELTVL again reiterates its vital role in comprehending academic textbooks, it is valid to question the generality of AWL, given the significant amount of specialized vocabulary within ELT. Thus, the integration of the AWL and specialized non-AWL vocabulary unique to the ELT field can effectively guide pre-service teachers in their academic pursuits. Table 4 provides the detailed overview of word frequency and distribution of the selected words across the BNC/COCA lists with the proportions of AWL coverage. The details of the ELTVL can be found in Appendix B.

Table 4. ELTVL 513 Word Families across the BNC/COCA

| BNC/COCA | AWL | Non-AWL | ELTVL in Total |
| :---: | :---: | :---: | :---: |
| $3^{\text {rd }}$ | 213 | 150 | 363 |
| $4^{\text {th }}$ | 18 | 44 | 62 |
| $5^{\text {th }}$ | 4 | 22 | 26 |
| $6^{\text {th }}$ | 0 | 15 | 15 |
| $7^{\text {th }}$ | 0 | 16 | 16 |
| $8^{\text {th }}$ | 0 | 14 | 14 |
| $9^{\text {th }}$ | 0 | 2 | 2 |
| $10^{\text {th }}$ | 0 | 4 | 4 |
| $11^{\text {th }}$ | 0 | 2 | 2 |
| $12^{\text {th }}$ | 0 | 2 | 2 |
| $13^{\text {th }}$ | 0 | 2 | 2 |
| $14^{\text {th }}$ | 0 | 3 | 3 |
| $15^{\text {th }}$ | 0 | 1 | 1 |
| $17^{\text {th }}$ | 0 | 278 | 1 |
| Total | 235 |  | 13 |

As the frequency occurrences of the ELTVL based on the BNC/COCA show in Table 4, only the words in the $3^{\text {rd }}$ through $5^{\text {th }} 1000$ word families are identified as part of AWL. Furthermore, as the BNC/COCA levels progress through higher levels, there is a noticeable decrease in the proportion of AWL words and a simultaneous increase in the presence of the ELT-specific vocabulary not covered by the AWL. Among the ELTVL belonging to the $3^{\text {rd }}$ through $5^{\text {th }} \mathrm{BNC} / \mathrm{COCA}$ levels, the top 30 words are displayed in the order of total frequency in Table 5 , where AWL words are highlighted in bold.

Table 5. Top 30 Most Frequently Used Words in the ELTTC on BNC/COCA

| Rank | Word | Range | Frequency | Level | Rank | Word | Range | Frequency | Level |
| :---: | :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | communicate | 12 | 3003 | 3 | 16 | content | 12 | 1422 | 3 |
| 2 | task | 12 | 2908 | 3 | 17 | error | 12 | 1400 | 3 |
| 3 | acquisition | 12 | 2601 | 3 | 18 | grammatical | 12 | 1370 | 7 |
| 4 | interact | 12 | 2389 | 3 | 19 | analyze | 12 | 1279 | 3 |
| 5 | method | 12 | 2151 | 3 | 20 | appropriate | 12 | 1265 | 3 |
| 6 | linguistic | 12 | 2098 | 4 | 21 | principle | 12 | 1223 | 3 |
| 7 | context | 12 | 2097 | 3 | 22 | vocabulary | 12 | 1163 | 5 |
| 8 | grammar | 12 | 2048 | 5 | 23 | cognitive | 12 | 1057 | 4 |
| 9 | structure | 12 | 2044 | 3 | 24 | target | 12 | 1055 | 3 |
| 10 | focus | 12 | 2004 | 3 | 25 | motive | 12 | 1004 | 3 |
| 11 | text | 12 | 1818 | 3 | 26 | competence | 12 | 999 | 4 |
| 12 | strategy | 12 | 1674 | 3 | 27 | data | 12 | 974 | 3 |
| 13 | input | 12 | 1644 | 3 | 28 | technique | 12 | 974 | 3 |
| 14 | theory | 12 | 1569 | 3 | 29 | verb | 12 | 968 | 5 |
| 15 | function | 12 | 1481 | 3 | 30 | factor | 12 | 964 | 3 |

Note. The bold words align with Coxhead's (2000) AWL; The italicized words correspond to Lee and Kim's (2013) TV4EE. Note. Nation's (2012) BNC/COCA list treats acquisition and acquire as separate word families, whereas Coxhead (2000) classifies them to belong to the same category. The current study adopts Nation's classification.

While more than half of the high-frequency words listed in Table 5 above are identified as part of Coxhead's
(2000) AWL, a set of non-AWL word families, such as "cognitive," "grammatical," "vocabulary," "linguistic," and "competence," also fall within the highest frequency group of 45 words in Lee and Kim's (2013) Technical Vocabulary for English Education (TV4EE), yet with "linguistics" holding the highest total count.

