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The Progressive Distribution of Sentences Containing Relative Clauses in Japanese Textbooks of English

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THE PROGRESSIVE DISTRIBUTION OF SENTENCES CONTAINING RELATIVE CLAUSES IN JAPANESE TEXTBOOKS OF ENGLISH

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APPROVAL OF THESIS

As chair representing the other members of this thesis committee, I affirm that the thesis, "**The Progressive Distribution of Sentences Containing Relative Clauses in Japanese Textbooks of English**," meets the high academic standards for original scholarship and creative work established by the English MA TESOL and the College of Liberal Arts. This work also conforms to the editorial standards of our discipline and the Graduate College of Marshall University. With my signature, I approve the manuscript for publication.

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ABSTRACT

Relative clauses have been researched and found to be one of the more difficult English grammar items for people who speak English as a Second Language (henceforth, ESL) and people who use English as a Foreign Language (henceforth, EFL). In particular, objective relative clauses are one of the most challenging items for English learners. (Gibson, 1998; Gordon, Hendrick, & Johnson, 2001; Mellow, 2006; Hawkins, 1994; King & Just, 1991; Otsuka & Aburai, 2003). By examining the frequency of subjective and objective relative clauses in six English textbooks which are being used in middle schools and high schools in Japan, the efficacy of the textbooks in exposing learners to these grammar points was clarified: subject relative clauses appear in 3 sentences out of 659 (0.4%) in middle schoolers' textbooks and in 102 sentences out of 1835 (5.5%) in high schoolers' textbooks. Object relative clauses appear in three sentences out of 659 (0.4%) in middle schoolers' textbooks and in 29 sentences out of 1835 (1.5%) in high schoolers' textbooks. These percentages showed the lack of example sentences in those textbooks, especially the frequency of object relative clauses in both types of schools, even if learners' comprehension of object relatives has been marked lower than other grammar (Otsuka & Aburai, 2003; Hidai, Matsumoto, Takahashi, Suzuki, Oda, Enomoto & Tanji, 2012). Based on these data, it was discovered that the textbooks' publishing company should add more subject and object relative clause sentences in order to provide enough examples to the learners. Analyzing English textbooks which especially focus on certain grammatical views is still an on-going research topic. Therefore, this study attempts to give opportunities to discuss the grammar usage in the textbooks, and I hope it will be helpful for English teachers and educational organizations for assessing the role of the textbooks.

CHAPTER 1

LITERATURE RIVIEW

General Goal of This Paper

In this thesis, two series of English as a Foreign Language textbooks, one series for middle school students comprising three textbooks, and the other for high school students comprising three textbooks, are analyzed. The goal of this paper is examining the frequency of subjective and objective relative clauses and lexical density in the six English textbooks. Therefore, this analysis will accomplish i) examining both grammatical and meaning differences in relative clause types, and why they are difficult for Japanese learners based on previous research, ii) showing how often relative clauses and their related grammar points appear in the six selected textbooks, iii) examining if the frequency of the examples are appropriate, and iv) discussing how the textbooks are organized in relation to the progression of lexical density of the example sentences.

A large number of textbook analyses have been conducted by different authors. However, analyzing Japanese EFL textbooks that focuses on a particular grammatical construction is still an ongoing research topic, and the result of this study may have the potential to be used in assessing the progression of EFL linguistic textbook features.

Role of English in Japan as a Language for International Communication

Many students in Japan learn English as a foreign language at school. Learning English starts in the 5th grade in public elementary schools. The decision for the beginning grade was decided in 2008 by the Ministry of Education, Culture, Sports, Science and Technology (henceforth, MEXT). Although EFL is not required at the level of college, most students still continue to study it in college as well. Thus, a large number of Japanese students study EFL for

many years before they complete their college degree. The driving force behind this emphasis on the study of English is the role of English as a language of international communication, which makes it almost impossible to succeed if college graduates are fluent only in their first language, Japanese. For example, in business contexts, the Japanese people frequently have much better opportunities to start a new business with people from other countries, and the use of a mutually understood language is unavoidable. The Japanese no longer have the luxury of remaining isolated in Japan. It is necessary to foster human resources who are willing to play an important role in the international community.

General Issues

Even though students go through five years of mandatory English education and additional learning in high school and college, Japan is ranked 27th out of 35 Asian countries on the TOEFL iBT test (ETS, 2017, p. 14). This result indicates that there are a number of issues regarding EFL education.

Hidai et al. (2012) reports that Japanese high school students who graduate from high school and start taking college English classes frequently face a situation in which they are prevented from getting more advanced language acquisition because of their lack of readiness for taking college-level classes in English. In order to investigate the reason why they are not ready for EFL education in college, these researchers conducted a survey among English teachers in middle schools and high schools asking what parts of English grammar are most challenging for their learners. In the study, the English teachers were asked about their opinions of their students' level of understanding of 66 grammatical items chosen from the government curriculum guideline. The method of scoring their understanding, as shown in Table 1, included these choices: "Easiest for students to understand (four points)", "Comparatively easy for

students to understand (three points)", "Comparatively difficult for students to understand (two points)", and "Difficult for students to understand (one point)". The participants were asked to mark the closest opinion in each grammatical item by their experiences as English teachers in Japan. In this survey, the higher the total point, the less their students tend not to have problems on comprehension.

Table 1. The Survey's Four Choices (Hidai et al., 2012, p. 33)

Choices	Point(s)
Easiest for students to understand	four points
Comparatively easy for students to understand	three points
Comparatively difficult for students to understand	two points
Difficult for students to understand	one point

Hidai et al. (2012) summarized the four choices of opinions, and focused their discussion on the lowest two pointed choices, "Comparatively difficult for students to understand (two points)" and "Difficult for students to understand (one point)". Tables 2 and 3 show that relative clauses and their related grammar items scored comparatively lower than any other ones. 'Restrictive relative clause' is notable as one of the confusing grammar points for both middle and high school students.

Table 2. Grammar Items Marked as More Difficult (Middle School) (Hidai et al., 2012, p. 34)

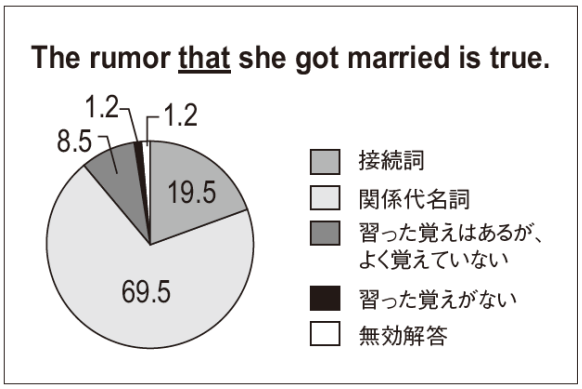
Grammar items	Average mark
Question sentences starting with *wh-* and *how* (e.g. *what*, *who*, *how* etc.)	2.4
Sentence form [subject + verb + that]	2.2
Restrictive relative clause: subjective clause (e.g. *that, which, who*) and objective clause (e.g. *that, which*)	**2.1**

Table 3. Grammar Items Marked as More Difficult (High School) (Hidai et al., 2012, p. 34)

Grammar items	Average mark
Modal verb [modal verb + passive]	2.2
Infinitive [causative verbs + object + to (verb)]	2.2
Unrestrictive relative clause	**2.2**
Adverbial relative clause	**2.2**
Restrictive relative clause: [*what* embedded clauses as subject/object/adverb]	**2.0**
Modal verb [modal verb + have + past particle]	1.9

Chujo, Yokota, Hasegawa, and Nishigaki (2012) also conducted an English grammar test. Their test was answered by university students who were taking their lectures. The test, which included 38 out of 103 items taught in middle schools and high schools, was designed to find out what grammar items are understood by what level of learners. According to their findings, 71% of the participants have not reached the criteria established by MEXT. In their experiment, Chujo et al. discovered that relative clauses are one of the most difficult English grammar items among others, especially at the level of high school education (Appendix B: Chujo et al., 2012). The comprehension of relative clauses in middle schools shows 77% of correctness on average. However, despite the fact that this particular grammar point is taught both at middle as well as at high schools, the percentage decreases rapidly in high schools to 39%. Moreover, understanding of relative clause structures are generally lower than other grammar items. For example, in Figure 1, the participants were asked to name the part of speech of the underlined word (***that***) in the following sentence: "*The rumor* ***that*** *she got married is true".* The correct answer is '*接続詞* (conjunction)'. However, only 19.5% of correct answers were found in the question and 69.5% of students answered that the answer is '*関係代名詞* (relative clause)'; Hidai et al., (2012) expected that the students were even not sure of the structure of the relative clause.

Figure 1. Results from Part 1 from the Test (Hidai et al., 2012)



Relative Clause in Languages

Because of the clausal meaning connecting function of relative clauses within noun groups, many languages make use of structural reconfigurations similar to the English relative clauses, including Japanese. (Lin & Bever, 2006, p. 254). However, as each language has different grammar structures and rules, relative clauses in each language also vary in their own ways. For example, when comparing two languages such as Japanese and English, elements called *fillers* (e.g. *who* and *which*) appear in English embedded clauses but are not found in Japanese relative clauses; the Japanese students who study English at schools need a quite long time to acquire English relative clauses, and vice versa.

Relative clauses are divided into two distinct types, each of which is differentiated by a pause in spoken English, and by the use of the comma in written English (Fabb, 1990, p. 57). These two types of relative clauses are exemplified below:

(1) a. The swans, which are white, are in that part of the lake.

b. The swans which are white are in that part of the lake.

