Creating E-Learning Material to Teach Essential Vocabulary for Young EFL Learners

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Abstract

Increasingly, larger numbers of young learners in Japanese primary schools are learning English. This expansion of Teaching English to Young Learners (TEYL) marks a major change that will affect secondary level teaching. To both address the gap in missing daily vocabulary currently observed in Japanese school textbooks and to provide primary school English teachers with an important core vocabulary, the authors created a list of the 600 everyday words most relevant to students' daily lives. The vocabulary selection procedure is outlined in this paper, as well as the initial stages in the development of an effective and enjoyable e-learning program for teaching this vocabulary to Japanese primary school children.

Keywords: *vocabulary, e-learning, TEYL, EFL, ELT, primary education, everyday words*

1   Introduction

In 2002, the Japanese Ministry of Education, Science and Culture's Course of Study guidelines included a provision, called International Understanding Education, to expand English classes into the elementary curriculum. As a result, increasing numbers of primary students are starting to learn English and this expansion of Teaching English to Young Learners (TEYL) necessitates deserves careful consideration not only of the young learners, their teachers and the material used, but the impact that these lessons will have on secondary level learning. Generally, most primary school teachers have neither the experience nor the background skills necessary for teaching English, and they need effective teaching tools that will be both successful and motivating so that these early language-learning experiences not only support TEYL but will become a basis for learning at the secondary level and beyond.

The importance of vocabulary in language learning is well documented (Schmitt & McCarthy, 1997; Read, 2000; Nation, 2001; Honig, 2001; Hayashi, 2002). It has also been shown that textbooks used in Japanese junior and senior high schools lack sufficient daily-life vocabulary (Horiuchi, 1976; Inoue, 1985; Hamano, 1989). Furthermore, theoretical and empirical research in EFL suggests that teaching essential, everyday words to elementary-aged children can be highly beneficial for EFL learners (see Kuno, 1999; Ito, 2000; Saku, 2004; Shirahata, 2004). Creating an everyday word-based learning program for primary students would not only provide beneficial vocabulary to primary students, but would fill the gap in the upper grades and provide essential core vocabulary as a basis for learning English from a young age. The purpose of this study has been to determine, with methods based on corpus linguistic research, the vocabulary that is most relevant to the young child's everyday world and to develop a prototype of an e-learning program which will provide teachers with a means to teach important vocabulary in an effective, enjoyable and rewarding way. The purpose of this interim report is to describe the procedure used in selecting the vocabulary for this TEYL material and to provide an overview of the on-going development of the e-learning program.

2   Review of the Literature

2.1   The Necessity of Complementing Everyday Words

As mentioned in the Introduction, researchers have pointed out that everyday words are not sufficiently covered in Japanese English textbooks taught in junior and senior high schools, and it is this vocabulary that is considered to be the core vocabulary of college students and college graduates (Horiuchi, 1976; Inoue, 1985: Hamano, 1989). This lack is often felt by teachers and students who go abroad for a short stay in native speakers' homes to experience daily life in English-speaking countries (Inaoka et al, 1988; Kubono et al, 1989) and the gap seems particularly evident in Japan since EFL textbooks in other countries such as Germany, France and Russia do include this type of vocabulary (Hon'ma, 1984; Mouri, 2004). Chujo et al. (1994) documented this vocabulary gap in a study which compared the vocabulary coverage of both Japanese and American textbook vocabulary over eighteen specific language activities. Hasegawa and Chujo (2004) investigated a series of three Japanese textbooks used in each of the past three decades and found that while there have been improvements in each ten-year revision, there was still a lack of everyday words necessary for survival in English. Finally, Jin'nai (2003) reported that educators in secondary schools are expecting TEYL to provide the everyday vocabulary currently not taught in Japanese secondary schools.

2.2   Vocabulary Sources: Picture Dictionaries and Loanwords

Many researchers agree that picture dictionaries are vital resources for everyday words (Inoue, 1985; Shiina et al., 1988; Matsumura, 2004). The photos and illustrations are an invaluable resource for helping students, teachers, and researchers quickly attach meaning to new terms. Picture dictionaries differ in the vocabulary and age group they target. Some address specific goals, for example: *Just Look'n Learn English Picture Dictionary* (Hochstatter, 1996) features 'the most basic words in the English language'; *The First Word Study Dictionary* (Turton, 2001) targets 'the essential words found in Year One teaching materials'; *The Basic Oxford Picture Dictionary* (Gramer, 2003) provides 'language that is essential for the development of the beginning learner's survival skills'; and *The Sesame Street Dictionary* (Hayward, 2004) emphasizes 'words that appear frequently in beginning reading books and in a young child's everyday world'.

