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The Frequency of Affixes and Affixed Words in Japanese Junior High School English Textbooks: A Corpus Study

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Abstract

Morphological knowledge is essential for expanding vocabulary. Considering that textbooks are the main source of English-language exposure for learners in Japan, it is important to know to what degree these learners are exposed to affixes and affixed words therein. This study aims to show the number of types of affixes and affixed words contained in Japanese junior high school textbooks. By adding more affixes and allophones than previous studies, the results of this study indicated that both the types and tokens of prefixes and suffixes in the textbooks are limited, thus suggesting that textbooks alone may not be sufficient, and that other materials and/or explicit instructions are needed to improve learners' morphological knowledge. Junior high school English teachers may utilize the information provided by this study to decide which affixes should be used for explicit instruction. Some implications for teaching affixes are discussed.

1. Introduction

Morphological knowledge plays an essential role in vocabulary acquisition. This knowledge enables learners to combine small linguistic components such as affixes and bases to expand their vocabulary. This section first overviews morphological knowledge in the first language (L1) acquisition field, then reviews studies on affixed words in Japanese textbooks, noting some limitations therein, and finally, presents the purpose of this study.

1.1 Morphological knowledge in L1 English

Morphological knowledge, also known as morphological awareness, in the first language acquisition field is defined as “the ability to analyze words into smaller meaningful parts such as prefixes, roots, and suffixes” (Nagy, Carlisle, & Goodwin, 2014, p.4). It has a significant impact on vocabulary growth and literacy development for children. L1 English children learn a large number

of new words as they move into the higher grades in elementary school. Among those new words, 60% to 80% are morphologically complex (Anglin, 1993; Nagy, & Anderson, 1984). Most of these morphologically complex words have meanings predicable from their components, such that readers can infer and learn their meaning while reading. The more children read, the more their morphological awareness grows, and vice-versa (Berninger, Abbott, Nagy, & Carlisle, 2010; Carlisle, 2000). Children's reading materials provide the primary sources for developing their morphological awareness.

Tyler and Nagy (1989) further divide morphological awareness into three stages. The first stage is to acquire relational knowledge. Proficiency in this knowledge enables learners to recognize that complex words have an internal structure and may share common bases. For example, *development*, *developer*, and *developable* have *develop* in common. At the second stage, referred to as syntactic knowledge, the learners know the syntactic category because it is marked by an affix. For example, *development* is a noun marked by *-ment*. The last stage is called distributional knowledge. With this knowledge, learners know that a certain affix can be attached to a certain base. For instance, *-ment* can be attached to a verb to make a noun, but it cannot be attached to bases with other syntactic categories. These stages are successive, and relational knowledge is supposed to be acquired first. For developing relational knowledge, learners need to expose themselves to both affixes and affixed words, mainly through reading materials.

1.2 Affixed Words in English Textbooks in Japan

Although there have been some studies investigating the development of knowledge of affixes among Japanese learners of English (cf. Mochizuki & Aizawa, 2000; Schmitt & Meara, 1997), these studies do not focus on affixes and affixed words in textbooks as language input. There are also several studies analyzing vocabulary in English textbooks in Japan (cf. Chujo, 2004; Muraoka, 2010). However, these studies do not focus on affixes such as prefixes and suffixes. Only a few studies extensively investigate affixes used in English textbooks in Japan. Morita, Uchida, and Takahashi (2018) analyzed the textbook slated for use from 2016 to 2019 and found only a limited number of types and tokens of prefixes and suffixes. Although the textbooks appeared to contain a sufficient number of some frequent prefixes and suffixes, these were attached to certain bases, which prohibited the learners to frequently encounter a wide range of prefixed and suffixed words.

There are some limitations to their study. One of the major limitations is the selection of prefixes and suffixes. In their study, prefixes and suffixes were selected from the Affix Levels proposed by Bauer and Nation (1993), which comprise seven levels, as shown in Table 1. The authors determined these levels using various criteria such as frequency, productivity, and regularity to provide vocabulary teaching and learning guidelines. Morita et al. (2018) selected prefixes and suffixes from Level 3 to Level 6 because these are the only levels that include specific affixes. The remaining affixes fall under Level 7. It is obvious that textbooks use affixes other than those from

the Affix Levels, and some of them may have types and tokens enough to enhance morphological knowledge.