During the process of vocabulary selection, it became apparent that certain world families demonstrated notable prominence within one sub-domain, but not in the other. In essence, the distribution of vocabulary seems to hinge upon the specific sub-domains. For example, the term "collocate" was found in 7 textbooks, but its total occurrences reached 140 with a notable concentration in 5 methodology textbooks ( 119 cases in ELTTC-M). Similarly, "declarative" appeared 94 times across 7 textbooks, predominantly within the 6 acquisition textbooks ( 85 times in ELTTC-A), with just 9 instances in a single methodology textbook. This pattern also extends to words that fail to meet the aforementioned inclusion criteria of at least 72 occurrences across 7 textbooks. The word "automaticity," for instance, appeared across 9 ELT textbooks, but their overall occurrences were limited to 63 instances with higher frequency in acquisition textbooks (40 cases in ELTTC-A). Likewise, the term "classification" occurred 55 times across 9 ELT textbooks, but the instances were largely concentrated in methodology textbooks (41 cases ELTTC-M). This observation calls for the need for further analyses to delve into the distinction between different ELT sub-domains and further elucidate the differences.

### 4.3 Cross-Comparison of ELT Sub-Corpora: Acquisition versus Methodology

Research Question 3 examines potential variations in the lexical threshold and the frequency of disciplinespecific academic words between sub-corpora, which incorporates the following questions: How many words are required for students to comprehend the ELT textbooks in acquisition compared to those in methodology? What is the frequency and dispersion pattern of discipline-specific academic words in each corpus?

### 4.3.1. The Lexical Demands across ELT Sub-Domains

In order to examine the variations in lexical demands across different ELT domains, the study repeated the same procedure (as used in 4.1) with two sets of sub-corpora: ELTTC-A (acquisition) and ELTTC-M (Methodology). Results indicated that the textbooks in acquisition demand higher level of lexical load than those in methodology. To achieve the lexical coverage of $95 \%$, acquisition textbooks require preservice teachers to have a minimum of 5,000 words, whereas methodology textbooks necessitate a minimum of 3,000 words. Table 6 displays the word frequencies and coverage percentage of each corpus.

In acquisition textbooks, the initial 1000 word families on the BNC/COCA list constituted $67.42 \%$ of the total words in the ELTTC-A, while the subsequent 1000 word families contributed $12.66 \%$. When combined, the cumulative coverage percentage of the first two sets of 1000 word families from BNC/COCA reached $80.08 \%$. Taking into account the occurrences of supplementary categories including proper nouns, interjections, compounds, abbreviations, and glossary, the cumulative coverage percentage up to the two thousand BNC/COCA levels rose to 83.80 (highlighted in bold in Table 5). This indicates an additional lexical load of $11.2 \% ~(95 \%-83.80 \%=11.2 \%)$ for achieving acceptable comprehension of acquisition textbooks. Alternatively, to attain a lexical coverage of 95\% for acquisition textbooks, prospective ELT teachers need to master the vocabulary up to the fifth level around $95.59 \%$ encompassing 5,000 word families. Conversely, methodology textbooks demonstrated a comparatively lower level of lexical demand. The combined coverage by the first and second 1000 word families reaching a slightly higher lexical coverage of $84.30 \%$. The cumulative percentage of these initial two sets of 1000 word families, in conjunction with additional categories, increased to $86.97 \%$ of the ELTTC-M, indicating a lesser lexical load of $8.03 \%(95 \%-86.97 \%=8.03 \%)$, compared to acquisition textbooks. As a result, in order to achieve
a comprehension level of $95 \%$ for methodology textbooks, preservice ELT teachers are required to familiarize themselves with a minimum of 3,000 word families as highlighted in Table 6, corresponding to $95.11 \%$.