Some picture dictionaries are designed for young adults and adults who are learning English as a foreign language and they contain 'vocabulary that is most relevant to the everyday experience of adult and young adult learners' (*The Basic Oxford Picture Dictionary*, 2003), and cover subjects ranging from everyday life to specific interests such as computers, jobs, sports, etc. (*Longman Photo Dictionary American English*, 2003). Others are designed for various age level learners ranging from age three to adult. For example, they will help 'youngsters under five years old' (*The Reader's Digest My World A First Picture Encyclopedia*, 2002), 'primary-age children' (*Smile Picture Dictionary*, 1999), 'from age three to age eight' (*The Sesame Street Dictionary*, 2004), 'children aged five years upwards' (*Oxford First Dictionary*, 2002), 'beginning English learners' (*Just Look'n Learn English Picture Dictionary*, 1996), 'low-beginning adult and young adult students, including literacy-level learners' (*The Basic Oxford Picture Dictionary*, 2003), and 'adult learners of English' (*Longman Photo Dictionary American English*, 2003).

Because of the range in targeted ages, it is important to ensure that any vocabulary selected meets the targeted grade level. For this purpose, *The Living Word Vocabulary* (Dale & O'Rourke, 1981) is useful for determining the grade level at which the central meaning of a word can be readily understood. This word list includes more than 44,000 items and each presents a percentage score on those words or terms familiar to students in grade levels 4, 6, 8, 10, 12, 13, and 16. Also *Basic Elementary Reading Vocabularies* (Harris & Jacobson, 1972) is useful for determining the grade levels of reading vocabulary ranging from pre-primer to the sixth grade.

In addition to using picture dictionaries as a resource, the Japanese language contains a large collection of loanwords from English, called *Katakana English,* which can also be useful in language acquisition. While these loanwords have been adopted into the Japanese language system, most of the original sounds, grammar, and meaning have been changed (Brown & Williams, 1985; Ando, 1997[a,b]).

Simple examples of these are "purin" and "konkuri", which are direct transcriptions of the English pronunciations of "pudding" and "concrete", and "mansion (manshon)" and "escape (esukeepu)", whose meanings have been changed respectively from "a large beautiful house" to "apartment house or condominium" and from "to get away from something bad" to "to cut class". Quite a few foreign words are reported to be found in elementary school children's vocabulary (Yoshimura, 2003), and are found to contribute to building Japanese college students' awareness or greater familiarity with English words (Brown & Williams, 1985; Oosaki, 2004; Yabuuchi, 2004). Because of their prevalence in Japanese, in a teaching context it is important that (1) students are made aware of the English pronunciation of the word, and (2) that students are also aware of the cognates of loanwords which can easily help them learn additional, similar words (Yoshida, 1978), for example, appointment ("apo"), mistake ("misu"), and roller coaster ("jetto kousutaa: jet coaster"). Thus when used effectively, loanwords can aid students in vocabulary development.

2.3 Vocabulary Selection Criteria

There are two ways to select specialized or technical vocabulary from databases: 'frequency and range', or statistical application. The more conventional method of using 'frequency' (reasonable frequency of occurrence) and 'range' (encompassing a wide range) as discussed by Nation (2001) was used to create an ESP vocabulary list by Chujo & Nishigaki (2003) and Chujo & Genung (2003) and was shown to be effective.

Based on Nation's suggestion that "one way of making a technical vocabulary is to compare the frequency of words in a specialized text with their frequency in a general corpus" (2001:18), Chujo & Utiyama (2004) and Utiyama et al. (2004) proposed using multiple statistical measures for comparing these two kinds of frequencies and for extracting various levels of specialized lists. Such measures include 'log-likelihood ratio' or LLR (Dunning, 1993), and 'mutual information' or MI scores (Church & Hanks, 1989). They suggested that LLR, for example, identifies appropriate level words for intermediate-level or sub-technical vocabulary, and MI for upper-intermediate-level or technical vocabulary. Currently, LLR and MI are the two most commonly used statistical measures in the field of corpus linguistics.