Example (1a) is categorized as a non-restrictive relative clause (also called descriptive, non-defining), where the clause describes the head noun. It is an added piece of information regarding the head noun, *the swans*. Example (1b) is a restrictive relative clause that refers to more or less the intrinsic nature of the head noun. For example, *the swans* in the second example are being distinguished from other non-white swans which may also be part of the text in which the clause is used. Despite the same words used in the two clauses, the perceived meaning of the two sentences are different.

Moreover, restrictive relative clauses can be divided into three categories: subjective, objective, and possessive relative clauses. This thesis focuses on subjective and objective relative clauses, because a large number of previous research has been done to compare the differences between these two types.

(2) a. The reporter who harshly attacked the senator admitted the error (subjective).

b. The reporter who the senator harshly attacked admitted the error (objective).

(King & Kutas, 1995, p. 379)

King and Kutas (1995, p. 379) explain that both sentences (2a) and (2b) contain a relative clause modifying the subject of the sentence, but differ in the role that the main subject NP ("*the reporter*") plays in the relative clause: in (2a), the main-clause subject is also the subject (and agent) of the verb in the relative clause, while in (2b), it is the object (and patient). For this reason, sentences such as (2a) are known as subject-subject relative (SS) sentences, while those such as (2b) are known as subject-object relative (SO) sentences". Thus, in example (2), even if these sentences share the same words, the word order and meanings are different from each other and they may cause confusion regarding grammar comprehension for English learners.

Difficulties with Relative Clauses

Relative clauses have been regarded as one of the most difficult English structural items for EFL and ESL learners, which has been reported by many researchers (Gibson, 1998; Gordon et al., 2001; Mellow, 2006; Hawkins, 1994; King & Just, 1991; Otsuka & Aburai, 2003). Some of the reasons for this difficulty lie in the following features:

I. Word Order Difference
II. Working Memory
III. Diverse Functions of Relative Clause

I. Word Order Difference

Generally, the word order of Japanese and English differs from each other; subject and object relative clauses in the two languages do not share the same features.

> The explanation for this difference between processing subject relative clauses and object relative clauses is often tied to the notion of filler-gap dependencies. (…) the displaced wh-element *who* is called a "*filler*", and the "*gap*" is the canonical position in the sentence where the subject (in a subject relative clause) or the object (in an object relative clause) would appear in a simple declarative sentence.
>
> (Ueno & Garnsey, 2007, p. 5).

In subject relative clauses in English (Table (4a)), the relative clause verb (*attacked*) is mentioned immediately after the antecedent (*the reporter*). The '*gap*' between the filler and the verb, *attached*, is close. On the other hand, in object relative clauses in English (Table (4b)), the '*gap*' is located after the relative clause verb, making it look as if the primary object *the reporter* was missing in the clause.

Table 4. Subject and Object Relative Clauses in English (Ueno & Garnsey, 2007, p. 4)

a. Subject relative (SR)

head noun ←relative clause (RC)→

↓

the reporter *[who __ attacked the senator]*

FILLER GAP

b. Object relative (OR)

the reporter *[who the senator attacked __]*

FILLER GAP

Table 5. Subject and Object Relative Clauses in Japanese (Ueno & Garnsey, 2007, p. 6)

a. Subject relative (SR) in Japanese

←relative clause (RC)→ head noun

↓

[__	議員を	非難した]	記者
[__	giin-o	hinanshita]	kisha
[__	senator-ACC(USATIVE)	attacked]	reporter
GAP			FILLER

'the reporter [(who) __ attacked the senator]'

b. Object relative (OR) in Japanese

[議員が	__	非難した]	記者
[giin-ga		hinanshita]	kisha
[senator-NOM(INATIVE)	__	attacked]	reporter
	GAP		FILLER

'the reporter [(who) the senator attacked __]'

As Tables (4a) and (4b) show, in the English example sentences, the head nouns (*reporter*) are found at the beginning of the sentences in both subject and object relative clauses. In contrast, in the Japanese example sentences in Table 5, the head noun (*reporter*) comes at the end of sentences in both examples. These sentences indicate that structurally Japanese relative clauses are composed differently from English ones. The distance between the noun and '*gap*' is longer than the sentences in Table 4.

There is also another difference between the two languages: sentences in Japanese do not have '*fillers*', such as *who* and *that* (see Table 5). Thus, English relative clauses have a different word order from Japanese ones, which creates word order and meaning problems in understanding English relative clauses for Japanese students.

II. Working Memory

Gibson (1998) reported that according to the Syntactic Prediction Locality Theory (SPLT), relative clauses are more complex depending on how long a listener must maintain a referent in their working memory.

> This theory contains two major components: (1) a memory cost component which dictates what quantity of computational resources are required to store a partial input sentence and (2) an integration cost component which dictates what quantity of computational resources need to be spent on integrating new words into the structures built thus far. The important idea in both of these components of the theory is *locality*: syntactic predictions held in memory over longer distances are more expensive (hence the name *syntactic prediction locality theory*), and longer distance head-dependent integrations are more expensive (Gibson, 1998, p. 8).

This theory explains that sentences which contain a greater distance between reference items will be more complex to process. For example, sentences which include a relative clause lead to ambiguity of comprehension and misunderstanding.

(3) The bartender told the detective that the suspect left the country *yesterday*.
(Gibson, 1998, p. 12).

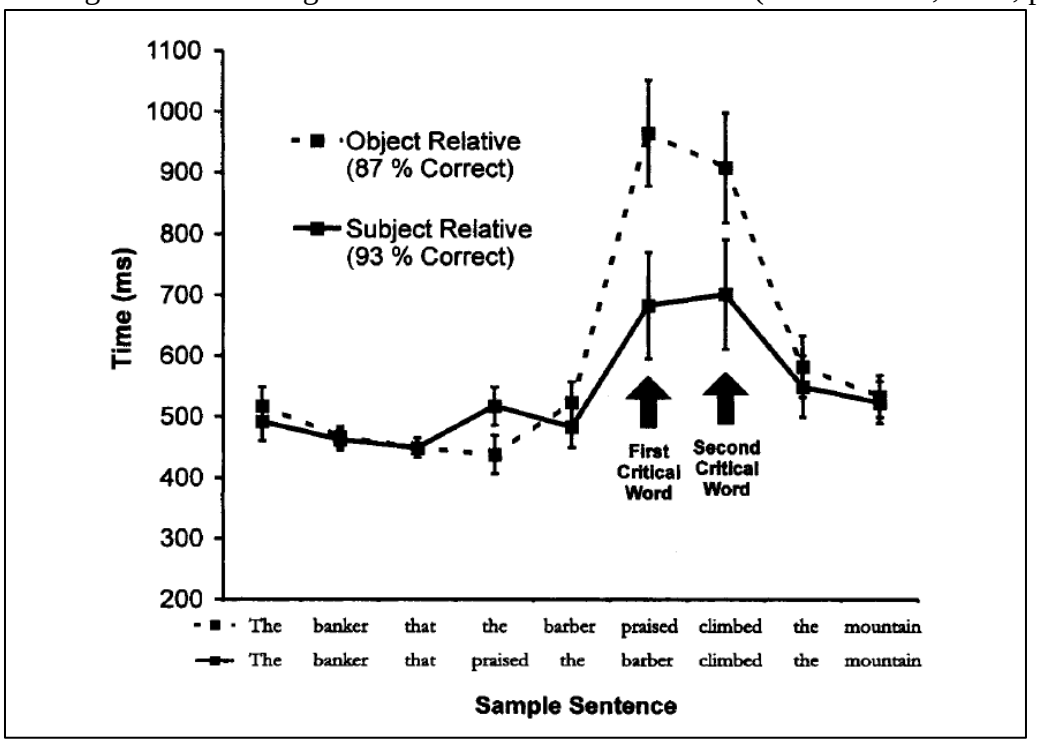
In Example (3), a circumstantial adjunct, "*yesterday*", is placed at the end of the cause in an ambiguous order. It is hard to tell if the "*yesterday*" modifies either the main verb (*told*) or the embedded clausal verb *(left*).

Gordon, Hendrick, and Johnson (2001) also present language processing time differences in and possible problems with word recognition between subject relative clauses and object relative clauses. In their experiment, forty-four native English participants were asked to read 24 sentences including "two NPs (noun phrases) in each sentence, which were arguments of the verbs in the main and embedded clauses, were always definite descriptions relating to human roles (e.g., *doctor, lawyer, barber*)" (Gordon et al., 2001, p. 2). Figure 2 shows a comparison of reading times with a sentence including subject relative clauses and a sentence including object relative clauses. The solid line describes the reading time for subject relative clauses, and the dotted line describes the reading time for object relative clauses. The x-axis shows an example sentence below which includes an object relative clause. The bottom sentence on the x-axis is an example including a subject relative clause. The reading time is indicated from 200 to 1100 milliseconds on the y-axis. The two sentences on the x-axis were separated into individual words such as *the, banker, that,* etc.

The results from the experiment prove that the intricacy of object relative clauses is higher than that of subject relative clauses. First, reading the object relative sentences reaches almost 1000 milliseconds at 'praised' on the x-axis, and it also shows that most of the words in the object relative sentence took longer to process than the subject relative ones. Moreover, subject relative clauses had 93% of accuracy of interpretation by the participants, yet 87% of accuracy in object relative clauses.

