Does the Presence of High-Frequency Loanwords Affect Accuracy of Vocabulary Assessment?

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Abstract

Vocabulary assessment plays a crucial role in evaluating language proficiency. In the context of Japanese learners of English, recent studies have explored the impact of high-frequency loanwords, originating primarily from English, on vocabulary tests. Loanwords, distinct from cognates, present unique challenges due to their diverse origins and potential semantic shifts. This study aims to quantitatively assess the influence of loanwords on vocabulary assessment tools used in the *Four Skills* course. The study analyzes the *Four Skills* Word List (4SWL), comparing it against the Balanced Corpus of Contemporary Written Japanese to identify loanwords. Data is collected through the Four Skills Vocabulary Assessment Test administered to Japanese native speakers. However, statistical analyses indicate no significant difference in correct answer rates or difficulty levels between loanword and non-loanword items, suggesting loanwords do not substantially affect test performance. Despite some limitations, including potential cheating and variations in test conditions, the study provides reassurance regarding the robustness of the *Four Skills* vocabulary tests in the presence of loanwords. Further research opportunities are identified, such as exploring the impact of script variations in answer options and comparing loanword accuracy in different test formats.

語彙評価は言語能力の評価において重要な役割を果たしています。英語を学ぶ日本人の文脈において、最近の研究では主に英語起源の高頻度の外来語が語彙テストに与える影響が探究されています。外来語は同源語とは異なり、その多様な起源と可能性のある意味の変化から独自の課題を提供します。本研究の目的は、Four Skills コースで使用される語彙評価ツール

における外来語の影響を定量的に評価することです。研究では Four Skills Word List（4SWL）を分析し、それを現代日本語のバランスのとれたコーパスと比較して外来語を特定します。データは、日本の母語話者に実施された Four Skills Vocabulary Assessment Test を通じて収集されました。しかし、統計分析の結果、外来語と非外来語の項目間に正答率や難易度の面で有意な差は見られず、外来語はテストの実施において実質的な影響を与えていないことが示唆されます。潜在的な不正行為やテスト条件の変動などのいくつかの制約が存在するものの、本研究は外来語の存在下における Four Skills 語彙テストの頑健性についての安心感を提供しています。さらなる研究の機会が特定されており、例えば回答オプションの表記の変化が与える影響や異なるテスト形式における外来語の正確さの比較などが含まれます。

Background

Loanword influence on vocabulary size testing

Research has shown that vocabulary size is an important factor in measuring proficiency with a language (Nation, 2006). This means reliable measurement of a learner's total vocabulary size is a useful tool for assessment of both proficiency and progress. A number of tests are currently available, with some of the most popular being based on the Vocabulary Size Test (Nation & Beglar, 2007), the Vocabulary Levels Test (Nation, 1990) and self-reporting check tests (Meara & Buxton, 1987). However, these tests all have various limitations, one of which is the influence of cognates. Cognates are defined as words in different languages that share an etymological root in a common precursor language. Meara, Lightbown and Halter (1997) found that a high proportion of cognates in a vocabulary test resulted in higher scores compared with versions of the test with no cognates.

In Japanese, there is a recent trend in research to treat loanwords from English in a similar way. However, there are some significant differences between loanwords and cognates. Most notably, loanwords do not share a common precursor. For example, the English word 'brother' and the German word 'bruder' share an Indo-European root and would be classified as cognates. Loanwords, on the other hand, are words from other languages that have been adopted into regular use. An example of such a loan word in Japanese would be チョコレート ('Chocolate'). English has had a considerable impact on the Japanese language for a long time and has been the primary source of loanwords in Japan since the end of the Second World War (Daulton, 2015). This is not to say that these words are always directly imported into the language. Often the words will undergo considerable semantic shift ('smart' became スマート meaning slim or slender) or in some cases be

repurposed into new words with exclusive Japanese usage ('Galapagos' was used as ガラパ ゴス to describe Japanese style mobile telephones and then subsequently any globally available item that has a unique design or usage in Japan). Indeed, Kay (1995) described this versatility as one of the factors behind the uptake of English loanwords. It should be noted that not all high frequency loanwords are derived from English. A notable example would be アルバイト ('part-time work') derived from the German word *arbeit* ('work').