2.4 Learning Vocabulary

It is clear that vocabulary is an essential component to language learning, and we have the means to create specialized vocabulary lists for specific purposes. But once we have a list of words, how best are they learned? One concern in the presentation of specialized vocabulary is that many vocabulary-teaching methods are considered boring (Krashen, 1989). One notable exception is the CALL-based vocabulary teaching material developed by Takefuta (1999), which teaches new words in twelve steps. Her material incorporates a combination of a variety of exercises that promotes effective learning and long-term retention, and at the same time keeps its tasks enjoyable. Taking advantage of the possibilities inherent in computer assisted language learning, the authors incorporated a variety of exercises such as those used by Takefuta (1999), as well as original vocabulary teaching methods previously published (Chujo, 2002; Chujo, et al, 2002; Chujo, et al, 2003; Chujo, et al, 2004; Nishigaki, et al, 2004[a]; Nishigaki, et al, 2004[b]) in order to create a prototype software for this project. Building on these established parameters allows us to better verify the efficacy of this study.

2.5 Summary

From a review of the literature, we understand that (1) there is a lack of important everyday vocabulary taught in Japanese junior and senior high schools; (2) Japanese secondary level educators expect that TEYL education at the elementary level will address this lack; (3) this vocabulary exists in readily available picture dictionaries, many of which are geared to young learners, and in katakana loanwords from English; (4) to date there have been no known studies which have used objective or statistical means to extract or create a vocabulary of everyday words; (5) two methodologies exists for creating this kind of vocabulary list; (6) resources exist for grading vocabulary; (7) existing CALL

programs may serve as a basis for creating an effective and enjoyable way to learn vocabulary; and (8) currently there are no known effective, inexpensive and easy to use e-learning material for TEYL vocabulary development.

3   Creating Everyday Vocabulary

Twenty picture dictionaries for both native speaking children and ESL or EFL learners published by major overseas publishers in the U.S., England, Australia, Singapore and Hong Kong and which contain more than 750 words were collected. They are listed in the **Appendix**. They were analysed according to the following procedure:

1) The words contained in each dictionary were manually typed or scanned onto a master list, and proofread twice. Twenty dictionaries provided twenty master lists. In total, 22,781 words were collected.

2) Next, each word list was lemmatized, i.e. inflectional forms such as *cat-cats* and *go-goes-went-gone-going* were listed under the base word forms of *cat* and *go*, and proper nouns such as *January*, *Sunday*, *Christmas*, and *French* [fry] and numerals such as *two*, *ten*, and *seventy-five* were excluded from each list manually. (For the justification on why this is necessary, and for more information on creating specialized vocabulary through statistical analysis, please see Chujo, 2004.) This process resulted in a total of 4,742 different words. The largest list, *Word by Word* (Molinsky & Bliss, 1995) was made up of 2,564 words and the smallest list, *Ladybird Picture Dictionary* (Taylor, 2004), was composed of 614 words.

In picture dictionaries, each individual word is presented with a picture, usually without a context or sentence. An analysis of picture dictionary data therefore would not (and did not) produce a normal frequency list as would be obtained from an analysis of text data. Because of this, the criteria of 'frequency of occurrence' often used in studies or multiple statistical measures were not applicable. Instead, 'range' was used as the criteria for selecting words. Thus, the next step in the process was:

3) All twenty lists were compared for overlap to determine range. Words that appeared in all 20 dictionaries were referred to as 'range 20', and from the total 4,742 words, there were 40 in this category. 'Range 19' contained 49 words, 'range 18' had 82 words, 'range 17' included 63 words, 'range 16' had 78 words, and 'range 15' contained 80 words. Range 19 and 20 words are shown below. All vocabulary words appearing in 'range 10' to 'range 20' totalled 801. The 4,742 words were now refined further to these 801.