Figure 2. Reading Time on Subject and Object Relative Clauses

The mean reading time by word (with 95% confidence intervals) is shown for sentence with subject-extracted and object-extracted relative clauses. The sample sentences show the alignment of reading times with words in the sentence (Gordon et al., 2001, p. 3).



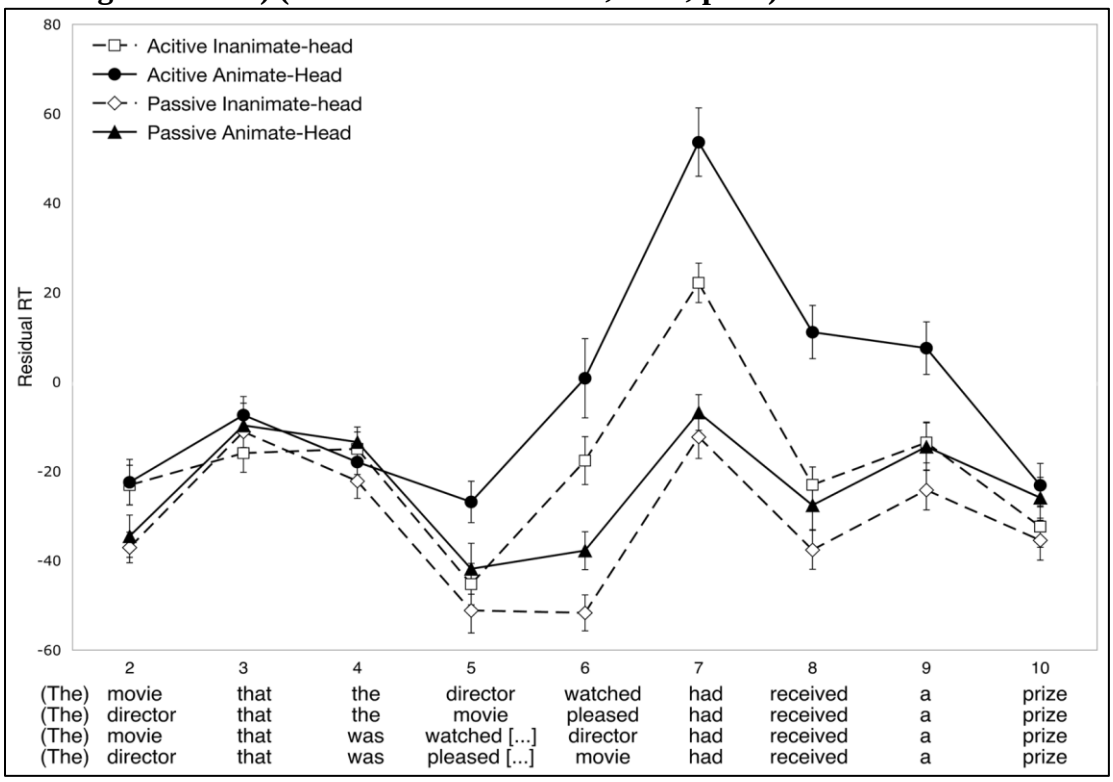
III. Diverse Functions of Relative Clauses

Gennari and MacDonald (2008) determined the reading times of subject relative clauses and object relative clauses by comparing between different animacy configurations in relative clauses. The researchers also examined semantic indeterminacy and found that this phenomenon works as a major role in comprehending complex structures such as object relative clauses. Animacy here indicates whether a head noun is organic or non-organic; animate or inanimate. The example sentences are presented to show the differences of animacy. In Examples (4a) and (4b), the head noun is ‘the director’. On the other hand, ‘the movie’ is the head noun in Examples (4c) and (4d).

(4) a. The director that watched the movie received a prize. (Subj. Rel. – Animate head)
b. The director that the movie pleased received a prize. (Obj. Rel. – Animate head)
c. The movie that pleased the director received a prize. (Subj. Rel. – Inanimate head)
d. The movie that the director watched received a prize. (Obj. Rel. – Inanimate head)

Their research by Gennari and MacDonald (2008) compared the reading times among sentences which included relative clauses with one of the following components: active inanimate-head relative clauses (e.g. *The director that the movie pleased had received a prize.*), active animate-head relative clauses (e.g. *The movie that the director watched had received a prize.*), passive-inanimate-head relative clauses (e.g. *The director that was pleased (…) movie had received a prize.*), and passive animate-head relative clauses (e.g. *The movie that was watched (…) director had received a prize.*). Figure 3 shows the results from the experiment.

Figure 3. Residual Reading Times per Word Position in Comprehension Study 2 (in the original article) (Gennari & MacDonald, 2008, p. 28)



Gennari and Mac Donald (2008) concluded the result from the reading time research that "overall, active relatives were more difficult than passives, and animate-head object relatives were more difficult than inanimate-head object relatives. Planned contrasts indicated that active object relatives with animate heads were more difficult than any other condition, particularly, object relatives with inanimate heads in both item and participant analyses" (p. 12). Thus, the difficulty in understanding object relative clauses is increased by adding other factors such as animacy.

As we saw earlier, English teachers in middle schools and high schools in Japan show some concerns toward their students' English proficiency level (Hidai et al., 2012). Also, Chujo et al. (2012), who conducted the English grammar comprehension survey and test, found that Japanese university students showed a lower level of understanding of relative clauses than most of other English grammar points. Thus, the difficulty of relative clauses including object relative clauses cause a lower comprehension rate than sentences that include subjective relative clauses. Factors such as word order differences, working memory, and the various other functions of relative clauses also influence the difficulty of acquiring these grammar points.

Clause Complexity

I. English Textbooks in Japan.

MEXT (*Monbusho*) requires textbook publishers to pass their inspection in order to be allowed to publish and use their textbooks in Japan. Matsuda (2002) explains that textbooks which pass the inspection are called *Kentei-kyokasho* (*Monbusho*-approved textbooks). In middle and high school English classes, textbooks are one of the most frequently used teaching materials. Shigematsu (2009) surveyed what kinds of activities are frequently adopted in English reading classes in middle schools in Japan. The survey was conducted on 3,387 middle school

English teachers. He determined that the reading classes' activities were mainly composed of textbook reading: 98.8% of the teachers answered that 'reading activity (reading textbook aloud)' was practiced in their classes, and 73.0% of them answered 'text translation'.

Usually, English textbooks in Japan include these following contexts: dialogs/mutual conversation, new vocabulary with phonetic symbols, grammar points, some comprehension questions, and figures (Appendix C: Negishi, 2016b, pp. 88-89).

Matsuda (2002) describes some common features of these approved textbooks in her study:

> Each has 11 to 15 chapters consisting of the main text (usually a dialogue that introduces new vocabulary and sentence structures) and tasks related to the new function or sentence structures introduced in the main text. Summaries of grammar points and informational notes about English speaking cultures are presented at the end of each chapter, after every few chapters, or at the end of the textbook. Additional readings, poems, songs, word lists, alphabet tables, and pronunciation guides are found between chapters or at the end of the textbook (pp. 5-6).

II. Lexical Density

Halliday and Matthiessen (2013), founder of Systemic Functional Linguistics, established the ideas of grammatical complexity and 'lexical density'. They state that "written language becomes complex by being lexically dense: it packs a large number of lexical items into each clause." (p. 726). Lexical density is a measurement to show how much the sentences are dense. The higher lexical density is, the more complex the sentence. Comparing lexical density helps to calculate the level of complexity of the sentences. Lexical density is calculated by this formula:

(5) $$\frac{\text{Number of lexical word(s)}}{\text{Total number of word(s)}} \times 100(\%) = \text{Lexical Density}$$

In addition to the previous research on relative clauses, displaying the rate of lexical density in the six textbooks would illustrate the progression of language development on the six textbooks in order to see whether the textbooks follow the learners' language development as their grade level increases.

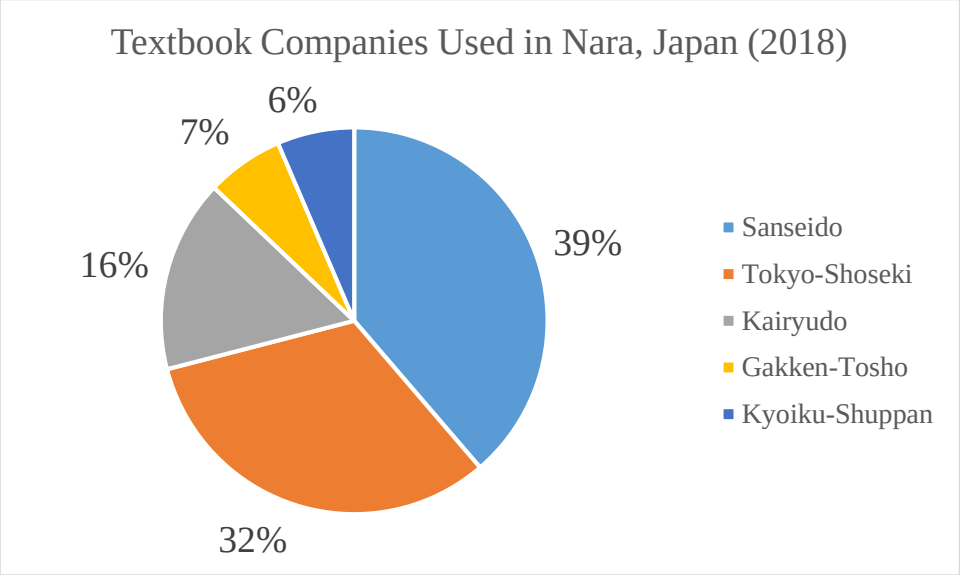
CHAPTER 2

METHOD

Materials

This thesis analyzed six English textbooks: *New Crown English Series New Edition 1* (Negishi, 2016a), *New Crown English Series New Edition 2* (Negishi, 2016b), and *New Crown English Series New Edition 3* (Negishi, 2016c) for middle school students; and *Crown English Communication 1* (Shimozaki, 2017), *Crown English Communication 2* (Shimozaki, 2014), and *Crown English Communication 3* (Shimozaki, 2015) for high school students. The reason for selecting these textbooks is that they are published by one of the biggest publishing companies in Japan called *Sanseido*. Further, 39% of middle schools in my hometown of *Nara* adopt *Sanseido* textbooks (Nihon-Kyozai-Shuppan, 2017).