Table 6. Comparison of Lexical Thresholds between ELTTC-A and ELTTC-M

| Level | ELTTC-A |  |  |  | ELTTC-M |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Tokens | \% | Cum. \% | WF | Tokens | \% | Cum. \% | WF |
| Proper N. | 16,208 | 2.44 | 2.44 | - | 13,590 | 1.48 | 1.48 | - |
| Interj. | 1,103 | 0.17 | 2.61 | - | 1,111 | 0.12 | 1.60 | - |
| Comp. | 2,292 | 0.35 | 2.95 | - | 5,890 | 0.64 | 2.24 | - |
| Abbrev. | 3,737 | 0.56 | 3.52 | - | 2,865 | 0.31 | 2.55 | - |
| Glossary | 1,351 | 0.20 | 3.72 | - | 1,127 | 0.12 | 2.67 | - |
| 1st | 447,041 | 67.42 | 71.14 | 986 | 669,121 | 72.65 | 75.32 | 999 |
| 2nd | 83,924 | 12.66 | 83.80 | 867 | 107,264 | 11.65 | 86.97 | 937 |
| 3 rd | 59,778 | 9.02 | 92.81 | 866 | 74,954 | 8.14 | 95.11 | 933 |
| 4th | 11,141 | 1.68 | 94.49 | 596 | 11,891 | 1.29 | 96.40 | 757 |
| 5th | 7,283 | 1.10 | 95.59 | 445 | 6,924 | 0.75 | 97.15 | 591 |
| 6th | 2,830 | 0.43 | 96.02 | 371 | 3,751 | 0.41 | 97.56 | 506 |
| 7th | 3,632 | 0.55 | 96.57 | 311 | 4,022 | 0.44 | 97.99 | 391 |
| 8th | 2,688 | 0.41 | 96.97 | 250 | 2,160 | 0.23 | 98.23 | 335 |
| 9th | 725 | 0.11 | 97.08 | 194 | 743 | 0.08 | 98.31 | 258 |
| 10th | 1,084 | 0.16 | 97.24 | 141 | 927 | 0.10 | 98.41 | 198 |
| 11th | 558 | 0.08 | 97.33 | 139 | 638 | 0.07 | 98.48 | 158 |
| 12th | 413 | 0.06 | 97.39 | 77 | 427 | 0.05 | 98.53 | 111 |
| 13th | 432 | 0.07 | 97.46 | 77 | 365 | 0.04 | 98.56 | 87 |
| 14th | 565 | 0.09 | 97.54 | 66 | 420 | 0.05 | 98.61 | 76 |
| 15th | 212 | 0.03 | 97.57 | 42 | 195 | 0.02 | 98.63 | 54 |
| 16th | 227 | 0.03 | 97.61 | 56 | 112 | 0.01 | 98.64 | 45 |
| 17th | 344 | 0.05 | 97.66 | 38 | 243 | 0.03 | 98.67 | 50 |
| 18th | 87 | 0.01 | 97.67 | 27 | 127 | 0.01 | 98.68 | 33 |
| 19th | 105 | 0.02 | 97.69 | 25 | 84 | 0.01 | 98.69 | 27 |
| 20th | 63 | 0.01 | 97.70 | 30 | 82 | 0.01 | 98.70 | 33 |
| 21th | 62 | 0.01 | 97.71 | 20 | 107 | 0.01 | 98.71 | 22 |
| 22th | 55 | 0.01 | 97.71 | 15 | 34 | 0.00 | 98.72 | 21 |
| 23th | 40 | 0.01 | 97.72 | 15 | 56 | 0.01 | 98.72 | 9 |
| 24th | 8 | 0.00 | 97.72 | 8 | 12 | 0.00 | 98.72 | 6 |
| 25th | 45 | 0.01 | 97.73 | 9 | 63 | 0.01 | 98.73 | 14 |
| Not listed | 15,029 | 2.27 | 100.00 |  | 11,684 | 1.27 | 100.00 |  |
| TOTAL | 663,062 |  |  |  | 920, 989 |  |  |  |

Note. Cum. \% = Cumulative \% coverage in tokens; WF = Word Families

In summary, achieving a $95 \%$ lexical coverage of acquisition textbooks entails familiarity with the most frequent 5,000 word families alongside proper nouns, interjections, abbreviations, transparent compounds, and glossary, whereas methodology textbooks require a smaller vocabulary size of 3,000 word families. The varying lexical requirements between these two sub-domains highlight a notable distinction - a greater proportion of the initial 2,000 words in methodology books surpasses the coverage found in acquisition textbooks. The gap in vocabulary demands becomes more pronounced when the preservice teachers aim for a $98 \%$ lexical coverage, as acquisition textbooks require a substantial amount of vocabulary beyond the $25^{\text {th }} \mathrm{BNC} / \mathrm{COCA}$ lists. While not a fixed parameter, the clear gap in lexical thresholds between these two sub-corpora underscores that ELT majors need a more extensive vocabulary repertoire when engaging with acquisition textbooks.

### 4.3.2 Cross-Comparison of the Most Frequent 30 Words in the ELTVL

Further comparison is made on the frequency and dispersion of discipline-specific academic words within the two sub-corpora. Notably, an analysis of the top 30 words in each list also marks a discrepancy between the two lists. Table 7 presents the most repeatedly occurring words in the following comparative lists with the information about the range of occurrences and the frequency on the corresponding BNC/COCA level of each word.