Another limitation was the treatment of allophones. *In-* has three other forms depending on the sound and spelling of the first letter of the base: *im, il, ir*. These allophones are categorized under *in-* in Morita et al. (2018). However, *-ible*, an allophone of *-able*, was not categorized under *-able*, and types and tokens of *-ible* were not reported in their study. It is because Bauer and Nation (1993) did not include the *-ible* form as an allophone of *-able* that this level of learner did not acquire this orthographic alternation. Dividing affixes into allophones gives us the precise frequency of each form, which helps us know how many times readers encounter each form in the textbook.

Table 1.

Affix Levels by Bauer and Nation (1993)

Level	Description
	Affixes
1	Each form is a different word.
2	Inflectional suffixes
3	The most frequent and regular derivational affixes -able, -er, -ish, -less, -ly [adv.], -ness, -th [ordinal number], -y [adj.], non-, un- [antonym] (all with restricted uses)
4	Frequent, orthographically regular affixes -al [adj.], -ation, -ess, -ful, -ism, -ist, -ity, -ize, -ment, -ous, in- (all with restricted uses)
5	Regular but infrequent affixes -age, -al [noun], -ally, -an, -ance, -ant, -ary [adj.], -atory, -dom, -eer, -en [adj.], -en [v], -ence, -ent, -ery, -ese, -esque, -ette, -hood, -i, -ian, -ite, -let, -ling, -ly [adj.], -most, -ory, -ship, -ward, -ways, -wise, ante-, anti-, arch-, bi-, circum-, counter-, en-, ex-, fore-, hyper-, inter-, mid-, mis-, neo-, post-, pro-, semi-, sub-, un- [reverse]
6	Frequent but irregular affixes -(ate+)able, -ee, -ic, -ify, -ion, -ist [adding to unexplained consonant], -ition, -ive, -th, -y[noun], pre-, re-
7	Classical roots and affixes

Note. Brackets [] after some affixes include the part-of-speech, meaning, or other information produced by attaching the affix.

(Adapted from Morita et al., 2018, p.335)

The current study aims to overcome the limitations of Morita et al. (2018). Specifically, by adding more prefixes and suffixes, as well as their allophones, a clearer picture emerges of affix usage and affixed words in textbooks.

1.3 Purpose of the study

This current study will expand the selection of affixes from Morita et al. (2018) by adding affixes from Level 7 or beyond. Additionally, allophones were added to provide more precise frequency information on affixes.

Therefore, the study aims to:

- 1) Show the frequency of prefixes and suffixes in the textbooks;
- 2) Show the frequency of prefixed words and suffixed words in the textbooks.

In doing so, this study will provide basic information on how and when to teach and learn morphologically complex words in Japanese junior high school English-language textbooks.

2. Method

2.1 The Corpus

The corpus we used in this study is the same as that of Morita et al. (2018). It consists of English textbooks approved by the Ministry of Education, Culture, and Technology. Six publishers made textbooks for three grades, comprising 18 textbooks in all, which were selected for use from 2016 to 2019 (see the titles and versions of the textbooks in the reference list). The corpus includes 222,599 words.

2.2 Extracting Affixes and Affixed Words from the Corpus

The methods to extract prefixes and suffixes as well as prefixed and suffixed words used in this study were identical to those used in Morita et al (2018). One of the methods used word lists from The British National Corpus (BNC) and Corpus of Contemporary American English (COCA), which was referred to as BNC/COCA word family lists and consisted of twenty-five 1,000-word family lists. The lists were compiled based on the Affix Levels, so that it is useful to use the lists to extract prefixed and suffixed words found in the Affix Levels.