Daulton (2004) studied the proportion of common English words with one or more loanword equivalents in Japanese. He proposed that the rate of English words with Japanese loanword equivalents approached 50% at some high frequency levels. It is this combination of high usage, flexibility and visibility that suggests that Japanese students of English may be able, whether conscious or not, to infer the meaning of English words by drawing on their usage as loanwords in Japanese. Beglar (2010) found unusual discrepancies in tests through a Rasch based validation. It appears that the presence of even a single loanword at a high frequency band test was enough to cause a marked drop in mean difficulty. More recently Allen (2019b) suggests that even the presence of loanwords in different scripts such as katakana, may result in an over-estimation of student vocabulary knowledge in vocabulary tests. If this is the case, it would have significant implications for both teaching and testing English vocabulary in Japan. However, research into potential interference for Japanese learners of English is still a fairly under-researched area (Allen 2019a).

Four Skills word lists

The Kyushu Sangyo university (KSU) *Four Skills* course uses an 800-word vocabulary set (divided into 20 lists of 40 words) as a basis for vocabulary testing. The list is regularly updated to ensure word relevance, but list analysis does not seem to include assessment for loanwords (Taylor, 2021). In order to ensure the effectiveness of these lists, it is recommended that the presence and potential influence of loanwords be determined.

Aims

The overall objective of this research is to provide quantitative information regarding the influence of loanwords that can be used to adapt vocabulary assessment tools for the *Four Skills* course. To do this, the study aims to determine the proportion of test items that are

loanwords and test whether the presence of these words has an effect on student test results. The study will do this through the following objectives:

1) Determine the proportion of items on the word list that have high frequency loanword equivalents in Japanese.

2) Evaluate, using the current online vocabulary test, whether students identify loanwords (LW) more accurately than words without a loanword equivalent (NLW).

3) Based on observed differences, propose recommendations for modifications to the testing materials.

Sampling and Methods

Loanword frequency assessment

The number of loanwords present in the *Four Skills* Word List (4SWL) was determined through the method outlined in Allen (2019c). The full vocabulary list is divided into two main sections of 400 words, to be studied separately over two semesters. Each section is then further sub-divided into ten lists of forty words. For this assessment, the full 4SWL was analysed as a single list, without differentiating between semesters.

The 4SWL was compared against the Balanced Corpus of Contemporary Written Japanese (BCCWJ; Maekawa et al., 2014; National Institute for Japanese Language and Linguistics, 2013). This corpus was selected for a number of reasons. Firstly, it categorises words by location of origin, so loanwords originating outside of Japan can be clearly identified. Additionally, each loanword in the BCCWJ includes the English word it is derived from. This information allows a list of target words to be easily categorised through a spreadsheet. The BCCWJ is also freely available online and can be downloaded easily in a .tsv format, which adds a great deal of convenience.

Working from the full BCCWJ, a list of loanwords was extracted and cross referenced with the 4SWL through a VLOOKUP formula in Microsoft Excel. This fed through to a table of all 4SWL words and any applicable loanword matches. Any words without matches were removed from the table, giving a final list of 4SWL target words each with an associated loanword and its frequency data from the BCCWJ.