Figure 4. Textbook Companies Used in Nara, Japan (Nihon-Kyozai-Shuppan, 2017)



New Crown Series (for Middle Schools)

New Crown English Series New Edition 1 (*New Crown 1*) is for first-year middle school students aged 12 to 13. *New Crown English Series New Edition 2* (*New Crown 2*) is for second-

year middle school students aged 13 to14. *New Crown English Series New Edition 3* (*New Crown 3*) is for third-year middle school students aged 14 to 15. The *New Crowns* are published for middle school students who are beginners of learning English. *New Crown 1* contains 9 chapters, *New Crown 2* contains 8 chapters, and *New Crown 3* contains 7 chapters and 2 additional dialogs.

Crown Series (for High Schools)

English Communication 1 (*Crown 1*) is for first-year high school students aged 15 to 16. *English Communication 2* (*Crown 2*) is for second-year high school students ages 16 to 17. *English Communication 3* (*Crown 3*) is for third-year high school students aged 17 to 18. All the three *Crowns* have 10 chapters in each.

Analysis

Distribution of Relative Clauses in *New Crown 3*

In middle school English class, the first lesson which includes subjective and objective relative clauses appears in Lesson 5, 'Places to Go, Things to Do', in *New Crown 3* which contains three parts: Part 1, 2, and 3.

(6) Subject Relative Clauses: *that, which, who*

New Crown 3
Lesson 5: Places to Go, Things to Do

(SRC: *that*) This is a book *that* shows houses in Asia (p. 54).

(SRC: *which*) This is a film *which* was made by George Lucas (p. 56).

(SRC: *who*) He is a director *who* made some of the world's most exciting films (p. 56).

(7) Objective Relative Clauses: *that*

New Crown 3
Lesson 5: *Places to Go, Things to Do*

(ORC: *that*) This is a postcard *that* I got from Kenya (p. 58).

(ORC: *that*) It shows some animals *that* you can see there (p. 58).

Since this is the first time for most of the learners to get exposed to relative clauses, these sentences are all single clauses, which means that these sentences focus on teaching subject and object relative clauses. However, a notable point is that there are not any sentences containing relative clauses after Lesson 5, except once; an object relative clause (*that*) appears in *Further Reading 1: A Vulture and a Child* at the end of *New Crown 3*. In general, because whether 'Further Reading' sections are taught as optional sections, not every student will perhaps have the opportunity to be exposed to the grammar again. It could then be said that there are not enough sentences and examples where learners are exposed to relative clauses. Tables 6, 7, 8 and 9 describe the distribution of subject and object relative clauses in the *New Crown* series.

Table 6. Numbers and Distribution of Subjective Relative Clauses (*that*)

Subjective Relative Clauses (*that*)	Lessons	Number of Sentences	Numbers of *that* per Lesson	Percentage of *that* per Lesson
New Crown 3	Lesson 1	14	0	0.0%
	Lesson 2	26	0	0.0%
	Lesson 3	6	0	0.0%
	Lesson 4	30	0	0.0%
	Lesson 5	14	**1**	**7.1%**
	Lesson 6	30	0	0.0%
	Lesson 7	50	0	0.0%
	Let's Read 2	35	0	0.0%
	Further Reading 1	33	0	0.0%
Total		238	**1**	**0.1%**

Table 7. Numbers and Distribution of Subjective Relative Clauses (*which)*

Subjective Relative Clauses (*which*)	Lessons	Number of Sentences	Numbers of *which* per Lesson	Percentage of *which* per Lesson
New Crown 3	Lesson 1	14	0	0.0%
	Lesson 2	26	0	0.0%
	Lesson 3	6	0	0.0%
	Lesson 4	30	0	0.0%
	Lesson 5	14	**1**	**7.1%**
	Lesson 6	30	0	0.0%
	Lesson 7	50	0	0.0%
	Let's Read 2	35	0	0.0%
	Further Reading 1	33	0	0.0%
Total		238	**1**	**0.1%**

Table 8. Numbers and Distribution of Subjective Relative Clauses (*who*)

Subjective Relative Clauses (*who*)	Lessons	Number of Sentences	Numbers of *who* per Lesson	Percentage of *who* per Lesson
New Crown 3	Lesson 1	14	0	0.0%
	Lesson 2	26	0	0.0%
	Lesson 3	6	0	0.0%
	Lesson 4	30	0	0.0%
	Lesson 5	14	**1**	**7.1%**
	Lesson 6	30	0	0.0%
	Lesson 7	50	0	0.0%
	Let's Read 2	35	0	0.0%
	Further Reading 1	33	0	0.0%
Total		238	**1**	**0.1%**

Table 9. Numbers and Distribution of Objective Relative Clauses (*that*)

Objective Relative Clauses (*that*)	Lessons	Number of Sentences	Numbers of *that* per Lesson	Percentage of *that* per Lesson
New Crown 3	Lesson 1	14	0	0.0%
	Lesson 2	26	0	0.0%
	Lesson 3	6	0	0.0%
	Lesson 4	30	0	0.0%
	Lesson 5	14	**2**	**14.3%**
	Lesson 6	30	0	0.0%
	Lesson 7	50	0	0.0%
	Let's Read 2	35	0	0.0%
	Further Reading 1	33	1	2.7%
Total		238	**3**	**0.46%**

The literature review mentioned that object relative clauses are more difficult for EFL/ESL learners (Gibson, 1998; Gordon et al., 2001; Mellow, 2006; Hawkins, 1994; King & Just, 1991; Otsuka & Aburai, 2003). However, Tables 6, 7, 8 and 9 indicate that there is not enough repetition of practice of both types of relative clauses; there are only three subject and

object relative clauses each in *New Crowns*. Thus, the lack of example sentences might contribute to their confusion regarding the grammar point.

Distribution of Relative Clauses in *Crown 1, 2,* and *3*

In high school English classes, the first lesson in which subjective and objective relative clauses appear is Lesson 3, '*A Canoe is an Island*', in *Crown 1*. Here are the two example sentences from the lesson in the textbook:

(8) Subject Relative Clause: *who*

Crown 1
Lesson 3: *A Canoe is an Island*

(SRC: *who*) The crew members *who* were on the Hokule'a were busy (p. 34).

(9) Object Relative Clause: *which*

Crown 1
Lesson 3: *A Canoe is an Island*

(ORC: *which*) Being familiar with the movement of about 220 stars was just one of the skills *which* we needed (p. 33).

The lesson (Lesson 3 in *Crown 1*) addresses subject and object relative clauses again in order to review what learners have learned in middle school. The next two lessons after Lesson 3 provide some new uses of relative clauses. Therefore, the appearance of subject and object relative clauses in Lesson 3 would allow learners to remember basic relative clause types and to learn other usages of the grammar in the following lessons more easily.

Comparison between the frequency of the grammar point with the *New Crown* series and the *Crown* series shows that the frequency of relative clauses is higher in the latter. There are 102

sentences with subject relative clauses and 29 sentences with object relative clauses. This frequency difference is shown in Table 10:

Table 10. Total Number of Subject and Object Relative Clauses in *New Crown 3* and *Crown* Series

Relative Clause	*New Crown 3*	*Crown series*
Total Number of Subject Relative Clause	3	102
Total Number of Object Relative Clause	3	29

In Table 10, there are 102 example sentences of subject relative clauses in the *Crown series*. Some chapters are missing subject relative clause sentences, but *Crown 1*, *2*, and *3* include a more constant practice of subject relative clauses. Moreover, the emergence of subjective relative clauses in all the lessons in *Crown 3* indicates that learners working with this textbook should have more steady practice of the grammar throughout the year.

Table 11. Total Number of Subject and Object Relative Clauses in *New Crowns* and *Crowns*

Textbook	Number of Sentences	Type of Relative Clause	Number of each Relative Clause	Percentage of each Relative Clause (%)
New Crown 3	238	Subject RC	3	1.2%
		Object RC	3	1.2%
Crown 1	551	Subject RC	24	4.3%
		Object RC	4	0.7%
Crown 2	523	Subject RC	26	0.5%
		Object RC	6	0.1%
Crown 3	761	Subject RC	52	0.7%
		Object RC	19	0.2%

On the other hand, there are 29 sentences which include object relative clauses in *Crown 1*, *2*, and *3*. The least amount of object relative clause sentences are found in Table 11: learners are exposed to object relative clauses less frequently. This low frequency becomes rather interesting when we consider that researchers have found that object relative clauses are cognitively more complex to process than subject relative clauses for EFL/ESL learners (Gibson, 1998; Gordon et al., 2001; Mellow, 2006; Hawkins, 1994; King & Just, 1991; Otsuka & Aburai, 2003). Therefore, this low frequency may be related to a lack of model relative clauses that learners are exposed to. Table 10 shows the total number of the two kinds of relative clauses in each series of textbooks.