Table 7. Top 30 Words in the ELTVL

| $\begin{gathered} \text { ELTVL } \\ \text { Rank } \end{gathered}$ | ELTVL-A |  |  | $\begin{gathered} \text { ELTVL } \\ \text { Rank } \\ \hline \end{gathered}$ | ELTVL-M |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Word | Frequency | Level |  | Word | Frequency | Level |
| 3 | acquisition | 2239 | 3 | 2 | task | 2009 | 3 |
| 4 | interact | 1374 | 3 | 1 | communicate | 1981 | 3 |
| 6 | linguistic | 1362 | 4 | 5 | method | 1724 | 3 |
| 13 | input | 1251 | 3 | 11 | text | 1620 | 3 |
| 14 | theory | 1084 | 3 | 16 | content | 1218 | 3 |
| 9 | structure | 1060 | 3 | 10 | focus | 1185 | 3 |
| 7 | context | 1032 | 3 | 8 | grammar | 1166 | 5 |
| 1 | communicate | 1022 | 3 | 7 | context | 1065 | 3 |
| 2 | task | 899 | 3 | 4 | interact | 1015 | 3 |
| 15 | function | 899 | 3 | 9 | structure | 984 | 3 |
| 8 | grammar | 882 | 5 | 12 | strategy | 983 | 3 |
| 17 | error | 876 | 3 | 28 | technique | 876 | 3 |
| 10 | focus | 819 | 3 | 20 | appropriate | 856 | 3 |
| 19 | analyze | 778 | 3 | 22 | vocabulary | 797 | 5 |
| 27 | data | 774 | 3 | 21 | principle | 743 | 3 |
| 18 | grammatical | 766 | 7 | 6 | linguistic | 736 | 4 |
| 36 | hypothesis | 738 | 3 | 18 | grammatical | 604 | 7 |
| 23 | cognitive | 732 | 4 | 15 | function | 581 | 3 |
| 12 | strategy | 691 | 3 | 24 | target | 564 | 3 |
| 31 | acquire | 681 | 3 | 41 | oral | 557 | 3 |
| 26 | competence | 662 | 4 | 52 | assess | 554 | 3 |
| 29 | verb | 613 | 5 | 53 | evaluate | 551 | 3 |
| 30 | factor | 599 | 3 | 40 | effective | 550 | 3 |
| 59 | universe | 546 | 3 | 34 | phrase | 530 | 3 |
| 47 | utter | 543 | 4 | 45 | proficient | 528 | 7 |
| 25 | motive | 525 | 3 | 17 | error | 524 | 3 |
| 38 | concept | 494 | 3 | 71 | syllabus | 523 | 7 |
| 24 | target | 491 | 3 | 70 | curriculum | 517 | 3 |
| 21 | principle | 480 | 3 | 32 | response | 509 | 3 |
| 37 | complex | 468 | 3 | 49 | procedure | 504 | 3 |

Note. Underlining is used to indicate the absence of overlap between the two lists.

Among the top 30 words in the ELTVL, the following 14 words are overlapped: communicate, task, interact, linguistic, context, grammar, structure, focus, strategy, function, error, grammatical, principle, and target. Noticeable is that both lists contain specific terms relevant to their respective sub-domains as underlined in Table 7 above. This divergence is predictable given the inherent nature of the two corpora being examined. Excluding the overlapping words, the acquisition-specific word list is characterized by lexemes such as acquisition, input, theory, analyze, data, hypothesis and cognitive, which are undoubtedly pivotal for formulating theories about the learning process itself. Conversely, the methodology-specific word list features terms like method, text, content, technique, appropriate, vocabulary, and oral, which are closely tied to the practical strategies and methodologies
employed in the instructional process. It is clear that the non-overlapping words in each sub-corpus are highly relevant to their respective domains, underscoring the specificity of vocabulary within each sub-corpus. These findings highlight the importance of developing specialized vocabulary lists tailored to specific domains. Such domain-specific knowledge would better meet the needs of ELT majors on the distinct academic requirements.

### 4.4 Features of Additional Categories

The distinct nature of ELT vocabulary was further elucidated with the additional categories. Of particular significance are the glossary words, due to their inclusion of a substantial number of technical terms directly pertinent to ELT domains. The glossary category comprises words that are not found in any of the BNC/COCA word lists but possess a strong technical sense in the context of ELT textbooks. Examples of such terms include "audiolingual," "interlanguage," and "sociocultural." Another group of words with a strong technical use in high frequency took the form of transparent compounds, such as "classroom," "feedback," and "textbook" as well as abbreviations like " $L 1$," " $L 2$," "SLA," " $E S L$." Each of these terms indeed represents a distinct component in the ELT domain. Based on the same criteria for the inclusion in the ELTVL (requiring a minimum of 72 occurrences within a range of 7 out of 12 textbooks as outlined in Sections 3.3 and 4.2), a sum of 26 ELT-specific words were identified from the glossary, compounds, and abbreviations categories. Table 8 provides a comprehensive overview of the frequency and range of this ELT-specific list retrieved in the additional categories in the ELTTC, juxtaposed with their corresponding occurrences in each sub-corpus.

Although these categories were not included in the compilation of the ELTVL due to their minimal learning load (as stipulated by Hsu 2014), it is essential for the students of ELT major to familiarize themselves with these terms, since these high-frequency terms carry domain-specific meanings. Following Chung and Nation (2004), these words are functionally classified as technical vocabulary since their meanings are closely related to the subject area with a significantly higher frequency of occurrences within the specific field, contributing to subjectspecific knowledge. As expected, several words in Table 8 coincide with the ELT vocabulary highlighted in prior research. Among these words, classroom, feedback, and textbook have consistently been classified as a part of the high-frequency group in previous studies. About half of the high-frequency words in Table 8 were also recognized as ELT-specific vocabulary by Lee and Kim (2013); classroom, L1/L2, feedback, SLA, ESL, textbook, interlanguage, EFL, sociocultural, classmate, online, and audiolingual (boldfaced in Table 8). Similarly, Ha's (2018) technical and other word lists overlap with the underlined terms like feedback, nonnative, sociocultural, classroom, textbook, online, and long-term. The commonalities across these words provide insight into the nature of ELT vocabulary, as many of these jargons point to the interactional aspects of language learning and instruction in a classroom setting.