	Range 19						Range 20		
brother	bread	night	school	star		apple	chicken	hand	orange
sister	butterfly	newspaper	shoe	tree		arm	clean	head	paper
bag	cat	ship	telephone	knee		baby	cup	hot	pencil
ball	elephant	banana	television	rain		bed	dog	ice	shirt
clock	sheep	bear	water	cake		book	dress	leg	skirt
fork	door	cream	mouse	glass		boot	egg	milk	sock
knife	shop	ear	train	grass		bus	finger	money	table
paint	window	eye	circle	sad		car	fish	mouth	toe
toy	house	hair	ruler	park		chair	flower	neck	tooth
umbrella	chest	sandwich	square			cheese	foot	nose	triangle

While English classes for students in grades 1-3 exist in Japanese schools, the targeted learner levels for this project are the fourth, fifth and sixth grades. Since there are expectations that the vocabulary taught at the primary level will augment vocabulary taught in junior high school, validating the overlap and connection to junior high school vocabulary is more easily accomplished if upper elementary grades are targeted first.

4) As this is an interim report to describe the development of this on-going project, please note that the steps from this point are currently in progress. In order to select the most appropriate words for the targeted age level children from the above 801 words, the Dale and O'Rourke (1981) and Harris and Jacobson (1972) data will be used to check the grade level of each word.

Any vocabulary word exceeding a fourth, fifth or sixth grade level will be excluded, but words graded below the fourth grade will be kept.

5) Finally, to aid retention, related words will be organized into twenty category groups with headings such as 'At School' 'On the Move' or 'On the Farm,' and full-color photos showing the objects represented by these words to make them easier to remember will be prepared. Only five words will be chosen for each grouping at each grade level (4th, 5th, and 6th), and accordingly the total number of words will be reduced to 600. The inclusion or exclusion process of words at this point has not been determined, although to work within the parameters of the groupings (five in each category at each grade level), it will be necessary to eliminate some words. Further developments (see Section 5) will include an analyses for cultural influences and children's spoken data. It may be that either or both of these analses will determine the factors for final word selection.

4   Creating E- Learning Software

E-learning material is being developed to aid Japanese elementary school teachers who do not have an English teaching certificate and but will be teaching English in their classes under current government guidelines. In many cases, those teachers are not confident either with their English ability or with their English teaching skills. This material is therefore being specifically designed for this particular setting, and is accordingly geared to group instruction rather than individual study. What follows is a description of a prototype. The program is currently under development.

4.1 Frame Work for Learning

The instructional framework used in the e-learning material to teach the selected 600 target words is outlined in Table 1. It is designed to integrate theories of learning, developmental psychology, information processing, second language acquisition, and EFL education to ensure the comprehension and long-term retention of target words. The major principles considered in developing Japanese *TEYL* material were (1) to learn the target words in an appropriate classroom instructional process, which is presentation, practice and performance, (2) to create an appropriate setting in which the target

Table 1 Learning Stages and Steps

STAGE 1 Presentation
Step 1 Choose a Word Category to Learn
Step 2 Overview Target Words
STAGE 2 Practice
Step 3 Combine Pronunciation and Meaning
Step 4 Consolidate Comprehension
STAGE 3 Performance
Step 5 Listen and Comprehend
Step 6 Use Target Words

words are presented in context and not in isolation, (3) to give all instructions in simple and short English sentences with a way to make it understandable in context, (4) to have learners apply their knowledge of katakana English, i.e. Japanese words borrowed from English along with the Japanese sound system such as 'rajio' for 'radio', (5) to present the target words with its correct spelling, (6) to build a firm link between the pronunciation of a target word and its meaning, and (7) to expose learners to the target words repeatedly.

4.2 Stages and Steps for Learning

In the program, learners study target words through three 'Stages', i.e. 'presentation', 'practice' and 'performance' as is shown in Table 1. Stage 1 aims to present the target words; Stage 2, to practice to construct and consolidate sound chains between pronunciation and its meaning; and Stage 3, to confirm if they comprehend the target words and can use them.