Furthermore, Figures 5 and 6 illustrate the distribution of the relative clauses in each lesson in both textbooks. In Figure 6, fifteen lessons out of thirty do not contain any object relative clause sentences. The lessons which do not use any object relative clauses are: Lessons 1, 2, 4, 7, 8, and 10 from *New Crown 1*, and Lessons 1, 4, 5, 6, 7, and 9 from *New Crown 2*, and Lessons 2, 3, and 10 from *New Crown 3*. Even if object relative clauses are considered one of the more difficult grammar points, these series of textbooks do not have consistent practice and example sentences.

Figure 5. Number of Subject Relative Clauses per Lesson (*Crown 1*, *2*, and *3*)

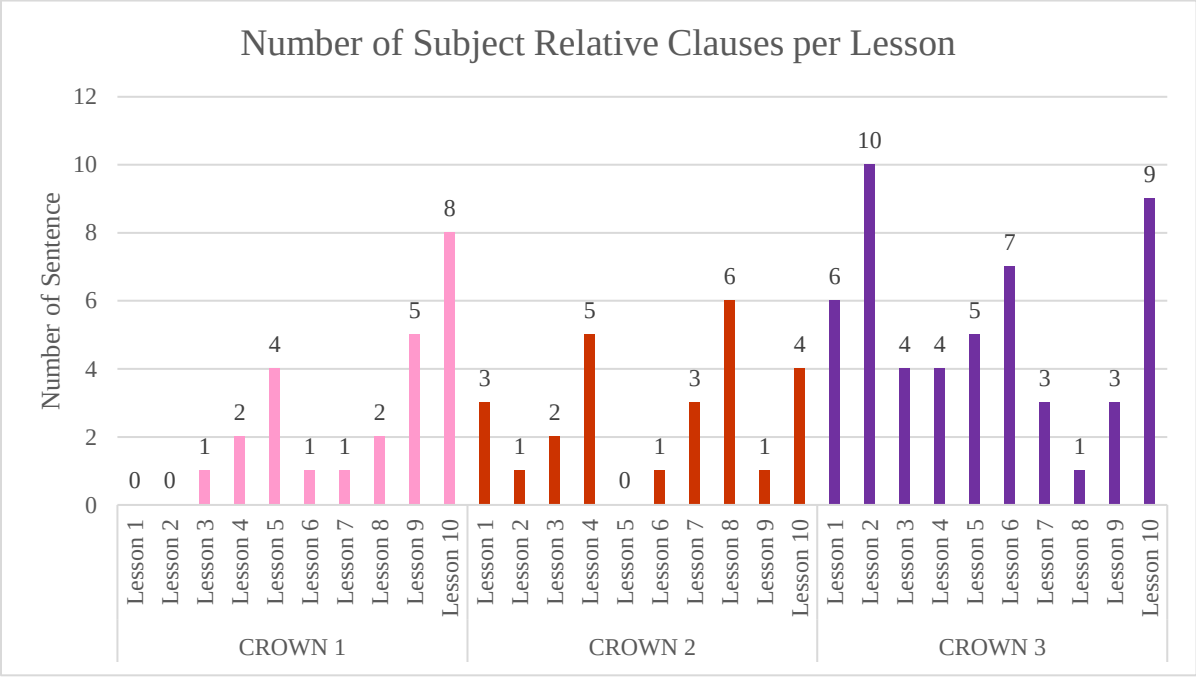
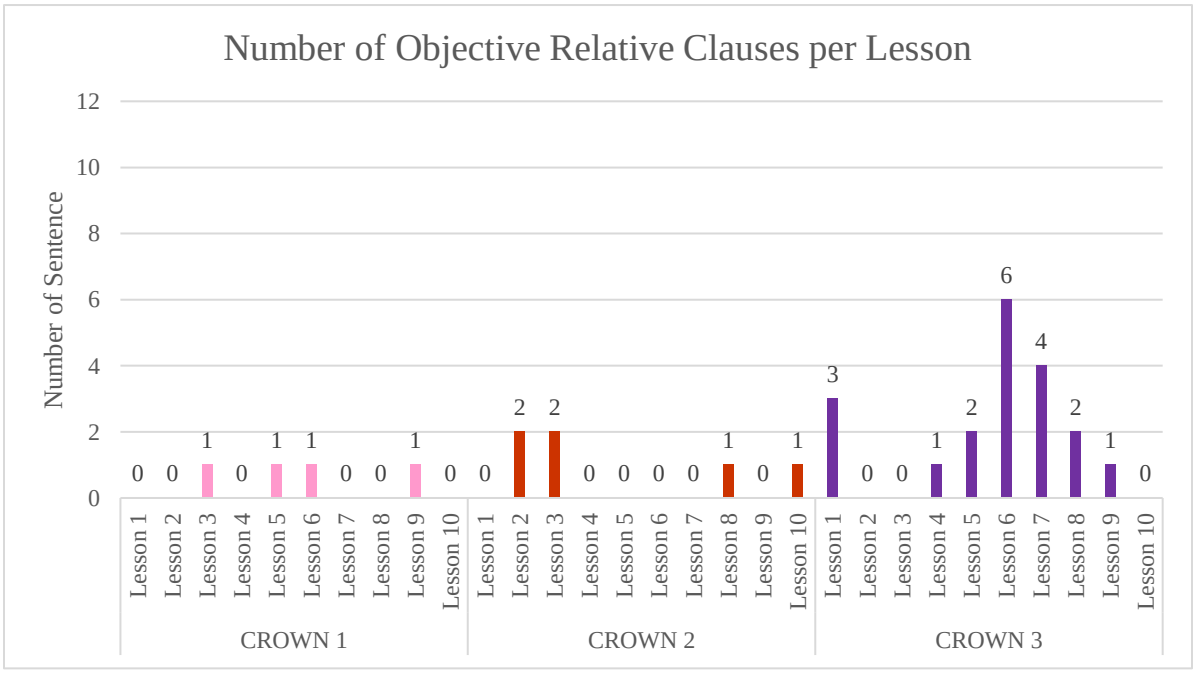


Figure 6. Number of Object Relative Clauses per Lesson (*Crown 1*, *2*, and *3*)



Lexical Density

In this data analysis, all the texts in each textbook were separated into clauses. Sentences were classified into three categories: Interjections/Greetings, single-clauses, and multi-clauses.

(10) Interjections/Greetings and Single-Clauses

New Crown 1
Lesson 1: I am Tanaka Kumi.

Original sentences (p. 23):

Emma: Hi. I'm Emma. You are Ken. Right?
Ken : Right. Are you from Australia?

Separated into clauses:

1. Hi.
2. I'm Emma.
3. You are Ken.
4. Right?
5. Right.
6. Are you from Australia?

(11) Multi-Clauses

Crown 3
Lesson 1: An American in the Heart of Japan

Original sentences (p. 6):

I kept the diaries, although I was not supposed to, because I planned to return them to the soldiers' families. However, my desk was searched and the diaries were taken away.

Separated into clauses:

1. I kept the diaries,
2. although I was not supposed to,
3. because I planned to return them to the soldiers' families.
4. However, my desk was searched
5. and the diaries were taken away.

As shown in Examples (10) and (11), Figures 7 and 8 indicated the number of clauses in each lesson in the textbooks. In both series, the last textbooks for each level mark the highest numbers of clauses.

Figure 7. Number of Clauses per Lesson (*New Crown 1*, *2*, and *3*)

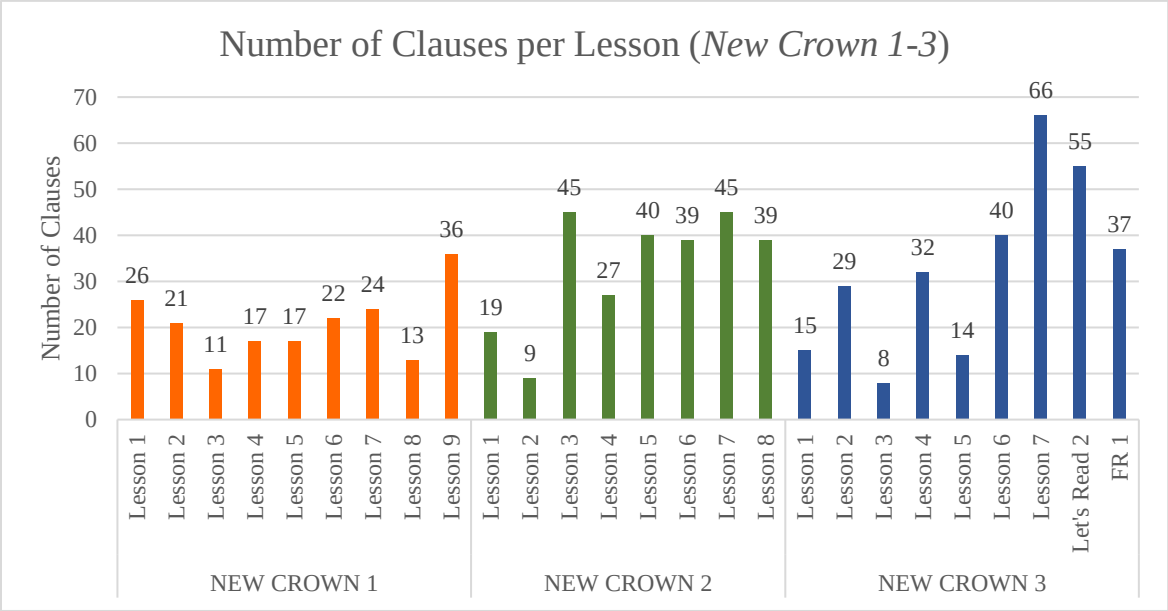


Figure 8. Number of Clauses per Lesson (*Crown 1*, *2*, and *3*)