The Four Skills vocabulary assessment test (4ST)

The 4ST is a series of online vocabulary assessment tools for use with the *Four Skills* course. There are two different categories, Completion and Translation. Each category assesses knowledge of 200 words over a series of 20 tests, 10 in each semester. The tests are available through the KSU Moodle portal. Students are provided with a list of 400 words at the beginning of each semester (Appendix B). The words are further divided into 10 numbered lists of 40 words. The students are aware of which list will be assessed each week, but the students are not told which 10 words will be selected from the list beforehand. The word lists include the target words and their word type, but do not include any definitions or Japanese translations. Students are expected to study the word lists as part of their homework. Students may study the words in any manner they choose, but are required to demonstrate written evidence of practice each week as submitted homework. Students are encouraged to find translations of the words as part of the homework.

The Completion test involves a cloze question and a multiple-choice component. Students are presented with a cloze sentence in English:

We saw _____ animals during the safari.

and a drop-down box with choice of 10 words or phrases in Japanese. Students are required to type the appropriate English word to complete the cloze sentence, and select the matching Japanese word from the list. Misspelled words are graded as an incorrect answer. Students must get both parts correct to receive a full mark (10) for the question. Each test is graded out of a total of 100 points.

The Translation test involves writing an English translation of a provided Japanese sentence. However, the accuracy of the Translation test was not a target of this research and so was not included in the data.

Data was collected from thirty-five Japanese native speaker participants enrolled in the *Four Skills* course at KSU. The sample data was taken from actual in-class tests by *Four Skills* students in two different classes. To avoid interfering with assessments for courses currently in progress, the data from the first semester course (*Four Skills I*) was used. 10 tests were given over a period of 10 weeks. Each week, students were provided with a list of 40 possible words that the following week's test would be drawn from.

The tests were administered in classes. Students predominantly took the test on their personal smartphones, although some students used tablets, laptops or other internet enabled devices. The test was timed at 5 minutes. The online test automatically grades student answers and students were immediately provided with final score at the end of each test. The data were downloaded from the Moodle database, collated by test number and analysed using the JASP statistical software.

Analysis

Loanword frequency assessment

The final 4SWL loanword list comprised of 501 words, representing 63% of the initial list. However, a high proportion of these words appeared at very low frequency, and so would likely not be familiar to most Japanese students. Previous research (Allen, 2018b) suggests that an occurrence of at least once per million words (pmw) would be sufficient to consider a word likely to be known by a majority of undergraduate students. Using this threshold, the loanword list could be further reduced by removing all words with a pmw rate lower than 1. This gave a final loanword list of 264, or 33% of the initial 4SWL (Appendix A).

From the *Four Skills I* tests, 65 of 100 test items had an answer corresponding to an entry on the final loanword list. However, it is important to note that only 7 of those items had a multiple-choice answer option in katakana. The remainder had kanji equivalents of the appropriate translation.

The Four Skills vocabulary assessment test (4ST)

Comparison of loan word and non-loan word answers

Initial analysis showed the answer results were normally distributed with a mean correct answer rate of 0.583 for all test items. The correct answer rate for test items with loan word answers was marginally lower than that for all items, and the rate for non-loan words slighter higher. As the data were assumed normal, an independent t-test was carried out.

Table 1
Distribution of Correct Answers by Loan Word Status

	Total	Correct	Incorrect
All Responses	1370	799	571
Loan Words	893	514	379
Non-loan words	477	285	192

The results showed that there was no significant difference in the rate of correct answers between test items with loan-word answers and non-loan word answers.

Table 2
Distribution Data

	Mean	Std. Deviation	Shapiro-Wilk	P-value of Shapiro-Wilk
All Answers	0.583	0.493	0.626	<0.001
Loan Words Only	0.576	0.495	0.628	<0.001
Non-Loan Words Only	0.597	0.491	0.623	<0.001

Table 3
Independent t-test Results

	t	**df**	**p**
LW/NLW t-test	0.783	1368	0.434

Note. Loan Word (LW), Non-Loan Word (NLW)

Comparison of difficulty index scores

While the previous analysis allowed comparison of LW and NWL responses as overall groups, in order to look at any potential significance at the level of individual questions, a basic Difficulty Index (DI) test was performed. The DI is calculated as a proportion of correct answers amongst all responses. A lower DI suggests a more difficult test item.

