

How Critical Thinking Is Taught in High School English Textbooks

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The Japanese Ministry of Education (MEXT) implemented the new Course of Study for high schools in 2013, in which they specified the development of critical thinking (CT) as one of the objectives of two English courses: English Expression I (EEI) and English Expression II (EEII). I investigated how MEXT-approved textbooks for these courses are compiled to achieve that goal. In the study, the questions, exercises, and tasks in these textbooks were divided into three categories: language form questions, open-ended questions (whose answers do not necessarily require supporting reasons), and CT questions (whose answers require reasons). The frequencies of open-ended and CT questions per lesson were calculated. It was found that the average number of CT questions per lesson was 0.85 in EEI textbooks and 1.3 in EEII textbooks, and that only 30% of the EEI textbooks and 54% of the EEII textbooks had at least one CT question per lesson.

文科省は新「高等学校学習指導要領」を2013年度から実施し、その中で批判的思考力の育成を「英語表現I・II」の目標として明示した。本論文は、文科省が認可したこれら2つの科目の教科書が、その目標を達成すべくどのようにして編纂されているのかを量的に調査したものである。具体的には、教科書中の問い・練習問題・課題を、1) 言語形式を問う問題、2) 答えに理由の裏付けを必ずしも必要としないオープンエンドの問題、3) 理由付けが必ず求められる批判的思考の問題の3種類に分類し、各教科書の2)と3)の問題の出現頻度を算出した。その結果、「英語表現I」の教科書全体における1課当たりの批判的思考問題の出現頻度は0.85、「英語表現II」でも1.3にしか過ぎず、1以上あったのは「英語表現I」の30%、「英語表現II」の54%の教科書に過ぎないことが明らかとなった。

THE JAPAN Ministry of Education, Culture, Sports, Science and Technology (MEXT) implemented the latest Course of Study for high school in fiscal 2013. This introduced two new English courses, English Expression I and II, whose objective is “to develop [or “further develop” for English Expression II] students’ abilities to evaluate facts, opinions, etc. from multiple perspectives and communicate through reasoning and a range of expression, while fostering a positive attitude toward communication through the English language” (MEXT, 2011a, pp. 3-4). The “abilities to evaluate facts, opinions, etc. from multiple perspectives and communicate through reasoning” are paraphrased by MEXT as “critical thinking” skills (MEXT, 2011b). This is the first time that critical thinking (CT) has been specified as one of the main objectives of particular English courses.

MEXT had good reason to make this change. The inadequacy of Japanese learners’ CT skills has long been pointed out, especially after years of unsatisfactory performance of Japanese students on the OECD’s PISA (Program for International Student Assessment) reading tests. The ranking of Ja-

pan among OECD countries was 8 in 2000, 14 in 2003, 15 in 2006, and 8 in 2009. Against this background, Mineshima and Chino (2013) compared textbooks of three different countries—Japan, Korea, and Finland (ranked among the highest-scoring countries on past PISA tests)—to examine what kinds of questions were asked in the textbooks of these countries; on the premise that different types of questions lead to the development of different skills and hence reflect the teaching priorities of those countries. It was found that Japanese textbooks placed much greater emphasis on information access and retrieval skills than other countries, and suggestions were made to provide Japanese learners with more opportunities to respond as individual thinkers.

The present study, which was originally reported as part of the Critical Thinking Forum at the JALT2015 International Conference, examined MEXT-approved high school English textbooks published since the implementation of the new Course of Study, with a particular focus on how the authors of these textbooks aim to develop students' critical thinking skills.

Method

All 20 textbooks for English Expression I (see Appendix A) currently available in Japan, as well as 13 textbooks for English Expression II (see Appendix B) were subjected to analysis. Questions, exercises and tasks in these 33 textbooks were sorted into either one of these three categories—language form questions (LFQs), open-ended questions (OEQs), and critical thinking questions (CTQs). LFQs were excluded from further analysis because the purpose of this study was not to compare the ratio of these three types of questions or discuss its appropriateness, which would require another study, but to investigate how many OEQs and CTQs learners actually encounter when using these new textbooks and evaluate the adequacy of these textbooks. The OEQs and CTQs were counted and calculated per lesson and per week. Sequential questions that follow an initial question were treated as part of the same question category.