The other method used another database called MorphoQuantics (Laws and Ryder, 2014a; 2014b), which contains 835 prefixes, suffixes, and combining forms based on Stein (2007). This database lists prefixes and suffixes followed by their derived forms. Merging this list with the list based on the BNC/COCA word family lists generated a list with prefixed and suffixed words under the categories of each prefix and suffix.

Because BNC/COCA word family lists include only prefixes and suffixes found in the Affix Levels, additional prefixes and suffixes were included from entries in Stein (2007). In the process of searching for additional affixes, allophones of affixes were added to the list. We followed the definition of Stein (2007) for allophones, where, for instance, *-able* is listed as *-able/ible*, but *-or* is listed as an individual entry rather than as an allophone of *-er*. Therefore, *-able* is subcategorized into *-able/ible*, but *-or* is listed as an entry separate from that of *-er* in our list. The newly added prefixes and suffixes as well as their derived forms were merged into the abovementioned list made by Morita et al. (2018).

However, some words were excluded from the lists. First, this study did not include bound bases with affixes. For example, *-ent* in *convenient* and *-ence* in *convenience* were excluded while *-ent* in *different* and *-ence* in *difference* were included. Following the Affix Levels, affixes attached to free bases and bound bases are two distinct forms because all the affixes attached to bound bases are in Level 7. This is because the bound bases are difficult for learners to recognize and their meanings are not transparent enough to infer. In terms of learnability, this study decided to exclude affixes attached to bound bases. Second, some pseudo-affixed words were excluded. For example, some words starting with *re-* were excluded based on the view that they tend to be misconstrued. As Bauer and Nation (1993) have indicated, “[w]ords that will be wrongly analyzed include *react, reagent, rebus, rebut, recap, recess, recite, recoil, recollect, recommend, record, recover, recur, redeem, redoubt, redress, etc.*” (p.279). The other words starting with *re-* were examined and excluded based on Marchand (1969).

After making the list, frequency information from the corpus was extracted and added to the list. In the process of extraction, some words were manually discarded. For example, *baker* as a proper noun, such as in *Ms. Baker* and *Baker Street*, was not counted.

3. Results and Discussion

3.1 Types and Tokens of Prefixes

Table 2 displays the distribution of prefix types and tokens throughout the textbooks. The odds calculated by tokens divided by types were added to show the average encounter with a prefix in the textbooks. It is natural to have more types and tokens in the textbooks for higher grades, which introduce more vocabulary. Most of the textbooks followed this tendency, but a few for lower grades contained more types and tokens. For instance, *Sunshine* for first graders contained 10 types and 50 tokens of prefixes, and *Total English* for second graders contained 18 types and 74 tokens. These two textbooks had the top two highest odds that a reader would encounter a prefix, 5.0 and 4.1 respectively. However, it is hardly the case that each prefix was used an equal number of times in each textbook; some prefixes were used more than others. The type and token of each prefix need to be investigated.

Table 2.

Distribution of Prefix Types and Tokens

	Types			Tokens			Tokens/Types		
	1 st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
Columbus	5	14	17	16	47	51	3.2	3.4	3.0
New Crown	15	21	30	29	53	65	1.9	2.5	2.2
New Horizon	6	19	28	11	44	86	1.8	2.3	3.1
One World	11	13	25	26	29	54	2.4	2.2	2.2
Sunshine	10	18	16	50	56	62	5.0	3.1	3.9
Total English	4	18	19	14	74	61	3.5	4.1	3.2

Table 3 shows prefixes found and not found in the textbooks for each of the Affix Levels (see Appendix A for examples of prefixed words). For example, *non-* has three types and ten tokens such as *non-native*, *non-white(s)*, *nonviolence*. Information from Level 3 to Level 6 was updated from Morita et al. (2018). All Level 3 and Level 4 prefixes are found in the corpus. For Level 5, six out of 19 prefixes were found. While many of the prefixes were found in the corpus, most of them had a limited number of types and tokens. It should be noted that many prefixes are used in specific sections of particular textbooks. For example, *non-* is used in the reading passage titled “English for International Communication” in *Total English* for second graders. There are also cases when prefixes are used in an instruction or task. *Pre-* is mainly used in a pre-listening task in *New Crown* for all three grades.