The mean Difficulty Index scores, in Table 4, are all very similar, with the mean for all test items the same as the mean for the loanword test items only. The mean difficulty for the non-loanword items was marginally higher, suggesting a slightly easier difficulty level. The highest mean difficulty, implying an easier question, was found amongst the LW items

with katakana answer options. However, there was only a 0.01 difference. In addition, as previously noted, this was a much smaller group of questions.

There were two notable outliers from the initial Difficulty Index analysis, shown in Table 5. Question 1 from Test 5 ('river') was the only test item with a 100% correct answer rate. The lowest scoring test item was Question 1 of Test 6 ('flight'), with only 8% of students answering correctly.

Table 4
Mean Difficulty Index Scores

All Test Items	LW only	Non-LW	LW with Katakana Multiple Choice	
0.58	0.58	0.6	0.61	

Note. Loan Word (LW), Non-Loan Word (NLW)

Table 5
Results of the Difficulty Index Analysis for each Question

Test	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Test 1	0.76	0.35	0.76	0.35	0.65	0.88	0.47	0.88	0.35	0.53
Test 2	0.87	0.60	0.13	0.73	0.47	0.53	0.67	0.73	0.80	0.67
Test 3	0.82	0.24	0.65	0.65	0.35	0.65	0.41	0.65	0.71	0.76
Test 4	0.20	0.20	0.73	0.67	0.60	0.40	0.53	0.27	0.40	0.60
Test 5	1.00	0.53	0.60	0.87	0.47	0.87	0.80	0.60	0.80	0.67
Test 6	0.08	0.83	0.83	0.58	0.67	0.67	0.42	0.58	0.58	0.75
Test 7	0.38	0.23	0.54	0.38	0.69	0.38	0.62	0.54	0.46	0.46
Test 8	0.22	0.78	0.44	0.89	0.56	0.56	0.56	0.78	0.67	0.67
Test 9	0.92	0.83	0.58	0.92	0.50	0.58	0.83	0.50	0.50	0.75
Test 10	0.50	0.58	0.50	0.42	0.67	0.33	0.33	0.50	0.25	0.58

Distribution plots, Figure 1, for the difficulty index results show a difference in normality between LW and NLW answers. Further analysis, Table 6, showed a non-normal distribution in the DI results for NLW questions.

Figure 1

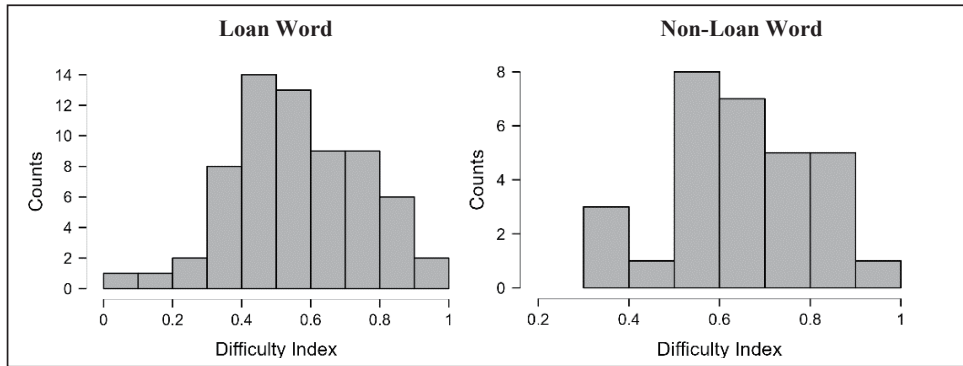*Distribution Plots of Difficulty Index Results Differentiated by Answer Word Type*

Table 6
Distribution Data for Difficulty Index Results

	Mean	Std. Deviation	Shapiro-Wilk	P-value of Shapiro-Wilk
All Answers	0.583	0.198	0.985	0.34
Loan Words Only	0.576	0.192	0.991	0.914
Non-Loan Words Only	0.597	0.21	0.936	0.044

Comparison of the DI results between LW and NLW questions through a Mann-Whitney U test showed no significant differences

Table 7
Mann-Whitney U Test.