Language form questions are defined as questions whose main purpose is to teach learners grammatically appropriate English expressions. These questions are different from the other two question types in that they are closed-ended and usually have one correct answer. Here are some examples of LFQs:

- A. Choose the most appropriate option.
In Japan, the school year (starts / is starting) in April.
- B. Make sentences using the words below.
[summer / go / shall / we / where / this] ⇒ Where...?
- C. Rewrite each sentence, using the underlined words as the subject.
Tom and Ken adopted this kitten a month ago.

Open-ended questions, on the other hand, are different from LFQs in that they do not have single correct answers everyone can agree on. The answers can be multiple and varied. They also differ from CTQs in that their answers do not necessarily require supporting reasons or evidence, which is a necessary condition for CTQs. Some examples of OEQs are shown below:

- D. What did you do last weekend?
- E. Talk with your partner about breakfast.
- F. Write something you were recently surprised at.

There can be many different answers to these questions, and all answers are acceptable as long as they make sense. To Question D, for example, learners can reply, “I went to a movie with a friend, and we did some shopping” or “I read *The Girl with the Dragon Tattoo* all day.”

The third question type is CTQs. Critical thinking skills are defined by MEXT (2010) in their supplementary Teaching Guide to the Courses of Study as the ability “to go beyond a mere understanding of facts and opinions by comparing your understanding with other facts and opinions, including your own, analyzing and evaluating

it based on your own knowledge and experience, and integrating it with your existing knowledge” (original in Japanese, translation by author). In line with this definition and the objective stated in the new Course of Study, this study defined CTQs as questions that require learners to analyze a given topic from multiple perspectives and whose answers should be supported by reasons, evidence, or examples. The following are some examples of CTQs:

- G. Write 60 words or so about what you consider to be an ideal couple.
- H. What are the advantages and disadvantages of studying abroad?
- I. Why do Japanese players bow before they enter the playing area?

In order to respond to these questions, learners have to analyze the topic from different viewpoints, explore possible alternative answers, and back up their answers with persuasive reasoning, which is not necessarily required by OEQs.

It has to be noted, however, that OEQs and CTQs are not always easy to distinguish because the extent to which a question requires reasons and evidence was sometimes difficult to determine. In this study, all ambiguous cases were categorized as OEQs except when they were followed by model answers that had a clear claim–reason structure.

Results and Discussion

Tables 1 and 2 below show descriptive statistics for the 20 English Expression I (EEI) and the 13 English Expression II (EEII) textbooks, the number of lessons, OEQs, OEQs per lesson, CTQs, CTQs per lesson, and CTQs per week (the last of which will be discussed later). The data are presented in the ascending order of CTQs per lesson.

Table 1. Descriptive Statistics for English Expression I Textbooks

Textbook title	L	OEQ	OEQ/l	CTQ	CTQ/l	CTQ/w
My Way I	35	31	0.9	8	0.2	0.2
Atlantis	16	23	1.4	5	0.3	0.1
Vivid I	28	22	0.8	7	0.3	0.2
Select	23	18	0.8	8	0.3	0.2
Grove I	30	47	1.6	10	0.3	0.3
New One World I	18	13	0.7	7	0.4	0.2
Polestar I	30	74	2.5	15	0.5	0.4
Big Dipper I	48	48	1.0	23	0.5	0.7
New Favorite I	29	25	0.9	16	0.6	0.5
Expressways I	19	18	0.9	13	0.7	0.4
Crown I	24	9	0.4	17	0.7	0.5
Cosmos I	27	35	1.3	19	0.7	0.5
Screenplay I	30	14	0.5	23	0.8	0.7
Monument I	20	10	0.5	17	0.9	0.5
Perspective I	24	21	0.9	25	1.0	0.7
Mainstream I	18	40	2.2	26	1.4	0.7
Unicorn I	20	33	1.7	30	1.5	0.9
Vision Quest I Standard	12	44	3.7	20	1.7	0.6
Departure I	20	18	0.9	35	1.8	1.0
Vision Quest I Advanced	12	41	3.4	27	2.3	0.8
<i>M</i>	24.2	29.2	1.35	17.6	0.85	0.51
<i>SD</i>	8.22	15.9	0.91	8.35	0.58	0.25

Note. L = Lessons in book; OEQ = open-ended questions; OEQ/l = OEQs per lesson; CTQ = critical thinking questions; CTQ/w = CTQs per week.