Table 3.

Prefixes in Textbooks

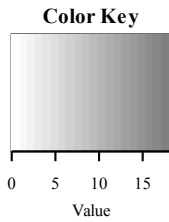
Levels	Prefixes (Types:Tokens) used in textbooks
	Prefixes not used in the textbooks
3	non- (3:10), un- (9:22)
4	in- (6:18) [in- (3:11), il- (1:2), im- (2:5), ir- (0:0)]
5	anti- (1:4), en- (3:26), fore- (1:3), inter- (4:93), mid- (3:13), semi-(1:1) ante-, arch-, bi-, circum-, counter-, ex-, hyper-, mis-, neo-, post-, pro-, sub-, un-
6	re- (3:31), pre- (2: 21)
7 or beyond	a- (7:1506), co- (1:2), dis- (7:164), grand- (9: 140), kilo- (2:24), micro- (1:3), out- (3:187), over- (1:22), super- (1:28), tri- (1:3), under- (2:21), uni- (1:172)

(Levels 3 to 6 are adapted from Morita et al., 2018)

One of the updates we made to the information is that allophones of *un-* are listed along with types and tokens of each form. Dividing prefixes into their allophones indicated that the textbooks provided readers with few opportunities for encountering each allophone. It was also revealed that prefixed words with *in-* can be seen only 11 times throughout the textbooks, which is less than reported in the previous study.

More significantly, we added the last row labelled “7 or beyond.” Most of the items listed in this row were found with very few types and tokens. It is obvious that encountering prefixes with only one type, such as *micro-*, *over-*, *super-*, *tri-*, and *uni-*, used with only one base, does not help the reader expand morphological knowledge (though most of those prefixes are easily recognizable as katakana words). Some other prefixes with multiple types were attached to certain bases. For example, *a-* was attached to *round* to make *around*, which had 1,395 tokens. Further, *out-* was almost exclusively attached to *side* to make *outside*, which had 184 tokens. These prefixes are also unlikely to help expand morphological knowledge when encountered in the context of the textbooks because they are included in a limited set of variants of prefixed words. Based on these observations, we suggest that textbooks alone may not suffice in helping readers increase their knowledge of prefixes.

Given that instruction in prefixes may need to occur implicitly and/or explicitly by using other materials and/or instruction, we also speculate which prefix is best suited to help introduce readers to prefix knowledge. Some prefixes, particularly ones newly reported in this study, may be candidates because they have a certain number of types and tokens. For example, *grand-* has 9 types and 140 tokens. Figure 1 indicates the frequency of the words prefixed with *grand-* in each textbook. Although their frequency varied in each textbook, the readers would encounter *grandparents*, *grandmother*, and *grandfather* across all grades at least a few times. Considering that the bases, *parent(s)*, *mother*, *father*, and so on, are nouns that appear with a high frequency in junior high school textbooks, *grand-* may be a good candidate for introducing learners to the concept of a prefix.



3	3	4	0	0	0	0	0	0	0	0	COLUMBUS_1
2	1	6	2	2	0	0	0	0	0	0	COLUMBUS_2
0	1	0	0	0	0	0	0	0	0	0	COLUMBUS_3
0	5	3	0	0	0	0	0	0	0	0	NEW CROWN_1
0	0	0	0	0	0	0	0	0	0	0	NEW CROWN_2
0	1	0	0	0	3	0	0	0	0	0	NEW CROWN_3
0	1	1	0	0	0	0	0	0	0	0	NEW HORIZON_1
1	4	1	0	0	0	0	0	0	0	0	NEW HORIZON_2
0	0	2	0	0	0	0	0	0	0	0	NEW HORIZON_3
2	6	4	2	1	0	1	1	1	0	0	ONE WORLD_1
2	0	1	0	1	0	0	0	0	1	0	ONE WORLD_2
0	2	3	1	1	0	0	0	0	0	0	ONE WORLD_3
0	1	0	18	3	0	0	0	0	0	0	SUNSHINE_1
2	3	8	0	0	0	0	0	1	0	0	SUNSHINE_2
0	0	2	0	0	0	0	0	0	0	0	SUNSHINE_3
0	0	0	0	0	0	0	0	0	0	0	TOTAL ENGLISH_1
0	7	4	0	0	0	0	0	0	2	2	TOTAL ENGLISH_2
0	1	2	0	0	0	0	0	0	0	0	TOTAL ENGLISH_3