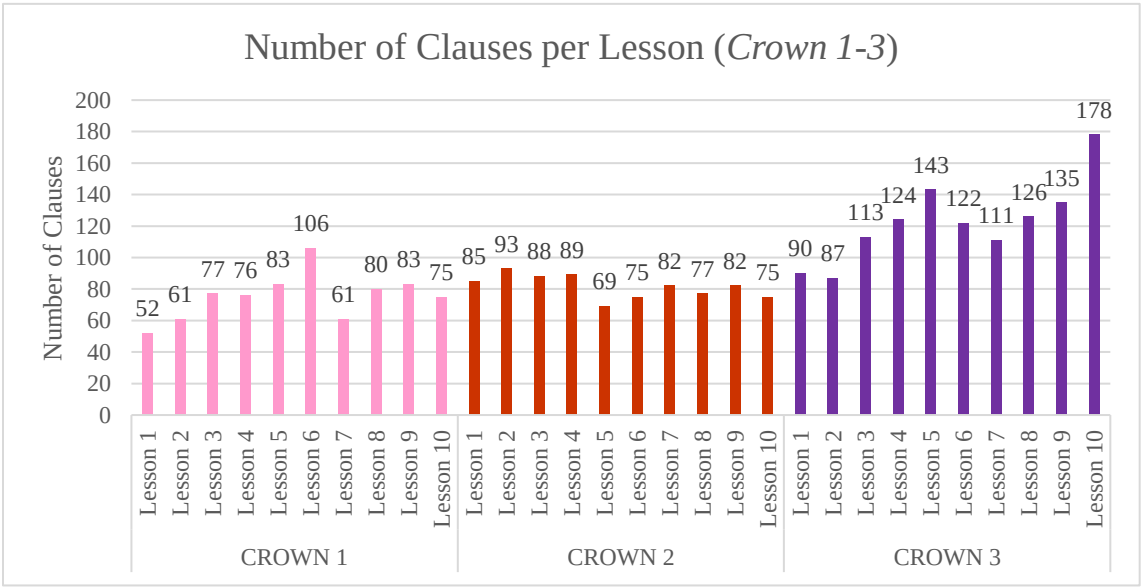
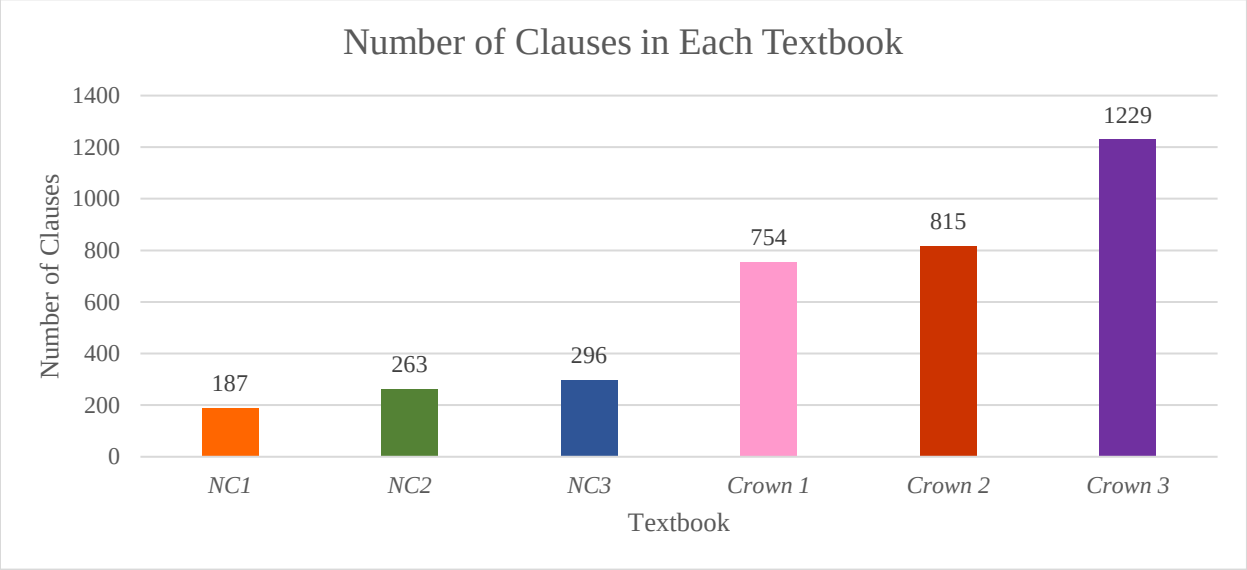


Figure 9 displays the total number of clauses in each textbook through the six years. The data demonstrate that the amount of clauses increases according to their grade levels. However, the number of clauses between *New Crown 3* and *Crown 1* is remarkably different from each other: 296 clauses in *New Crown 3* and 754 clauses in *Crown 1*. In the Japanese school calendar, there is only one month between the end of the third year in middle school and the beginning of the first year of high school. Third year students in middle school graduate in March, and start going to high school in April. During this period, students usually are busy preparing for the next semester. Therefore, it can be assumed that students who were third-year middle schoolers face the difficulty of the clause complex structures in textbook reading sections when they become first-year high school students. First-year high school students are confronted with approximately 2.5 times the number of clauses. This sudden increase in the number of clauses might cause a problem as learners will have to read the amount of texts that they are not used to. Figure 9 also shows another sudden gap between the second year in high school and the third year high school: from 815 clauses to 1229 clauses. The 414 clause difference among them might also bring some confusion to the third year high school students.

The number of clauses in the six textbooks increases year by year. However, there are sudden increases in some years. Therefore, the publisher should attempt to make the transition gentler between the textbooks.

Figure 9. Number of Clauses in Each Textbook



In order to calculate the clause complexity, the formula of lexical density showed earlier in (5) was applied to each lesson in all six textbooks. For example, there are 66 clauses in Lesson 7 from *New Crown 3*, and the total number of sentences is 50. Example (12) below calculates the lexical density of Lesson 7 in *New Crown 3*. Figures 10 and 11 display the results of lexical density calculations for each lesson.

(12) $\frac{66}{50} \times 100(\%) = 132\%$

Figure 10. Lexical Density in Each Lesson (*New Crown 1-3*)