A noteworthy observation regarding ELT textbooks is their abundant utilization of abbreviations and compound nouns to represent various ELT methods and principles, which could also fall under the category of glossary. While the strategic use of such condensed language helps convey complex concepts efficiently, the concentrated presence of such language in one sub-corpus highlights the distinctiveness of the two sub-domains, particularly concerning words that cannot meet the selection criteria of the minimum of 72 occurrences across 7 textbooks. For instance, the abbreviation "ESP" (English for Specific Purposes) was present in 5 methodology books, totaling 121 instances, while "ELT" was found in 6 methodology books with 87 occurrences. Remarkably, both terms were entirely absent from acquisition textbooks. Another recurrent abbreviation was "TBLT" (Task-Based Language Teaching), along with such variations as "TBL" and "TBI," which amounted to 79 instances across 5 methodology books. In case of compounds, the term "jigsaw" appeared across 9 textbooks, yet the total occurrences were
confined to 45 with 37 instances exclusively present in all 6 methodology books. Similarly, the word "website" occurred a total of 113 times across 5 methodology textbooks, but only once in a single acquisition textbook.

Table 8. ELT-Specific Words in Additional Categories of the ELTTC

| Category | Word | Range | Frequency | ELTTC-A |  |  | ELTTC-M |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | Rank | Range | Frequency | Rank | Range | Frequency |
| CMP | classroom | 12 | 3042 | 3 | 6 | 791 | 1 | 6 | 2251 |
| ABBR | L2 | 12 | 1743 | 1 | 6 | 1380 | 12 | 6 | 119 |
| CMP | feedback | 12 | 1065 | 5 | 6 | 518 | 3 | 6 | 547 |
| ABBR | SLA | 12 | 867 | 2 | 6 | 827 | 21 | 6 | 40 |
| ABBR | ESL | 12 | 836 | 10 | 6 | 120 | 2 | 6 | 716 |
| ABBR | L1 | 12 | 803 | 4 | 6 | 684 | 5 | 6 | 363 |
| CMP | textbook | 11 | 498 | 16 | 5 | 37 | 4 | 6 | 461 |
| GLS | interlanguage | 10 | 416 | 6 | 6 | 390 | 24 | 4 | 26 |
| ABBR | i.e. | 11 | 368 | 9 | 6 | 175 | 9 | 6 | 193 |
| ABBR | EFL | 8 | 336 | 25 | 2 | 10 | 6 | 6 | 326 |
| GLS | sociocultural | 12 | 334 | 8 | 6 | 241 | 17 | 6 | 93 |
| ABBR | NS | 7 | 329 | 7 | 5 | 299 | 23 | 2 | 32 |
| ABBR | CLT | 9 | 246 | 17 | 3 | 32 | 7 | 6 | 214 |
| GLS | group-work | 9 | 223 | 19 | 4 | 20 | 8 | 5 | 203 |
| GLS | role-play | 10 | 183 | 19 | 4 | 20 | 10 | 6 | 171 |
| GLS | pair-work | 10 | 163 | 18 | 4 | 25 | 11 | 6 | 138 |
| CMP | classmate | 9 | 134 | 19 | 4 | 20 | 14 | 5 | 114 |
| CMP | online | 8 | 130 | 24 | 4 | 13 | 13 | 4 | 117 |
| ABBR | TESOL | 8 | 129 | 22 | 2 | 19 | 15 | 6 | 110 |
| GLS | audiolingual | 12 | 124 | 14 | 6 | 48 | 18 | 6 | 76 |
| CMP | non-native | 7 | 113 | 11 | 4 | 94 | 25 | 3 | 21 |
| CMP | long-term | 10 | 110 | 15 | 5 | 41 | 20 | 5 | 69 |
| CMP | homework | 10 | 105 | 26 | 4 | 7 | 16 | 6 | 98 |
| CMP | self-esteem | 9 | 97 | 12 | 4 | 60 | 22 | 5 | 37 |
| CMP | checklist | 7 | 87 | 23 | 2 | 15 | 19 | 5 | 72 |
| ABBR | CA | 10 | 75 | 13 | 5 | 57 | 26 | 5 | 18 |

Note. CMP = transparent compounds; ABBR = abbreviations; GLS = glossary
Note. Bold words overlap with Lee and Kim's (2013) list; Underlined words correspond to Ha's (2018) list.