Table 2. Descriptive Statistics for English Expression II Textbooks

Textbook title	L	OEQ	OEQ/l	CTQ	CTQ/l	CTQ/w
New One World II	39	18	0.5	19	0.5	0.5
Vivid II	45	24	0.5	22	0.5	0.6
Crown II	26	13	0.5	18	0.7	0.5
Unicorn II	30	11	0.4	21	0.7	0.6
Big Dipper II	53	43	0.8	39	0.7	1.1
My Way II	34	24	0.7	28	0.8	0.8
Vision Quest II	29	11	0.4	31	1.1	0.9
New Favorite II	38	11	0.3	41	1.1	1.2
Polestar II	40	28	0.7	47	1.2	1.3
Perspective II	33	12	0.4	56	1.7	1.6
Grove II	27	79	2.9	48	1.8	1.4
Departure II	42	29	0.7	92	2.2	2.6
Mainstream II	20	24	1.2	84	4.2	2.4
M	35.1	25.2	0.8	42	1.3	1.2
SD	8.59	18	0.66	22.9	0.97	0.65

Note. L = Lessons in book; OEQ = open-ended questions; OEQ/l = OEQs per lesson; CTQ = critical thinking questions; CTQ/w = CTQs per week.

The average number of lessons in EEI was about 24, with a standard deviation of 8.2. The minimum number was 12, and the maximum was 48. As for EEII, the average number was about 35; the minimum was 20 and the maximum was 53, more than twice as many lessons. The standard deviation was 8.6, close to that of EEI. There were more lessons in EEII than in EEI, although the numbers of lessons in both EEI and EEII varied greatly according to the textbook.

Secondly, there were more OEQs (1.35) than CTQs (0.85) per lesson in EEI whereas in EEII the opposite was true: there were 0.8 OEQs and 1.3 CTQs per lesson. Five EEI textbooks (25%) and two EEII textbooks (15%) were exceptions to this. This general tendency to have more CTQs as well as lessons in EEII than in EEI may reflect the textbook writers' intention to increase students' cognitive load from EEI to EEII.

Thirdly, the average number of CTQs per lesson was 0.85 in EEI; the minimum was 0.2 and the maximum was 2.3 CTQs per lesson. In EEII the average number of CTQs per lesson was 1.3; the minimum was .5 and the maximum was 4.2 CTQs per lesson. The number of CTQs per lesson in each textbook is shown graphically in Figures 1 and 2. The horizontal line in each graph indicates a frequency of one CTQ per lesson. Only six (30%) of the EEI textbooks and seven (54%) of the EEII textbooks have one or more than one CTQ per lesson.

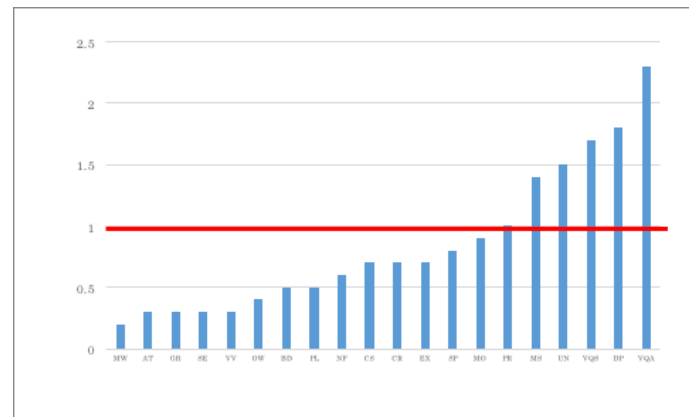


Figure 1. Number of CTQs per lesson in English Expression I textbooks.