Figure 1 Categories

4.2.1 Stage 1

As is also described in Table 1, the three stages consist of two different types of activities called 'Steps'. In the first step, learners first select a category (Figure 1). Then they are introduced to five target words (Step 2). As is shown in Figures 2, learners look at untagged photos of the target words, for example, a collage of photos seen here. In Step 2, they obtain an overview of the objects they are going to learn, and expectations to know and learn them are awakened.
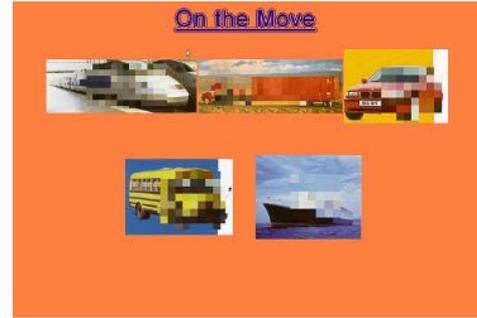
Figure 2 Photos of the Target Words

4.2.2 Stage 2

In Step 3 learners hear the sound of each word within a dialogue by clicking of the photo they see. They will hear 'What's this? - It's a train.' with its full photo. In this step, learners build sound connections between the target object and its pronunciation. It is notable that the target word is introduced within a dialogue, not in isolation. Furthermore, the spelling of the target word is also presented with the target object. Currently, government guidelines discourage exposing students to letters and spellings. Many researchers and teachers, however, believe a certain amount of exposure to alphabets and spelling meets learners' interests in knowing a language.

   In Step 4, they see different ambiguous photos in different positions from the previous steps. When they click a photo, they can see a full photo of the target word and hear the simple conversation 'What's this? It's a train' again. In this step, students can strengthen and consolidate the links between the target object and its pronunciation.

4.2.3 Stage 3

In Step 5, learners view untagged photos of the same target objects, and they hear a dialogue 'What's this? – It's a train.' They must now choose the correct object which matches the conversation they heard. This step allows learners to check their comprehension of the words they have learned in the previous steps. In Step 6, students hear a question 'What's this?' A target object appears in the screen for a second and then disappears. After they see the photo, they are supposed to answer 'It's a train.' When they click the button at the bottom of the screen, they see the object for a second again and hear the model conversation 'What's this? - It's a train'. At this step, learners have a chance to speak the target word. If they want to hear the question and answer it again, they can click a 'try again' button.

   The variety of the 'question and answer' pattern used in the activities are fundamental combinations such as 'What do you see? - I see…?' 'What do you like? – I like…' 'What do you want? – I want…' 'What do you have – I have…' etc. Generally, most students have learned these set phrases in class; therefore they can review and consolidate these expressions. They can also expand their knowledge of expressions using the new words they learn.

5   Further Developments for this Project

This project will be expanded as follows:
1) Ten additional picture dictionaries published in Japan will be compared with the twenty picture dictionaries used in this study in order to determine what cultural influences might exist. For example, Australian or British picture dictionaries may not include "chopsticks" or "sushi" as everyday vocabulary words, whereas this would be useful word in a Japanese context.
2) The specialized spoken vocabulary of children will be compared with the vocabulary list created in this study from the picture dictionaries. This will be done by using a combination of various statistical measures such as log-likelihood ratio and mutual information from the following four children's spoken data sources:
   a) CHILDES (Child Language Data Exchange System)

    b) COLT (The Bergen Corpus of London Teenager Language)
    c) PoW (The Polytechnic of Wales Corpus)
    d) Moe, et al (Vocabulary of First-Grade Children, 1982)
    The extracted specialized vocabulary from the corpora will be used to further refine the 600-word base, and a new method to integrate the criteria of 'range' and other statistical measures will be developed to create the most optimal lists of everyday words to incorporate the previously extracted picture dictionary words, katakana English words, spoken data and culturally appropriate words from Step 1 above.

3) In addition to grading vocabulary with native-speaker word familiarity data such as Dale and O'Rourke (1981) and Harris and Jacobson (1972), grading will also be compared to Japanese secondary textbook vocabulary, and Japanese loanword lists from English.

4) Finally, the words in this study have been classified into categories by grade-appropriate concepts such as animals, foods, school, nature, and the home environment. These categories will be revised for a second edition of the e-learning program.

6   Conclusion

In this study, 600 words were carefully selected from twenty picture dictionaries using an objective method in order to create a list of everyday vocabulary which can be used by teachers of English in Japanese elementary schools, and which forms the basis of a software program targeted for that setting. This prototype e-learning material can be modified to fit learners' interests, needs, language level, and developmental stages and can be modified to meet the needs and demands of classroom teachers within the framework of Japanese public education system.

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References

Ando, K. 1997[a]. Katakana eigo to eigo kyouiku (1) [Katakana English and English education (1)]. *Nagoya Keizai Daigaku Jinbunkagakuronshuu*, *60*, 1-18.