A parallel pattern also emerges with acquisition textbooks, where there is a clear prominence of vocabulary used in theorizing perspectives and models in language learning. For example, the term "connectionism" appeared a total of 98 times, with a noteworthy concentration of 93 instances across 6 acquisition textbooks. Comparably, among abbreviations, "UG" occurred 260 times exclusively within 6 acquisition books, while "ZPD" appeared 68 instances across acquisition books. An intriguing pattern was further identified with the use of the abbreviations that designate interaction partners or interlocutors in conversations, as well as the roles of student and teacher in instructional practices. The acronym "NS" (Native Speaker) appeared in various forms like "NES (Native English Speakers)" and "NSE (Native Speakers of English)," while its counterpart "NNS" (Non-Native Speaker) was seen in forms like "NNS(s)" and "NNSE(s)." The abbreviation "NS" surfaced in 329 instances, mainly in 5 acquisition textbooks with a single methodology textbook. In contrast, its counterpart "NNS" occurred 338 times across 10 textbooks with its full compound noun "non-native" appearing 113 times, rather evenly distributed between the two domains. In acquisition textbooks, "NS" and "NNS" were typically used in an authentic NS - NNS dyad often engaged in negotiated interaction, but the use of "NS" did not automatically imply the role of a teacher providing
input or feedback facilitating English Language Learners' (ELL) in their communication skills. Meanwhile, the acronym "NNS" with the meaning of the teacher as opposed to ELL had another pair of variation, NEST (The native English-speaking teacher) versus non-NEST, though this unique type was not counted in the total occurrences as the identical word families. This particular pattern suggests the two domains within ELT differ not only in the distribution of these technical vocabulary but also vary in their types.

To sum up, the analysis of ELT sub-domains reveals a unique and specialized vocabulary that is integral to the discipline. Glossary words, transparent compounds, and abbreviations are all considered functionally technical, as they serve specific purposes in conveying complex ELT concepts efficiently, with their meanings closely tied to the ELT domain. Notably, the distribution of these technical words varies across sub-domains, further highlighting the distinct features of academic language within ELT. Therefore, familiarity with subject-specific technical vocabulary enhances a deeper understanding of ELT textbooks and the field as a whole.

## 5. Conclusion

The study aims to analyze the vocabulary load in academic textbooks for students majoring in ELT and to construct a comprehensive list of the most frequently used vocabulary for preservice ELT teachers. For the purposes, the study compiled a corpus (ELTTC) consisting of approximately 1.6 million tokens out of 12 university academic textbooks in ELT. First, it assessed the lexical coverage for adequate understanding of these major ELT textbooks by running ELTTC on RANGE using the built-in twenty-five BNC/COCA 1000-word-family list, Next, the study established a specialist academic vocabulary list in ELT (ELTVL) based on the criteria of at least 72 occurrences across a range of 7 out of 12 ELT textbooks. Additionally, the study compared the specific vocabulary demands between two pivotal sub-areas in ELT- language acquisition and teaching methodology and analyzed the frequency and distribution of discipline-specific academic vocabulary within each corpus, highlighting the patterns of specialized words within each domain.

The findings revealed that reaching a 95\% lexical threshold in ELT textbooks requires preservice ELT teachers to be familiar with approximately 4,000 most frequent word families, in addition to proper nouns, interjections, transparent compounds, abbreviations, and glossary terms. Interestingly, this lexical requirement appears to be lower compared to the vocabulary demands of general linguistics textbooks as estimated by Kim and Lee (2019) and semantics/pragmatics texts as noted by Lee and Kim (2020). One possible interpretation of this difference is that ELT textbooks tend to incorporate a broader range of general service words, likely for the purpose of exemplifying discussion questions, classroom practices, activities and exercises. In contrast, linguistics textbooks might focus more on specialized terminology and concepts, which could explain the higher lexical threshold needed for comprehension in that area.

The study also identified a total of 513 word families beyond the initial 2,000 word families, accounting for $9.36 \%$ of the entire corpus. Among these 513 word families, 235 were identified to be part of Coxhead's (2000) AWL representing $4.29 \%$ of ELT textbooks, while the remaining 278 word families were specifically associated with the field of ELT. Given the considerable amount of AWL in the ELTVL, the findings underscore the crucial role of AWL in comprehending academic textbooks. However, the study also raises questions about the usefulness and universality of the AWL, which is evidenced by the greater portion of additional 278 ELT-specific word families in the current study. These specialized terms are pivotal for ELT majors in achieving a sufficient level of comprehension when studying their academic textbooks.
Further investigation indicated that acquisition textbooks imposed a more substantial lexical demand on ELT
majors. Achieving a 95\% lexical coverage in acquisition textbooks necessitates knowledge of the most frequent 5,000 word families, whereas methodology textbooks had a lower vocabulary requirement, with a lexical size of 3,000 word families. Moreover, words extracted from glossaries, transparent compounds, and abbreviations were also considered functionally technical because they serve specific functions in efficiently conveying complex ELT concepts, with their meanings closely linked to each ELT domain. Importantly, the distribution of these technical words varies across domains of acquisition and methodology, underscoring the unique characteristics of academic language within the specific domains of ELT, the knowledge of which enriches the comprehension of ELT textbooks and the entire discipline as well.