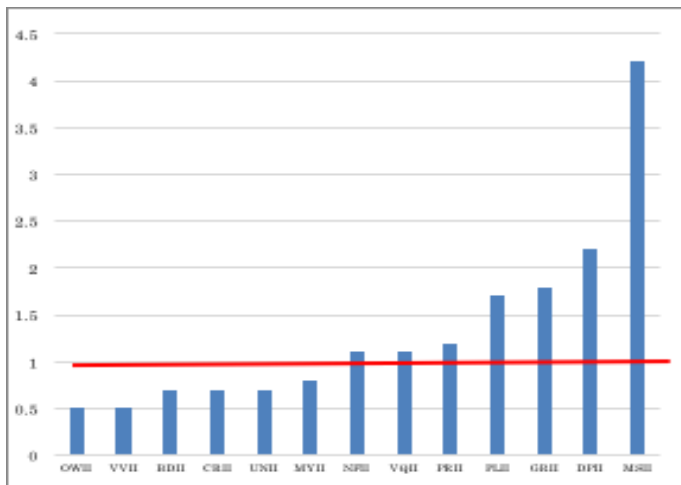


Figure 2. Number of CTQs per lesson in English Expression II textbooks.

A simple comparison of CTQs per lesson can be misleading, however, because the number of lessons varies greatly with the textbook. Hence, I used another criterion to examine the frequencies of CTQs, that is, the CTQs per week (see the far right column of Tables 1 and 2). Because all textbooks are designed to be completed in one academic year, which is 35 weeks as defined by MEXT, the average number of CTQs per week (i.e., CTQs divided by 35) is a more practical and reliable indicator of CTQ frequency. This would suggest how many CTQs learners encounter in a week regardless of how many lessons the textbook has or how many class hours are allocated to a subject.

The analysis showed that there was only one EEI textbook (5% of the total) and seven EEII textbooks (54%) that satisfied a criterion of at least one CTQ per week. Although there is no standard number

of CTQs per lesson or per week set by MEXT, if 95% of the EEI textbook and about 50% of the EEII textbooks fail to provide even a single CTQ in a week, quantitative adequacy of CTQs in EEI and EEII textbooks has to be called into question.

Finally, there seems to be a general tendency to place more emphasis on CTQs toward the end of the textbook. Figures 3 to 6 illustrate the numbers of OEQs and CTQs per lesson in selected textbooks. The solid line shows the frequency of CTQs per lesson, and the dotted line indicates the frequency of OEQs. As the class progresses through the year, OEQs tend to decrease whereas CTQs increase (see example textbooks in Figures 3 and 4). This is partly because many EE textbooks place discussion and debate sections in later lessons.

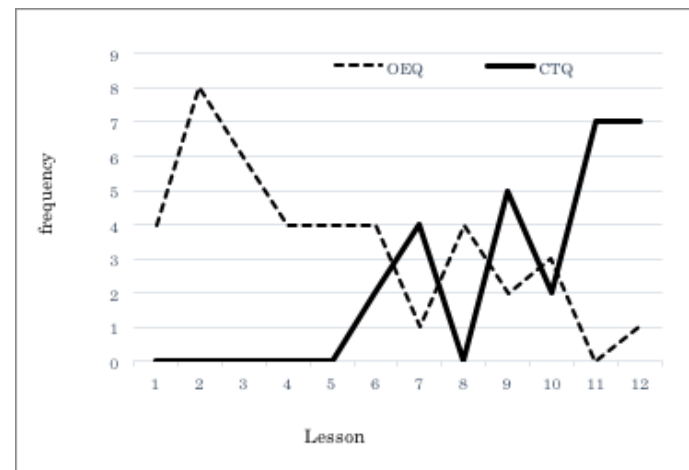


Figure 3. OEQs and CTQs in *Vision Quest 1 Advanced* (EEI textbook).

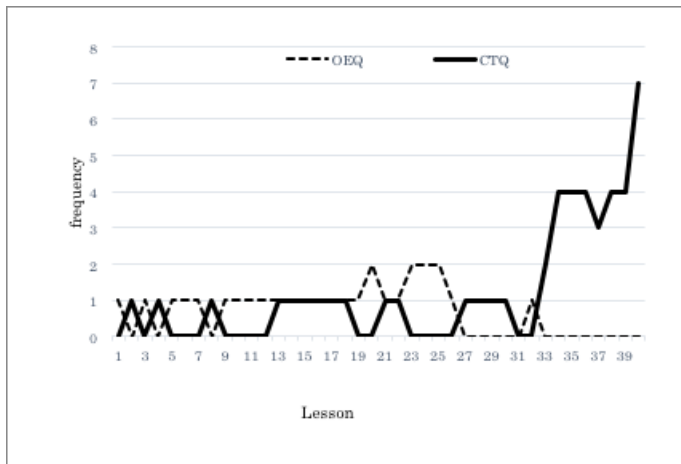


Figure 4. OEQs and CTQs in *Polestar II* (EELL textbook).