Ando, K. 1997[b]. Katakana eigo to eigo kyouiku (2) [Katakana English and English education (2)]. *Nagoya Keizai Daigaku Jinbunkagakuronnshuu, 61*, 1-23.

Brown, J. B. and C. J. Williams. 1985. Gairaigo: A latent English vocabulary base? *Tohoku Gakuin University Review: Essays and Studies in English Eibungaku*, *76*, 129-143.

Chujo, K., S. Hasegawa and Y. Takefuta. 1994. Nichibei eigo kyoukasho no hikaku kenkyuu kara [A comparative study on English textbook vocabulary in Japan and the U.S.]. *Gendai Eigo Kyouiku, 29* (12), 14-16.

Chujo, K. 2002. Development of CD-ROM material for teaching TOEIC test vocabulary to beginning-level students. *JACET Summer Seminar Proceedings, 2,* 40-44.

Chujo, K., K. Shiina and C. Nishigaki. 2002, December. Development of a CALL system to teach vocabulary for the TOEIC test. Paper presented at the AILA (Association Internationale de Linguistique Appliquée) Conference, Singapore.

Chujo, K. and M. Genung. 2003. Vocabulary-level assessment for ESP texts used in the field of industrial technology. *English Teaching*, *58* (3), 259-274.

Chujo, K. and C. Nishigaki. 2003. Bridging the vocabulary gap: From EGP to EAP. *JACET Bulletin, 37,* 73-84.

Chujo, K., A. Yamazaki. and T. Ushida. 2003. Bijuaru beishikku niyoru TOEIC-yoo goiryoku yoosei sofutowuea no shisaku (2) [The development of English CD-ROM material to teach vocabulary for the TOEIC test (utilizing Visual Basic): Part 2]. *Journal of the College of Industrial Technology*, *Nihon University*, *36*, 43-53.

Chujo, K., T. Ushida, A. Yamazaki, M. Genung, A. Uchibori and C. Nishigaki. 2004. Bijuaru beishikku niyoru TOEIC-yoo goiryoku yoosei sofutowuea no shisaku (3) [The development of English CD-ROM material to teach vocabulary for the TOEIC test (utilizing Visual Basic): Part 3]. *Journal of the College of Industrial Technology*, *Nihon University, 36*, 29-43.

Chujo, K. 2004. Measuring vocabulary levels of English textbooks and tests using a BNC lemmatised high frequency word list. In J. Nakamura, N. Inoue and T. Tabata (Eds.) *English corpora under Japanese eyes* (pp.231-249). Amsterdam: Rodopi.

Chujo, K. and M. Utiyama. 2004. Toukeiteki shihyoo wo shiyoushita tokuchougo chuushutsu ni kansuru kenkyu [Using statistical measures to extract specialized vocabulary from a corpus]. *KATE Bulletin*, *18*, 99-108.

Church, K. W. and P. Hanks. 1989. Word association norms, mutual information, and lexicography. *Proceedings of ACL, 89*, 76-83.

Dale, E. and J. O'Rourke. 1981. *The living word vocabulary*. Chicago: World Book-Childcraft International, Inc.

Dunning, T. E. 1993. Accurate methods for the statistics of surprise and coincidence. *Computational Linguistics*, *19* (1), 61-74.

Hamano, M. 1989. Motto nichijou seikatsu goi wo [More everyday words!]. *Gendai Eigo Kyouiku, 26* (9), 6-7.

Harris, A. J. and M. D. Jacobson. 1972. *Basic elementary reading vocabularies*. New York: The Macmilan Company.

Hasegawa, S. and K. Chujo. 2004. Gakushuu shidou youryou no kaitei ni tomonau gakkou eigo kyoukasho no jidaiteki henka [Vocabulary size and efficacy within three serial JSH English textbook vocabularies created in accordance with revised Course of Study guidelines]. *Language Education & Technology*, *41*, 141-155.

Hayashi, H. 2002. *Eigo no goi shidou* [Teaching English vocabulary]. Hiroshima: Keisuisha.

Honig, B. 2001. *Teaching our children to read*. Thousand Oaks, CA: Corwin Press, Inc.