grandparents
grandmother
grandfather
grandma
grandpa
grandchildren
grandad
grandfathers
grandparent
granddaughter
grandson

Figure 1. Frequency of words prefixed with *grand-*

3.2 Types and Tokens of Suffixes

Table 4 shows the distribution of types, tokens, and the odds of encounter with suffixes in all the textbooks. Compared with the distribution of prefixes shown in Table 3, many more types and tokens of suffixes were used. Even for the first graders, at least 45 types and 158 tokens were used—the reader of the textbook encounters a suffix 3.5 times on average (see *Columbus* in Table 4). It is interesting that a certain textbook, namely *New Crown*, used the most types and tokens of suffixes for all grades, but turns out to yield the lowest odds of encounter. Overall, the range of encounter is between 2.5 and 4.5.

Table 4.

Distribution of Suffix Types and Tokens

	Types			Tokens			Tokens/Types		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
Columbus	45	82	136	158	282	382	3.5	3.4	2.8
New Crown	82	150	234	204	391	633	2.5	2.6	2.7
New Horizon	66	142	223	279	439	632	4.2	3.1	2.8
One World	53	78	150	201	274	422	3.8	3.5	2.8
Sunshine	61	135	163	272	471	462	4.5	3.5	2.8
Total English	55	121	99	167	455	321	3.0	3.8	3.2

Table 5 shows suffixes found and not found in the textbooks for each of the Affix Levels (see Appendix B for examples of suffixed words). In addition to updating information for prefixes in Table 3, information in Levels 3 to 6 is updated in Table 5 based on Morita et al. (2018). Throughout the levels, a majority of suffixes are used in the textbooks. All Level 3 and 4 suffixes are found in the corpus. At Level 5, 19 suffixes out of 31 are found. Further, almost all the Level 6 suffixes are found except for *-(ate+)-able* and *-ist*.

An allophone of *-able* was added, so that *-able* was divided into *-able* and *-ible*. This subcategorization reduces the number of types and tokens of *-able*. It is interesting that tokens of *-ible* occur slightly more frequently than those of *-able*, which again revealed that the reader will see the suffixed words with *-able* less than reported in the previous study. Additionally, *-less*, *-able/-ible* are placed in Level 3, which is expected to comprise a group of useful affixes for learning purposes; however, the types and tokens of *-able/-ible* and *-less* were limited.

Table 5.

Suffixes in Textbooks

Level	Suffixes (Types:Tokens) used in textbooks
	Suffixes not used in the textbooks
3	<i>-able</i> (10:40) [<i>-able</i> (6:13), <i>-ible</i> (4:27)], <i>-er</i> (95:1085), <i>-ish</i> (6:61), <i>-less</i> (4:11), <i>-ly</i> (63:716), <i>-ness</i> (15:47), <i>-y</i> (36:484)
4	<i>-al</i> (31:284), <i>-ation</i> (17:103), <i>-ess</i> (2:10), <i>-ful</i> (17:427), <i>-ism</i> (2:6), <i>-ist</i> (15:174), <i>-ity</i> (17:262), <i>-ize</i> (3:7), <i>-ment</i> (14:90), <i>-ous</i> (8:196)
5	<i>-age</i> (2:6), <i>-al</i> (4:9), <i>-an</i> (16:144), <i>-ance</i> (3:16), <i>-ant</i> (4:19), <i>-ary</i> (1:24), <i>-dom</i> (2:18), <i>-en</i> (4:6), <i>-ence</i> (4:32), <i>-ent</i> (1:91), <i>-ery</i> (7:46), <i>-ese</i> (4:423), <i>-hood</i> (2:5), <i>-i</i> (4:6), <i>-ian</i> (7:76), <i>-ly</i> (7:86),