One possible danger of this end-weight tendency is that the later lessons are more likely to be cut if the teacher cannot finish the textbook, which would result in learners experiencing even fewer CTQs per lesson. Another concern is that the learning outcome of cramming CTQs into a short period would probably not be as good as if they were used more regularly and over an extended period of time. Figure 5 suggests that this has been done in *Departure I*. What is also notable about this textbook is that OEQs keep appearing throughout the text. This will probably serve Japanese learners better because as many as six or seven CTQs in one lesson with no OEQs, as is the case with *Vision Quest I Advanced* (see Figure 3) and *Polestar II* (see Figure 4), may be overwhelming for the learners. Another textbook, *Unicorn II* (see Figure 6), shows a similar tendency to start CTQs earlier and have OEQs and CTQs appear in turn throughout the text with a little more emphasis on the latter.

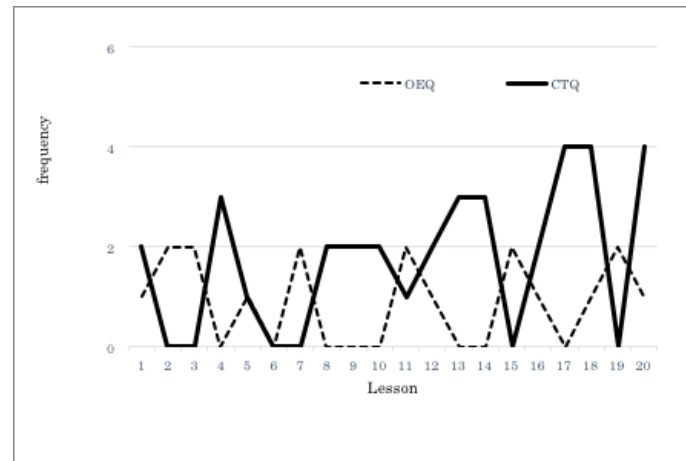


Figure 5. OEQs and CTQs in *Departure I* (EEL textbook).

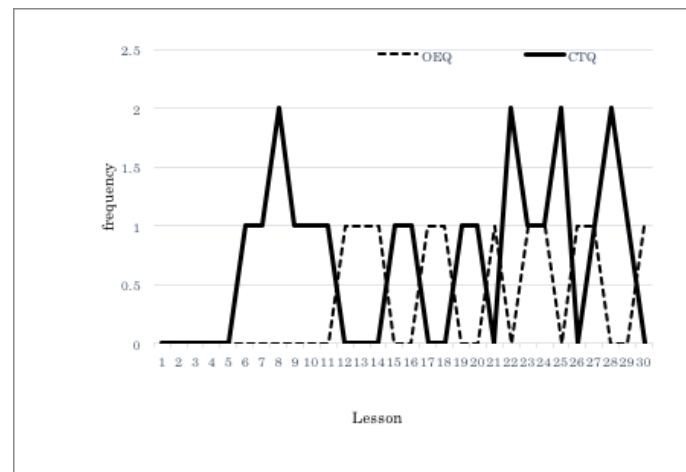


Figure 6. OEQs and CTQs in *Unicorn II* (EELL textbook).

These differences probably reflect the textbook writers' different approaches to textbook organization and instructional priorities. However, more even distributions of CTQs and OEQs throughout the textbook seem desirable in order for critical thinking to be learned more effectively.

Conclusion

Although there is no government-set minimum number or ratio of CTQs in an EEI or EEII textbook, the current textbooks do not seem to have enough CTQs. In order to fulfill the objective stated in MEXT's new Course of Study, i.e., to develop learners' CT skills, it would seem that more CTQs need to be included, with careful consideration also given to their more even distribution throughout the textbook.