The findings suggest some pedagogical implications. First, the assessment of the vocabulary requirements and the identification of word lists in a specific field hold valuable insights for both students and faculty members. This knowledge informs students about their academic preparation and relevant goal to be reached. Familiarity with the high-frequency academic vocabulary list can significantly benefit students in enhancing their academic literacy by focusing their efforts on vocabulary of relevance and immediate needs, leading to higher levels of achievement in their coursework, and ultimately benefit them beyond their academic studies. Instructors can also leverage these insights from vocabulary analysis. They can design or adapt course materials that cater to students' linguistic needs and readiness. Access to a well-curated essential vocabulary list ensures that course content is both suitable and appropriately challenging, allowing them to tailor their teaching strategies and materials to better support their students' comprehension. Additionally, they can utilize the vocabulary index to precisely gauge students' language proficiency and academic readiness, thereby improving their teaching practices and further developing own expertise in teaching profession. Second, the study offers valuable information for materials development and curriculum design, encompassing both the minimum lexical requirements and a comprehensive range of key vocabulary necessary for students' successful academic performance. This resource can empower the materials writers to craft more effective learning materials and equip educators to develop curricula that are finely attuned to the specific linguistic needs of their students. Third, the analysis of the ELT-specific vocabulary not only reveals the common vocabulary but also sheds light on the distinctive terminologies within sub-areas. This insight carries significant implications, emphasizing the necessity of developing customized vocabulary resources for the acquisition and methodology domains within ELT. These resources would be instrumental in meeting the specific academic needs of ELT majors, equipping them with the linguistic tools necessary to engage with the ELT textbooks more effectively. Consequently, the study highlights the practical application of corpus analysis in ELT methodologies, evaluation, and materials development by illustrating how corpus analysis aids in the identification of the specific vocabulary and lexical loads.

The vocabulary list serves as a powerful resource, equipping students with the linguistic capabilities essential for effective communication, greater text comprehension, and meaningful engagement across personal, academic, and professional contexts. For preservice teachers, it becomes imperative to build a strong foundation in academic vocabulary, as the demands for vocabulary become even more critical as they progress in their studies, they encounter an increasingly diverse range of texts across various content areas. Furthermore, the demands placed on preservice teachers for vocabulary growth are continuous and dynamic, given the evolving nature of language and the changing academic landscape. Since such demands require ongoing growth in their academic repertoire, the comprehensive vocabulary toolkit is essential, allowing them not only to excel in their academic pursuits but also to be effective educators who can facilitate meaningful language learning experiences for their students. Ultimately, the ELT vocabulary list serves as a bridge between language learning and professional competence, enabling preservice teachers to navigate their educational journey and excel in their professional development.

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Examples in: English
Applicable Languages: English
Applicable Level: Tertiary

## Appendix A

## Selected Academic Textbooks in ELT

Brown, H. D. 2007. Principles of Language Learning and Teaching, 4th ed. White Plain, NY: Addison Wesley Longman Brown, H. D. 2007. Teaching by Principles: An Interactive Approach to Language Pedagogy, $3^{\text {rd }}$ ed. Pearson Education.
Celce-Murcia, M., D. M. Brinton, and M. A. Snow. Eds. 2014. Teaching English as a second or foreign Language, 4th ed. Boston, MA: Heinle \& Heinle.
Gass, S. M., and Selinker, L. 2008. Second Language Acquisition: An Introductory Course, 3rd ed. New York, NY: Routledge. Harmer, J .2007. The Practice of English Language Teaching, 4th ed. Harlow, England: Pearson Longman.
Johnson, M. 2004. A Philosophy of Second Language Acquisition. New Haven, CT: Yale University Pres.:
Larsen-Freeman, D. and M. Anderson. 2011. Techniques and Principles in Language Teaching, 2nd ed. Oxford: Oxford University Press.
Lightbown, P. M. and N. Spada. 2006. How Languages are Learned, 3rd ed. Oxford: Oxford University Press.
McDonough, J., Shaw, C. and H. Masuhara. 2013. Materials and Methods in ELT: A Teacher's Guide, $3^{\text {rd }}$ ed. Chichester, West Sussex: Wiley-Blackwell.
Mitchell, R. and F. Myles. 2004. Second Language Learning Theories, $2^{\text {nd }}$ ed. London: Hodder Arnold
Richards, J. C. and T. S. Rodgers. 2001. Approaches and Methods in Language Teaching, 2nd ed. Cambridge: Cambridge University Press.

Saville-Troike, M. 2006. Introducing Second Language Acquisition. Cambridge: Cambridge University Press.

# Appendix B <br> The ELT Vocabulary List (ELTVL) 

Note: The ELTVL includes the 513 word families beyond the BNC/COCA 2000 words including 235 AWL words which are highlighted in bold. A number is given after each word to indicate the total frequency occurrences across 12 ELT textbooks.