	-ship (5:34), -ward (1:1), -wise (1:1)
	-ally, -atory, -eer, -en (adj), -esque, -ette, -ite, -let, -ling, -most, -ory, -ways
6	-ee (3:5), -ic (14:152), -ify (1:2), -ion (51:379), -ition (3:36), -ive (12:273), -th (9:75), -y (3:20)
	-ist, -(ate+)able
7 or beyond	-arium (1:19), -ary ¹ (4:7), ate (1:2), -burger (1:7), -cy (1:2), -ency (2:9), -ern (5:39), - ice (3:17), -icle (1:6), -ics (4:19), -ier (1:12), -or (16:96), -ty (1:5), -ure (4:14), -y ² (3:20)

¹-ary in Level 5 is attached to nouns to make adjectives, and -ary in Level 7 or beyond is attached to nouns to make nouns (e.g., *missionary*). ²-y on Level 3 is attached to nouns to make adjectives, and -y on Level 7 or beyond is attached to nouns to make nouns (e.g., *daddy*).

(Level 3 to 6 are adapted from Morita et al., 2018)

Some suffixes in Level 3 other than *-able/-ible* and *-less* have many types and tokens, especially *-er*, *-ly*, and *-y*. However, these suffixes attach only to certain bases. For instance, *-ly* attaches to *real* (see Figure 2). This predominant combination of a base and suffix may decrease

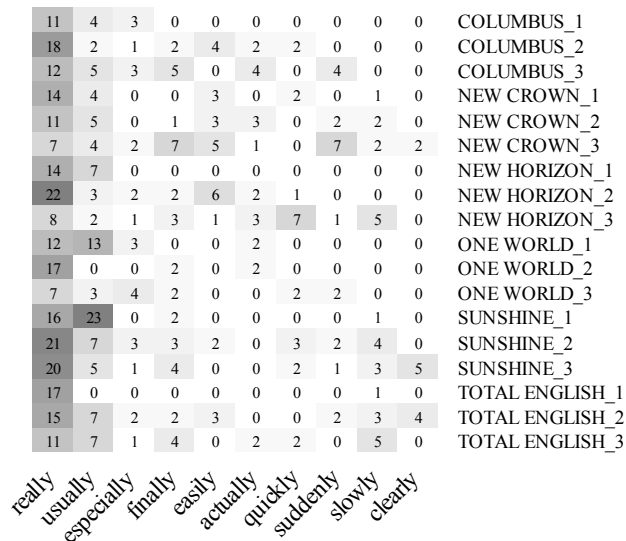
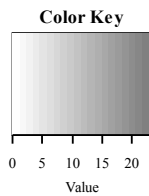


Figure 2. Top ten words most frequently suffixed with *-ly*

readers' opportunities to encounter other variants with *-ly*. Moreover, the base *real* appeared 14 times, and other derived forms with *real*, namely, *realize* and *reality* appeared 12 times and 4 times respectively throughout the textbooks. Readers thus may not have the chance to encounter the base and relate the base with the derived forms.

Fifteen new suffixes were added to Level 7 or beyond in Table 5. Most of them had a few types and tokens. The only exception was *-or* with 16 types and 96 tokens. Figure 3 shows the top ten most frequently prefixed words ending in *-or* in each textbook. It is clear that the three most frequent words ending in *-or*, namely, *actor*, *visitor*, and *director*, were mostly used in *New Crown* for second and third graders. Interestingly, most textbooks used suffixed words with *-or* mostly for second graders and sometimes third graders, but not for first graders. On the contrary, as Morita et al. (2018) indicated, words suffixed with *-er* were used for all the grades. This may reflect differences in frequency and/or productivity in English between *-or* and *-er*, which led Bauer and Nation (1993) to place the two suffixes in different levels.