Hon'ma, D. 1984. Goi no chousa to bunseki [Survey of vocabulary and its analysis]. In Kyokasho Kenkyuu Sentaa (Ed.) *Kyoukasho kara mita kyouiku katei no kokusai hikaku 6: eigoka-hen* [Comparison of educational curriculum with other countries' textbooks 6: English] (pp.193-198). Tokyo: Kyoukasho Kenkyuu Sentaa.

Horiuchi, K. 1976. Teiji junjo to shiyou hindo [The order of presentation and frequency of occurrence]. *Gendai Eigo Kyouiku*, *13* (6), 4-5.

Inaoka, N., Y. Kato, M. Kubono, N. Kumai, H. Tsuji, Y. Nakamura and K. Hasegawa. 1988. Chuukou renkei wo toraeta jishu kyouzai no kaihatsu: Tsukukoma picture dictionary no sakusei (1) [Developing student-initiated teaching material to relate junior high school education to senior high school education: The development of the Tsukukoma picture dictionary (1)]. *Tsukuba Daigaku Fuzoku Chuugaku Koutougakkou Kenkyuu Houkoku*, *27*, 131-146.

Inoue, N. 1985. Eibei youji muke kyouiku tosho no goi chousa [A survey on words used in British/American educational books for small children]. *Teikoku Gakuen Kiyou, 11*, 109-126.

Ito, K. 2000. *Shougakkou eigo: redii. gou* [Elementary school education. Ready? Go!]. Tokyo: Gyousei.

Jin'nai, Y. 2003. Shougakkou eigo katsudou wo ikasu shou-chuu renkei no arikata [How to relate elementary school education to junior high school education to make the best use of English activities at elementary school]. *The 29th Japan Society of English Language Education Conference Proceedings*, 374.

Krashen, S. 1989. We acquire vocabulary and spelling by reading: Additional evidence for the input hypothesis. *Modern Language Journal*, *65*, 43-58.

Kubono, M., N. Kumai, H. Tsuji, K. Hasegawa, N. Inaoka, Y. Kato and Y. Nakamura. 1989. Chuukou renkei wo toraeta jishu kyouzai no kaihatsu: Tsukukoma Picture dictionary no sakusei (2) [Developing student-initiated teaching material to relate junior high school education to senior high school education: The development of the Tsukukoma picture dictionary (2)]. *Tsukuba Daigaku Fuzoku Chuugaku Koutougakkou Kenkyuu Houkoku*, *29*, 113-158.

Kuno, Y. 1999. *Konna fuu ni hajimete mitewa? Shougakkou* eigo [How about starting elementary school English like this?]. Tokyo:Sanseido.

Matsumura, T. 2004. Eigo seikatsu goi shidou no jissai [The practical side of teaching English everyday words]. *The 30th Japan Society of English Language Education Conference Proceedings*, 262-265.

Moe, A., C. Hopkins and T. Rush (1982). *Vocabulary of first-grade children*. Springfield: Charles C Thomas Publisher.

Mouri, K. 2004. *Eigo no goi shidou: Anote konote* [Teaching English vocabulary: This way and that]. Hiroshima: Keisuisha.

Nation, P. 2001. *Learning vocabulary in another language*. Cambridge: Cambridge University Press.

Nishigaki, C., K. Chujo, N. Takahashi and O. Nishikawa. 2004[a], March. Creating a vocabulary CALL program for TOEFL. Paper presented at a meeting of the TESOL 2004 Convention, Long Beach, CA.

Nishigaki, C., K. Chujo, N. Takahashi, O. Nishikawa and T. Hitoshi. 2004[b], May. The Development of CALL material for vocabulary teaching. Paper presented at the meeting of the 4th International Symposium on ELT in China, Beijing.

Oosaki, S. 2004. Katakana eigo no bunseki to shidouhou no kenshou [The analysis of katakana English and verification of its teaching method]. *The 30th Japan Society of English Language Education Conference Proceedings*, 262-265.

Read, J. 2000. *Assessing vocabulary*. Cambridge: Cambridge University Press.

Saku, M. and K. Honda. 2004. Shougakkou eigo kyouiku ni okeru goi kyouzai no kaihatsu ni mukete [Toward developing vocabulary teaching material for English education at elementary school]. *The 30th Japan Society of English Language Education Conference Proceedings*, 598-599.

Schmitt, N. and M. McCarthy. 1997. *Vocabulary, description, acquisition and pedagogy*. Cambridge: Cambridge University Press.