However, there is a good countermeasure to this dearth of CTQs. If the teacher believes in the importance of CT and asks students, after their initial and most likely simple answers to OEQs, some follow-up questions that can encourage them to analyze the subject from different perspectives and answer with reasons, evidence, and examples, then some, if not all OEQs could be turned into CTQs. This would mitigate the lack of CTQs to some extent. The role of the teacher, therefore, is important in the instruction of EEI and EEII.

This study could also help English teachers when they are selecting EEI and EEII textbooks to use. By looking at Tables 1 and 2 as well as Figures 1 and 2, one can easily discern which textbooks are more OEQ- or CTQ-oriented and hence choose an appropriate text to fit students' levels. At least the chance of a mismatch between students and textbook could be avoided.

Future research in this area could involve qualitative analyses of EEI and EEII textbooks. It would be worth investigating what kinds of CTQs are asked in these textbooks and whether some suggestions for more effective CTQs could be made. Also, the establish-

ment of evaluation criteria for CT will be necessary, whereby students' replies to CTQs can be assessed with more validity and reliability. Thirdly, direct observation of classroom practices, that is, how the teacher is actually using these EEI and EEII textbooks to teach critical thinking, could provide a valuable insight into this issue.

Given timely and proper instructions from the teacher, better balanced and appropriate EEI and EEII textbooks, and valid evaluation criteria for CTQs, students will have a better chance to become critical thinkers.

Bio Data

Michio Mineshima holds an MA in TESL/TEFL from the University of Birmingham and currently teaches at Niigata University of Health and Welfare. His research interests include critical thinking, cooperative learning, and material writing. He has coauthored several secondary school English textbooks, workbooks, and teacher's manuals.

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Appendix A

Alphabetical List of EEI Textbooks Analysed

Atlantis English expression I. Mitchell, S., Beacall, S. Chiba, H., & Saito, A. (2014). Miyagi: Cheers.

Big dipper English expression I. Minamiide, K., Schourup, L., Lehner, D., Oguri, Y., Nishikawa, M. Mimura, K., . . . Michinaka, H. (2014). Tokyo: Suuken Shuppan.

Cosmos I English course eigo-hyogen. Takiguchi, M., Toda, Y., Ikeda, M., Tanaka, W., & Sekiguchi, A. (2014). Tokyo: Sanyuusha Shuppan.

Crown English expression I. Shimozaki, M., Matsubara, K., Imoto, Y., Iwasa, Y., Kuroiwa, Y., Kohno, T.,...Taylor, G. (2014). Tokyo: Sanseido.

Departure English expression I. Yamaoka, K., Bond, L. G., Kato, H., Miyao, H., & Imai, Y. (2014). Tokyo: Taishuukan-shoten.

Expressways English expression I. Hachimiya, T., Teshima, M., Nakamura, A., & Watanabe, N. (2014). Tokyo: Kairyudo Shuppan.

Grove English expression I. Kuramochi, S., Kawabata, K., Gyoda, I., Takonai, K., Isoda, M., Sato, M.,...Tadokoro, M. (2014). Kyoto: Bun-eido.

Mainstream English expression I. Takashima, H. (Ed.), Yamamoto, R., Onoda, S., Yada, R., Yamazaki, T., Suzuki, J.,...Zenuk-Nishide, L. (2014). Osaka: Zoshindo.

Monument English expression I. Suzuki, E., Ohashi, K., Duggan, J. J., Tate, M., Yamazaki, H., & Hijikata, Y. (2014). Tokyo: Kaitakusha.

My way English expression I. Morizumi, M., Iida, T., Iino, A., Ito, M., Shinohara, M., Tajima, M.,...Wada, T. (2014). Tokyo: Sanseido.

New favorite English expression I. Nakamura, M., Baba, Y., Okamoto, M., Kato, A., Sakuta, K., Jeffrey, S.,...Taiya, K. (2014). Tokyo: Tokyo Shoseki.

New one world expressions I. Ito, H., Ioroi, T., Koide, Y., Narita, M., Nunomura, N., Yamamori, N., & Yoshida, T. (2014). Tokyo: Kyouiku Shuppan.

Perspective English expression I. Morita, A., Atobe, S., Sato, Y., Shiozawa, Y., Sugita, M., Suzuki, Y.,...Yoffe, L. (2014). Tokyo: Daiichi Gakushuusha.