| abstract_203 | contrast_561 | focus_2004 | mere_143 | relevant_387 |
| :--- | :--- | :--- | :--- | :--- |
| academy_610 | controversy_96 | formal_575 | metalinguistic_94 | reproduce_75 |
| accompany_114 | convention_157 | format_151 | metaphor_164 | request_200 |
| accomplish_215 | convey_182 | formation_206 | method_2151 | resolve_82 |
| accurate_532 | cooperate_264 | former_108 | minimal_132 | resource_479 |
| achieve_585 | core_118 | formula_242 | mode_179 | respond_579 |
| acknowledge_120 | corpus_170 | fossil_138 | modify_279 | response_876 |
| acquire_885 | correlate_105 | foster_84 | module_101 | restrict_136 |
| acquisition_2601 | correspond_182 | foundation_144 | monitor_258 | retain_91 |
| activate_142 | counsel_126 | framework_410 | monolingual_94 | reveal_160 |
| adequate_153 | criteria_273 | frequency_224 | moreover_98 | review_619 |
| adjective_133 | critic_347 | frequent_393 | morpheme_264 | revise_147 |
| adjust_111 | criticism_100 | function_1481 | morphology_267 | reward_135 |
| administer_80 | cue_256 | fundamental_175 | motive_1004 | rhetoric_93 |
| adopt_221 | furthermore_136 | multilingual_161 | rhythm_102 |  |
| adverb_123 | data_974 | disalum_555 | gap_189 | multiple_310 |

boundary_74
brainstorm_75
candidate_105
capacity_248
capture_92
category_695
characteristic_504
chart_267
chunk_124
cite_183
clarify_185
classify_93
clause_360
cluster_94
code_173
cognition_85
cognitive_1057
coherent_72
collaborate_323
colleague_289
collocate 140
column_97
com_91
communicate_3003
compensate_72
compete_79
competence_999
competent_220
complement_123
complex_831
component_385
compose_247
comprehend_864
comprehensive_105
concept_827
conclude_192
conclusion_282
conduct_300
confer_112
confidence_145
confirm_101
conflict_79
consequence_87
considerable_223
consist_238
consistent_195
consonant_109
constitute_163
constrain_273
construct_824
consult 95
content_1422
context_2097
continuum_145
dominant_130
draft_146
drill_325
dynamic_96
effective_775
efficient_170
ego_73
elaborate_119
electronic_81
element_570
elementary_167
elicit_245
embed_102
emerge_291
empathy_90
emphasis_274
emphasize_310
empirical_159
enable_219
encounter_243
enhance 230
ensure_142
entry_113
equivalent_108
error_1400
essay_138
essential_355
estimate_92
et_331
etc_564
evaluate_655
evident_82
exception_99
excerpt_72
exclusive_116
exemplify_83
expand_123
experiment_291
expert_137
explicit_556
explore_321
extensive_269
extent_352
external_210
extract_114
extrovert_88
facilitate_318
factor_964
faculty_79
failure_115
false_81
filter_88
flexible_94
fluent_436
infer_175
inflect_80
informal_206
inhibit_105
initial_387
initiate_204
innate_223
innovate_90
input_1644
inquire_81
insight_183
institution_287
intake_142
integrate_631
intellectual_92
intelligence_346
interact_2389
interfere_200
interlocutor_145
intermediate_289
internal_384
international_207
interpret_682
intervene_99
intonation_244
intrinsic_190
intuition_88
isolate_172
journal_399
justify_91
label_115
latter_183
lecture_210
lexical_558
lexicon_112
likeness_118
linguist_236
linguistic_2098
link_393
literacy_368
literal_84
literary_114
literature_296
logic_195
longitudinal_96
majority_106
manifest_109
manipulate_139
mature_85
mechanic_87
mechanism_186
media_182
mediate_143
medium_119
pedagogy_405 subordinate_76
peer_304 subsequent_163
pencil_74 substitute_95
perceive_328
perception_211
periphery_73
permission_113
permit_76
personality_178
perspective_591
phase_199
phenomenon_204
philosophy_122
phoneme_116
phonetic_85
phonology_346
phrase_865
plural_191
pose_98
potential_398
practitioner_77
pragmatic_346
pre_189
precede_180
precise_119
predict_619
preposition_115
primary_515
principal_77
principle_1223
prior_200
priority_100
procedure_696
proceed_94
proficient_724
promote_325
prompt_132
pronoun_177
proponent_78
psycholinguistic_106
psychology_536
publish_329
pursue_77
quantity_124
questionnaire_107
recast_287
receptive_108
recognition_156
reflect_572
regulate_167
reinforce_202
reject_132
relative_572
relevance_78
succeed_85
sufficient_173
sum_96
summary_336
superior_75
survey_187
sustain_74
syllable_199
syllabus_545
symbol_173
synonym_75
syntactic_234
syntax_235
target_1055
task_2908
technical_111
technique_974
text_1818
theme_250
theoretical_321
theory_1569
trait_82
transcript_137
transform_119
transition_109
translate_494
trend_109
trigger_73
tutor_161
ultimate_201
underlie_310
undertake_72
unique_136
universe_587
usage_120
utilise_108
utter_714
valid_202
variety_730
verb_968
verbal_384
versus_287
via_83
virtual_137
visual_233
vocabulary_1163
volume_141
vowel_172
zone_86


[^0]:    ${ }^{1}$ Following Nation, a word family consists of a base or headword, "its inflected forms and its closely related derived forms (2001)." Nation's (2017) word families in the BNC/COCA list adhere to Bauer and Nation's (1993) classification, including verb inflections, plurals, prefixes and suffixes, up to level 6, but not level 7, i.e. classical roots and affixes. As a result, Nation's BNC/COCA list includes a slightly different set of word families from AWL.