Shiina, K. K. Chujo and Y. Takefuta. 1988. Youji jidou muke etangoshuu no bunsekiteki kousatsu [The analytical observations of English picture dictionaries for young children]. *JASTEC Kenkyuu Kiyou, 7,* 17-27.

Shirahata, T. 2004, July. Nihon no kodomo ni totteno eigo kyouiku towa [English education for children in Japan]. Paper presented at the 42nd Japan Association for Language Education and Technology Conference, Hakata, Japan.

Takefuta, J. 1999. Development of a vocabulary teaching system: Leading to a higher overall English proficiency. *Language Laboratory, 36,* 97-116.

Utiyama, M., K. Chujo, E. Yamamoto and H. Isahara. 2004. Eigokyouiku no tameno bunya tokuchou tango no sentei shakudo no hikaku, [A comparison of measures for extracting domain-specific lexicons for English education]. *Journal of Natural Language Processing, 484,* 165-197.

Yabuuchi, T. 2004. Eitango shinmitsudo chousa no kekka to sono ouyou [Results of the English word familiarity research and implication for further study]. *LET Kansai Shibu Shunki Kenkyuu Taikai Happyou Youkou.* (http://www.let-kansai.org/).

Yoshida, M. 1978. The acquisition of English vocabulary by a Japanese-speaking child. In E. M. Hatch (Ed.) *Second Language Acquisition* (pp. 91-100). New York: Newbury House.

Yoshimura, H. 2003. Kouritsu shougakkou jidou no eigo no moji ya tango ni kansuru jyuyoo teki chishiki [An investigation into the extent of Japanese children's receptive knowledge of English letters and words]. *KATE Bulletin, 17,* 101-112.

Appendix   List of Picture Dictionaries

No	Title	Author	Publisher	Country	Year
1	The Longman Picture Dictionary American English	Ashworth, J. & Clark, J.	Pearson Education Ltd.	Harlow, Essex, England	1993
2	Smile Picture Dictionary	Barraclough, C.	Macmillan Heinemann	Oxford, UK	1999
3	Longman Children's Picture Dictionary	Graham, C.	Longman Asia ELT	Quarry Bay, Hong Kong	2003
4	The Basic Oxford Picture Dictionary (2nd ed.)	Margot, G. F.	Oxford University Press	New York, US	2003
5	The Oxford Picture Dictionary for the Content Areas	Kauffman, D. & Apple, G.	Oxford University Press	New York, US	2000
6	The Oxford Picture Dictionary for Kids	Keyes, R. J.	Oxford University Press	New York, US	1998
7	Scholastic First Dictionary	Levey, S. J.	Scholastic Inc.	New York, US	1998
8	Word by Word Primary phonics picture dictionary	Molinsky, J. S. & Bliss, B.	Pearson Education Ltd.	White Plains, NY	2000
9	Word by Word	Molinsky, J. S. & Bliss, B.	Prentice Hall Regents	Englewood Cliffs, New Jersey, US	1995
10	Longman Photo Dictionary of American English	Summers, D. et al.	Longman	Harlow, Essex, England	2003
11	First Word Study Dictionary	Turton, N.	Learners Publishing Pte Ltd.	Singapore, Godown	2001
12	My World A First Picture Encyclopedia	Picthall, C. & Gunzi, C.	Reader's Digest Children's Publishing Inc.	Pleasantville, NY	2002
13	The Sesame Street Dictionary	Hayward, L.	Random House	New York, US	2004
14	My Big Word Book	Priddy, R. et al.	Priddy Bicknell	New York, US	2002
15	Picture Dictionary	Taylor, G.	Ladybird Books Ltd.	London, UK	2004
16	First Picture Dictionary	Oliver, A.	Hinkler Books	Dingley, Victoria, Australia	2003
17	Just Look'n Learn ENGLISH Picture Dictionary	Hochstatter, D.	Passport Books	Lincolnwood, IL, US	1996
18	Disney My First 1000 words	Feldman, T.	Disney Press	New York, US	2003
19	Disney Picture Dictionary	Feldman, T. & Benjamin, A.	Disney Press	New York, US	2003
20	Oxford First Dictionary	Goldsmith, E.	Oxford University Press	Oxford, UK	2002