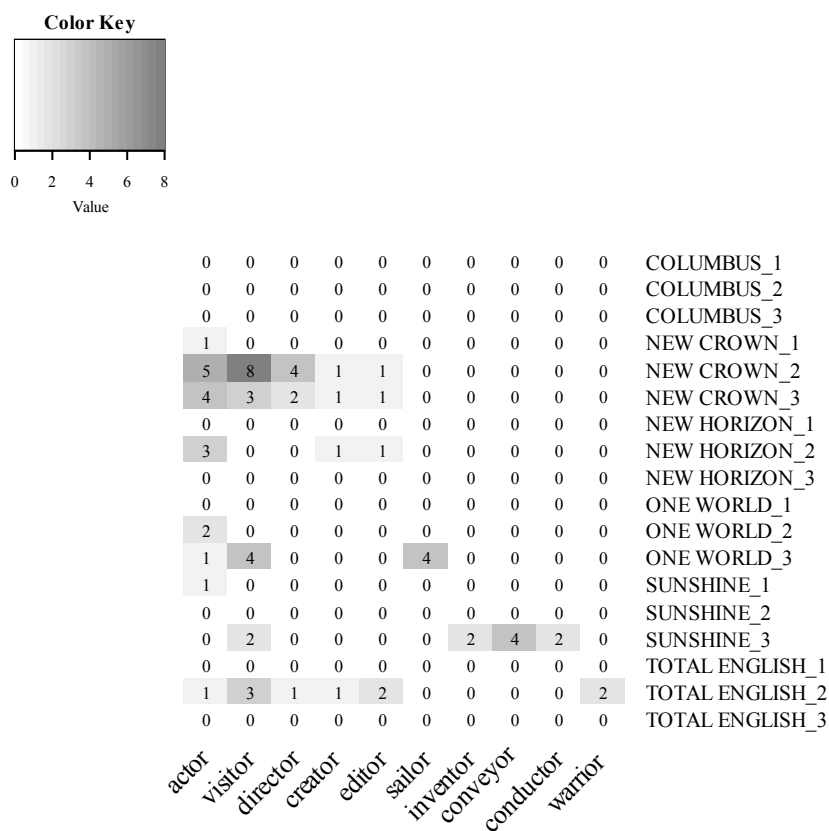


Figure 3. Top ten words most frequently suffixed with *-or*

Compared with prefixes, suffixes exhibited substantially more types and tokens in the textbooks. Though suffixes with various types and many tokens (e.g., *-er* and *-ly*) are attached to certain bases, which may prohibit expansion of the reader's suffix knowledge, they can be useful tools for teaching suffixes and are relatively easy to enhance using other materials such as graded readers and supplemental reading. Using these suffixes in explicit instructions is also effective in helping learners increase their morphological knowledge (cf. Bowers, Kirby, & Deacon, 2010).

4. Conclusion

We investigated morphologically complex words in Japanese junior high school English textbooks. Based on Morita et al. (2018), we added more types of prefixes and suffixes. The results indicated that in general only a limited number of types and tokens for prefixes and suffixes can be found in the textbooks despite the addition of more prefixes and suffixes beyond those included in Bauer and Nations (1993). Especially when allophones are considered, the types and tokens of prefixes and suffixes reduce further in number. Suffixes with various types and tokens tend to be attached to certain bases, which leads the reader to encounter certain prefixed and suffixed words many times, while other types only a few times. Therefore, the textbooks alone do not provide sufficient input for learners to autonomously learn prefixes and suffixes.

Our findings suggest some implications for L2 affix teaching and learning. It is expected that English teachers do not *teach* English textbooks, but they *use* the textbooks to teach English. In this sense, the question is how the textbook can be best utilized so that learners can acquire morphological knowledge. The findings of this study can be used to decide which prefixes and suffixes should be taught explicitly. Particularly, given that types and tokens of prefixes are limited in number, it may be useful to use *grand-* to teach the basic concept of prefixes, that they are meaningful components that attach to bases to change their meanings. More importantly, the information in this study, combined with that of Bauer and Nation (1993) offers clues as to which particular prefixes and suffixes need more attention outside of textbooks. For example, some suffixes in Level 3, such as *-able/-ible* and *-less*, have fewer types and tokens than other suffixes although these suffixes are supposed to be useful. These suffixes with fewer types and tokens may need to be taught.