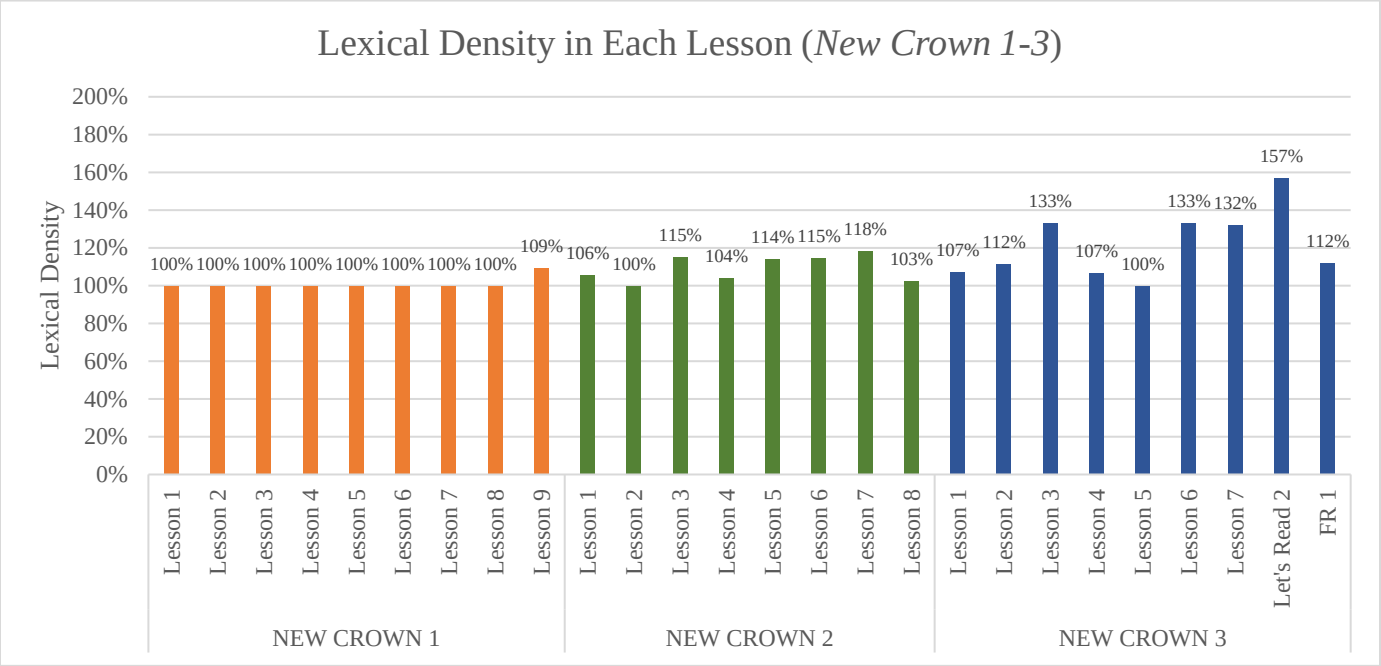
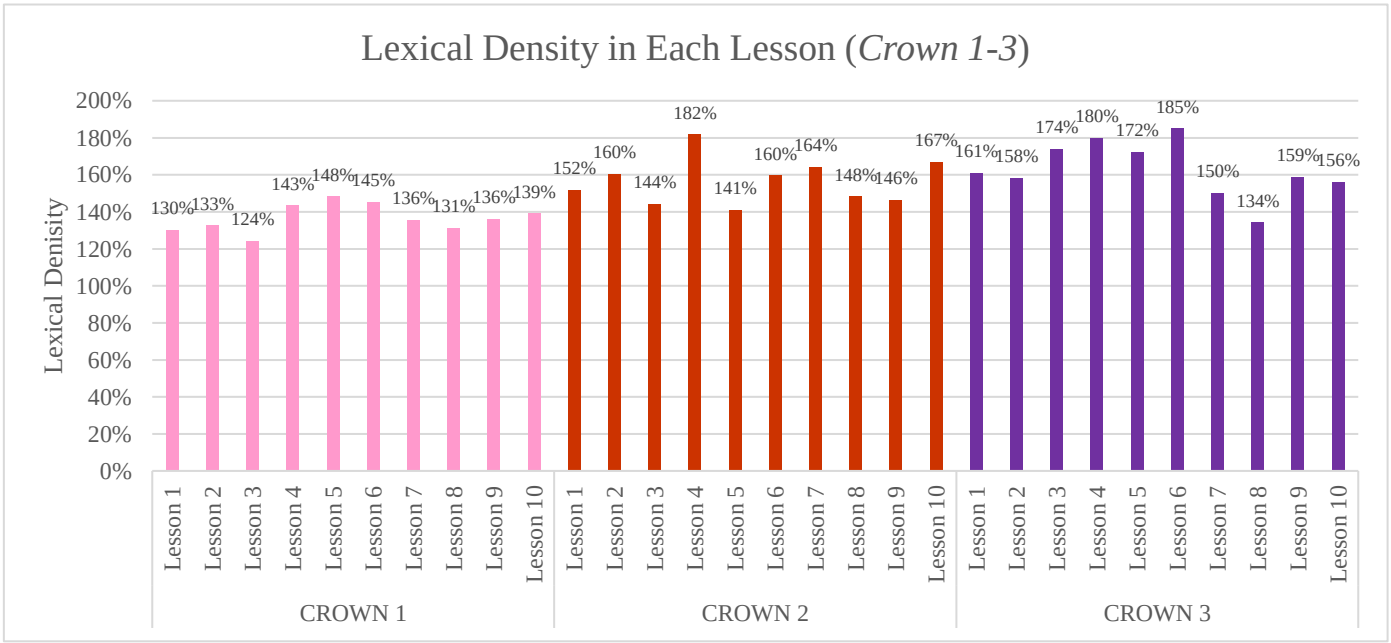


Figure 11. Lexical Density in Each Lesson (*Crown 1-3*)

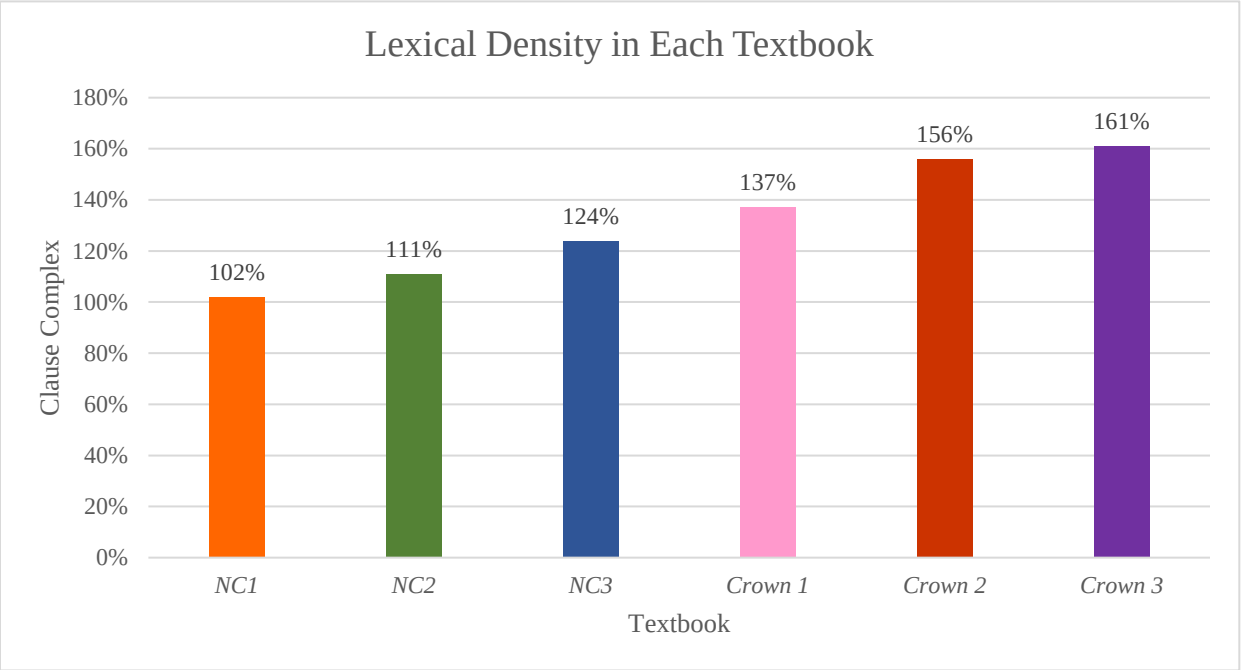


Lexical density in *New Crown 1* indicates that the majority of sentences are single-clause sentences. As we progress to the end of the last year of middle school, the lexical density in the sentences increases. Thus, this increase in the *New Crown* series seems to gradually expose learners to the target development (see Figure 10). In Figure 11, the lexical density in the first chapter of *Crown 1* starts with 130%. However, that amount of density is already shown in some last lessons in *New Crown 3* which is for the third year middle schoolers. Therefore, the 130% of lexical density should not be a serious problem for the first year high school students at the beginning of the semester. However, Lesson 4 in *Crown 2* scores 182% of lexical density, which is the biggest gap in the two series of textbooks and could be considered a relatively sudden increase for learners.

Figure 12 illustrates the gradual increase of the total number of clauses. The lexical density shown in Figure 12 describes a gradual increase of the density in *New Crowns* and *Crowns* throughout the six years. *Crown 3* marked the highest lexical density among the six textbooks, as expected. Also, the increase of the density is relatively gentle, which follows learners' language development year by year.

Overall, Figure 12 shows that the lexical density of the six textbooks increases throughout the six years. However, when the lessons are compared to each other individually, there are some sudden gaps between them. The declining of the number of sharp gaps between each lesson would be more beneficial.

Figure 12. Lexical Density in Each Textbook



CHAPTER 3

RESULTS, DISCUSSION & CONCLUSION

The purpose of this thesis was to examine some differences in relative clause types, and why they are difficult for Japanese students based on previous research, to show how often relative clauses appear in the six selected textbooks, to examine the adequacy of the amount of examples, and to discuss how the textbooks are organized in relation to the progression of lexical density in the example sentences. A number of previous research has shown various reasons as to why relative clauses are considerably harder than any other grammar items, especially object relative clauses which cause more confusion in EFL/ESL learners (Gibson, 1998; Gordon et al., 2001; Mellow, 2006; Hawkins, 1994; King & Just, 1991; Otsuka & Aburai, 2003). The previous findings have introduced many explanations such as word order difference, working memory, and diverse functions of relative clauses etc. In this thesis, in order to understand how relative clauses are actually introduced in the middle and high school textbooks, I have focused on the textbooks themselves which are used by learners every day in classes. Additionally, by analyzing the lexical density of the English textbooks, the analysis has attempted to show levels of increasing reading difficulty from one textbook to another.

For the purpose of analysis, analyses were performed to determine the distribution of relative clauses in two series of textbooks. In the *New Crown* series, middle school students' English textbooks, subject and object relative clauses appear only three times in each in the entire three textbooks which have 238 sentences, where the distribution rate is 1.2%. In regard to the *Crown 1,* the first-year high school English textbook, subject relative clauses appear 24 times (4.3%) and object relative clauses appear four times (0.7%) out of 551 sentences. *Crown 2*, the second-year high school English textbook which has 523 sentences in total, includes 26 subject

relative clause sentences (4.9%) and six object relative clause sentences (1.1%). *Crown 3*, the third-year high school English textbook including 761 sentences, contains 52 subject relative clauses (6.8%) and 19 object relative clauses (2.4%). It became clear that there is a lack of repetition of exposing the grammar point in the two series of English textbooks, which might be one of the reasons why relative clauses remain difficult for students who study English in Japan. Furthermore, even if the distribution rate gets slightly higher in high school English textbooks, the non-constant appearance of objective relative clauses could aggravate comprehension problems for the learners. Therefore, learners should be exposed to relative clause sentences more in order to decrease confusion. This finding may provide some evidence for textbook publishers in Japan to provide enough practice and reading dialogues on the target grammar points through middle school and high school. Japan is currently ranked 27th out of 35 Asian countries in the general EFL proficiency level (ETS, 2017, p. 14), and the language features of EFL textbooks used in Japan might be responsible for this low ranking.