Polestar English expression I. Minton, T. D., Ashida, R., Nishikawa, S., Okano, K., & Horiguchi, K. (2014). Tokyo: Suuken Shuppan.

Screenplay English expression I. Yokoyama, H., Kaku, J., Kose, Y., Sunagawa, N., Shiratori, A., & Hara, H. (2014). Aichi: Fourin.

Select English expression I. Inoue, T., Inoue, M., Kawaguchi, E., Kashiwabara, T., & Sera, S. (2014). Tokyo: Sanseido.

Unicorn English expression I. Ichikawa, Y., Shiokawa, H., Ishii, Y., Takahashi, Y., Tanahashi, M., Hagino, S.,...Hestand, J. R. (2014). Kyoto: Bun-eido.

Vision quest English expression I advanced. Nomura, K., Yamazaki, N., Uchida, S., Shimabara, K., Takahashi, M., Caraker, R., & Smith, R. (2014). Osaka: Shinko Shuppansha Keirinkan.

Vision quest English expression I standard. Nomura, K., Yamazaki, N., Uchida, S., Shimabara, K., Takahashi, M., Caraker, R., & Smith, R. (2014). Osaka: Shinko Shuppansha Keirinkan.

Vivid English expression I. Hase, N., Akamatsu, N., Iijima, R., Sato, R., Date, M., Nishi, I.,...White, S. (2014). Hiroshima: Daiichi Gakushuu-sha.

Appendix B

Alphabetical List of EEII Textbooks Analysed

Big dipper English expression II. Minamiide, K., Schourup, L., Lehner, D., Oguri, Y., Nishikawa, M. Mimura, K.,... Michinaka, H. (2014). Tokyo: Suuken Shuppan.

Crown English expression II. Shimozaki, M., Matsubara, K., Imoto, Y., Iwasa, Y., Kuroiwa, Y., Kohno, T.,...Taylor, G. (2014). Tokyo: Sanseido.

- Departure English expression II.* Yamaoka, K., Yoshida, K., Imagawa, Y., Tsukada, Y., & Palmer, R. (2014). Tokyo: Taishuukan-shoten.
- Grove English expression II.* Kuramochi, S., Kawabata, K., Gyoda, I., Takonai, K., Isoda, M., Sato, M.,...Tadokoro, M. (2014). Kyoto: Bun-eido.
- Mainstream English expression II.* Takashima, H. (Ed.), Yamamoto, R., Onoda, S., Yada, R., Yamazaki, T., Chida, T., Miyaura, K.,...Zenuk-Nishide, L. (2014). Osaka: Zoshindo.
- My way English expression II.* Morizumi, M., Iida, T., Iino, A., Ito, M., Shinohara, M., Tajima, M.,...Wada, T. (2014). Tokyo: Sanseido.
- New favorite English expression II.* Nakamura, M., Baba, Y., Okamoto, M., Kato, A., Sakuta, K., Jeffrey, S.,...Taiya, K. (2014). Tokyo: Tokyo Shoseki.
- New one world expressions II.* Ito, H., Ioroi, T., Kaneeda, T., Koide, Y., Narita, M., Nunomura, N.,...Yoshida, T. (2014). Tokyo: Kyouiku Shuppan.
- Perspective English expression II.* Morita, A., Atobe, S., Sato, Y., Shiozawa, Y., Sugita, M., Suzuki, Y.,...Yoffe, L. (2014). Tokyo: Daiichi Gakushuusha.
- Polestar English expression II.* Minton, T. D., Ashida, R., Nishikawa, S., Okano, K., & Horiguchi, K. (2014). Tokyo: Suuken Shuppan.
- Unicorn English expression 2.* Shiokawa, H., Ichikawa, Y., Ishii, Y., Azuma, S., & Hestand, J. R. (2014). Kyoto: Bun-eido.
- Vision quest English expression II.* Nomura, K., Yamazaki, N., Uchida, S., Shimabara, K., Caraker, R., & Smith, R. (2014). Osaka: Shinko Shuppansha Keirinkan.
- Vivid English expression II.* Hase, N., Akamatsu, N., Iijima, R., Sato, R., Date, M., Nishi, I.,...White, S. (2014). Hiroshima: Daiichi Gakushuu-sha.