Future studies should examine textbooks used at later stages, such as in senior high school and university, as well as revised versions of junior high school textbooks. These studies might reveal the development of prefix and suffix knowledge and how textbooks affect that development. These studies can provide clearer pictures of which prefixes and suffixes should be presented, at which stages they should be introduced, and how they should be taught.

Acknowledgement

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Appendix A: Prefixes and Examples of Prefixed Word

Levels	Prefixes (<i>examples</i>) used in textbooks
3	non- (<i>non-native</i>), un- (<i>unfair</i>)
4	in- (<i>incredible</i>), il- (<i>illiteracy</i>), im- (<i>impossible</i>)
5	anti- (<i>anti-Jewish</i>), en- (<i>encourage</i>), fore- (<i>forecast</i>), inter- (<i>international</i>), mid- (<i>midnight</i>), semi- (<i>semifinal</i>)
6	re- (<i>reuse</i>), pre- (<i>pre-listening</i>)
7 or beyond	a- (<i>around</i>), co- (<i>cooperation</i>), dis- (<i>disable</i>), grand- (<i>grandparents</i>), kilo- (<i>kilometer</i>), micro- (<i>microwave</i>), out- (<i>outside</i>), over- (<i>overseas</i>), super- (<i>supermarket</i>), tri- (<i>triangle</i>), under- (<i>underground</i>), uni- (<i>uniform</i>)

Appendix B: Suffixes and Examples of Suffixed Word

Level	Suffixes (<i>examples</i>) used in textbooks
3	-able (<i>unbelievable</i>), -ible (<i>responsible</i>), -er (<i>teacher</i>), -ish (<i>selfish</i>), -less (<i>careless</i>), -ly (<i>really</i>), -ness (<i>brightness</i>), -y (<i>cloudy</i>)
4	-al (<i>national</i>), -ation (<i>information</i>), -ess (<i>actress</i>), -ful (<i>beautiful</i>), -ism (<i>terrorism</i>), -ist (<i>scientist</i>), -ity (<i>activity</i>), -ize (<i>realize</i>), -ment (<i>amusement</i>), -ous (<i>famous</i>)
5	-age (<i>package</i>), -al (<i>arrival</i>), -an (<i>American</i>), -ance (<i>performance</i>), -ant (<i>attendant</i>), -ary (<i>ordinary</i>), -dom (<i>kingdom</i>), -en (<i>broaden</i>), -ence (<i>difference</i>), -ent (<i>different</i>), -ery (<i>nursery</i>), -ese (<i>Japanese</i>), -hood (<i>childhood</i>), -i (<i>Israeli</i>), -ian (<i>Brazilian</i>), -ly (<i>friendly</i>), -ship (<i>friendship</i>), -ward (<i>northward</i>), -wise (<i>likewise</i>)
6	-ee (<i>employee</i>), -ic (<i>basic</i>), -ify (<i>terrify</i>), -ion (<i>expression</i>), -ition (<i>addition</i>), -ive (<i>active</i>), -th (<i>health</i>), -y (<i>difficulty</i>)
7 or beyond	-arium (<i>aquarium</i>), -ary (<i>missionary</i>), -ate (<i>passionate</i>), -burger (<i>cheeseburger</i>), -cy (<i>illiteracy</i>), -ency (<i>emergency</i>), -ern (<i>western</i>), -ice (<i>service</i>), -icle (<i>article</i>), -ics (<i>economics</i>), -ier (<i>lawyer</i>), -or (<i>visitor</i>), -ty (<i>safety</i>), -ure (<i>creature</i>), -y (<i>daddy</i>)