This thesis further examined the lexical density in the textbooks by counting the number of clauses in the six textbooks. Analyzing the lexical density in these textbooks revealed an increasing complexity of the sentences they used. In the early stages of learning English in middle schools such as the first-year textbook, the texts are mostly daily conversations between two people instead of stories and essays. Therefore, the number of clauses in the textbook are lower than the later ones. The lexical density starts at 102% in *New Crown 1*, 111% in *New Crown 2*, and 124% in *New Crown 3* for middle school textbooks, and 137% in *Crown 1*, 156% in *Crown 2*, and 161% in *Crown 3* for high school textbooks. The *New Crown* and *Crown* series deliver increasing levels of the progression of language complexity throughout the years.

However, despite this regular increase in the percentages, the analysis in this thesis also showed that there are some sudden gaps between lessons.

In sum, this research has examined the distribution of relative clauses and the lexical density in the two series of English textbooks in Japan. Whether a textbook succeeds in bridging gaps between what learners already know and what they are expected to learn depends on many other factors as well, and future research on the effectiveness of EFL textbooks will necessarily have to examine not only language features as well as test results of learners learning through various other means of learning such as the use of online EFL learning materials.

REFERENCES

Chujo, K., Yokota, K., Hasegawa, S., & Nishigaki, C. (2012). リメディアル学習者の英語習熟度と英語文法習熟度調査 [Identifying the general English proficiency and distinct grammar proficiency of remedial learners]. *Study Report of College of Industrial Technology at Nihon University B, 45*, 43-54.

ETS. (2017). Test and score data summary for TOESL iBTⓇ tests. Retrieved from https://www.ets.org/s/toefl/pdf/94227_unlweb.pdf.

Fabb, N. (1990). The difference between English restrictive and nonrestrictive relative clauses. *Journal of linguistics*, 26(1), 57-77.

Gennari, S. P., & MacDonald, M. C. (2008). Semantic indeterminacy in object relative clauses. *Journal of Memory and Language*, 58(2), 161–187. Retrieved from https://doi.org/10.1016/j.jml.2007.07.004.

Gibson, E. (1998). Linguistic complexity: Locality of syntactic dependencies. *Cognition*, 68(1), 1–76.

Gordon, P. C., Hendrick, R., & Johnson, M. (2001). Memory interference during language processing. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *27*(6), 1411.

Halliday, M. A. K., & Matthiessen, C. M. (2013). *Halliday's introduction to functional grammar*. (4th ed.). New York: Routledge.

Hawkins, J. A. (1994). *A performance theory of order and constituency* (vol. 73). Cambridge: Cambridge University Press.

Hidai, S., Matsumoto, H., Takahashi, S., Suzuki, A., Oda, M., Enomoto, M., & Tanji, M. (2012). 大学前の文法の定着度に関する研究 [A study of pre-college English grammar acquisition]. *The Ronso: Bulletin of the Faculty of Letters, Tamagawa University*, 53, 31-58.

King, J., & Just, M. A. (1991). Individual differences in syntactic processing: The role of working memory. *Journal of Memory and Language*, 30(5), 580-602.

King, J. W., & Kutas, M. (1995). Who did what and when? Using word-and clause-level ERPs to monitor working memory usage in reading. *Journal of Cognitive Neuroscience*, 7(3), 376–395.

Lin, Chien-Jer Charles and Thomas G. Bever. (2006). Subject preference in the processing of relative clauses in Chinese. In *Proceedings of the 25th West Coast Conference on Formal Linguistics*, ed. Donald Baumer, David Montero, and Michael Scanlon, 254-260. Somerville, MA: Cascadilla Proceedings Project.

Matsuda, A. (2002). Representation of users and uses of English in beginning Japanese EFL textbooks. *JALT Journal*, *24*(2), 182–200.

Mellow, J. D. (2006). The emergence of second language syntax: A case study of the acquisition of relative clauses. *Applied Linguistics*, *27*(4), 645–670. Retrieved from https://doi.org/10.1093/applin/aml031.

Negishi, M. (2016a). *New crown English series new edition 1.* Sanseido. Tokyo: Japan.

Negishi, M. (2016b). *New crown English series new edition 2.* Sanseido. Tokyo: Japan.

Negishi, M. (2016c). *New crown English series new edition 3.* Sanseido. Tokyo: Japan.

Nihon-Kyozai-Shuppan. (2017). 2018 年度教科書採択表. Retrieved from http://www.nihonkyouzai.jp/wordpress/wp-content/uploads/2018/03/c6103a4330b6c5bdbaec2197327e192f.pdf.

Otsuka, I. & Aburai, T. (2003). 関係詞の効果的指導法 [An effective teaching method of relative clauses]. *Departmental Bulletin Paper: The Faculty of Education, Kanazawa University*, 53, 1-16.

Shigematsu, Y. (2009). 中学英語の「今」と「これから」["Current situation" and "future" on teaching English in middle schools]. Benesse: *Report of Research on English Education in Middle Schools in 2009*, Analysis 1, 31-41.

Shimozaki, M. (2014). *Crown English communication 2.* Sanseido. Tokyo: Japan.

Shimozaki, M. (2015). *Crown English communication 3.* Sanseido. Tokyo: Japan.

Shimozaki, M. (2017). *Crown English communication 1.* Sanseido. Tokyo: Japan.

Ueno, M. & Garnsey, S. (2007). An ERP study of the processing of subject and object relative clauses in Japanese. *Language and Cognitive Processes*, 23(5), 646-688.

APPENDIX A: OFFICE OF RESEARCH INTEGRITY APPROVAL LETTER

MARSHALL UNIVERSITY.
www.marshall.edu

Office of Research Integrity

March 19, 2018

Risa Nakagawa
207 19th Street, Apt. D
Huntington, WV 25703

Dear Risa:

This letter is in response to the submitted thesis abstract entitled *"The Progressive Distribution of Sentences Containing Relative Clauses in Japanese Textbooks of English."* After assessing the abstract, it has been deemed not to be human subject research and therefore exempt from oversight of the Marshall University Institutional Review Board (IRB). The Code of Federal Regulations (45CFR46) has set forth the criteria utilized in making this determination. Since the information in this study does not involve human subjects as defined in the above referenced instruction, it is not considered human subject research. If there are any changes to the abstract you provided then you would need to resubmit that information to the Office of Research Integrity for review and a determination.

I appreciate your willingness to submit the abstract for determination. Please feel free to contact the Office of Research Integrity if you have any questions regarding future protocols that may require IRB review.

Sincerely,

Bruce F. Day, ThD, CIP
Director

APPENDIX B: GRAMMAR TEST RESULTS (CHUJO ET AL., 2012)

文法項目			英検級該当者の正答率（%）					平均正答率（%）
			2級	準2級	3級	4級	5級	
中学文法項目	1	代名詞	97	93	89	80	58	88
	2	名詞複数形	83	71	57	37	17	56
	3	属格（'s）	89	82	55	12	0	53
	4	*be* 動詞	93	94	91	85	70	90
	5	*Yes/No* 疑問文	91	82	78	61	41	76
	6	*Wh* 疑問文	99	96	92	72	61	88
	7	比較表現	94	87	85	54	20	78
	8	時制	82	81	67	43	19	66
	9	分詞（後置修飾）	94	92	77	60	42	77
	10	現在進行形	100	92	78	59	33	78
	11	*to* 不定詞	100	92	83	58	44	81
	12	受動態	89	74	64	26	33	59
	13	現在完了形	81	75	58	25	11	57
	14	関係代名詞	100	93	77	58	50	77
	15	否定形	56	70	66	53	29	63
	16	法助動詞	100	88	78	58	56	79
	17	存在構文	100	85	74	20	17	66
	18	*it*（天候と時間表現）	100	84	68	76	83	76
	19	接続詞	100	100	97	87	75	94
	20	間接疑問文	78	74	59	32	33	58
	21	*how to*	100	87	74	50	33	73
	中学平均		92	85	75	53	39	73
高校文法項目	1	関係詞	67	59	35	16	17	39
	2	分詞	78	79	74	54	28	69
	3	仮定法	22	38	22	3	0	21
	4	第5文型（SVOC）	56	53	62	41	33	54
	5	動名詞	89	87	58	34	33	61
	6	助動詞	78	68	58	29	33	55
	7	前置詞	44	47	48	19	8	40
	8	形式目的語	67	45	42	18	17	38
	9	譲歩	0	18	22	3	0	15
	10	*S*＋*seem*＋*to* 不定詞	33	37	24	3	0	22
	11	第4文型（SVOO）	100	76	57	21	50	56
	12	強調	56	47	35	9	17	33
	13	副詞	67	68	67	49	25	62
	14	接続詞	78	68	53	19	17	50
	15	否定	74	66	52	24	0	49
	16	*wh* 語を含むいろいろな文	85	89	63	41	28	65
	17	無生物主語	78	61	26	3	0	33
	高校平均		63	59	47	23	18	45
全体平均			79	74	62	39	30	60

APPENDIX C: EXAMPLE PAGE OF ENGLISH TEXTBOOK (NEGISHI, 2016B, PP. 88-89)