U	p
1032.5	0.45

As shown in Table 8, the highest and lowest difficulty rated loanwords were checked against the frequency chart lists to determine if frequency showed a significant impact on difficulty. Interestingly, the word with the easiest difficulty rating ('river') not only had a lower frequency than the fourth ('wild') and fifth ('advice') easiest words, but also had a lower frequency than the most difficult word ('flight'). One possible explanation may be that the words with higher difficulty may be more challenging to spell correctly. For example, words such as 'flight' and 'daily' include the letter 'l' which may be confused with 'r',

particularly as this would still lead to the English words 'fright' and 'dairy'. If this is the case, it may be that the spelling component of the test is a more significant factor in difficulty than the word comprehension.

Table 8

Frequency Data of Most and Least Difficult Loanword Answers

Word	Difficulty Index Ranking	Frequency Ranking
flight	1	429
grant	2	58
daily	7	250
investor	8	17
internal	10	7
advice	94	3432
wild	96	355
wish	97	48
brain	99	183
river	100	314

Note. The five highest and lowest rated loanwords by difficulty scale are included (1=most difficult, 100=least difficult)

A further comparison, see Table 9 and Table 10, was made using ANOVA analysis to compare LW questions with katakana answer options against LW questions with kanji answer options. One possible mechanism for LWs to influence question difficulty is for students to use sound matching. An answer presented in katakana may have enough phonetic similarity to allow a student to guess the correct answer when comparing it to the English.

Table 10

ANOVA Comparison of LW Questions with Katakana Answers

Loan Status	N	Mean	SD	SE	Coefficient of variation
Loan Word (Kanji)	58	0.572	0.182	0.024	0.318
Loan Word (Katakana)	7	0.607	0.282	0.107	0.464
Non-loan Word	35	0.595	0.21	0.036	0.353

However, analysis showed no significant differences between the LW questions with katakana options and those without. It should be noted, however, that only 7 of the 100 questions included a katakana answer option. This is a very small proportion and may affect the accuracy of the analysis.

Discussion

Despite some interesting outlying points, the results of the analysis seem to conclude that there is no significant difference in the proportion of correct answers when comparing LW and NLW questions. An analysis of correct answers by loanword status revealed that the overall correct answer rate for all items was similar to that of both loanword items and non-loanword items. The independent t-test confirmed no significant difference in correct answer rates between these categories.

While the difficulty index distribution plots showed a small peak at the lower end of the scale (suggesting a number of more difficult questions) this was not significant enough to impact the results of the statistical analysis. While some questions exhibited notable outliers, the mean DI scores were similar across all question types, with a slightly higher mean for non-loanword items, suggesting a marginally easier difficulty level, but again, with no significant findings.

Distribution plots revealed differences in normality between loanword and non-loanword answers. The Mann-Whitney U test, however, showed no significant differences in DI results between these two categories. Further exploration with ANOVA analysis, comparing LW questions with katakana answer options against LW questions with kanji answer options, gave results indicating no significant differences, although the small sample size of katakana questions (n=7) warrants caution in interpretation. The findings suggest that there was no substantial impact on test performance in the *Four Skills* test. Both loanword and non-loanword items demonstrated similar difficulty levels and correct answer rates. Nor did the inclusion of katakana answer options significantly alter difficulty levels.

While the data from the Difficulty Index seems to suggest there is no significant difference between students answers for LW and non-LW questions, there were a number of limiting factors in the study which may have impacted the validity. Firstly, the decision to use the in-class tests may have resulted in lower accuracy levels. While the test results would

provide data from genuine classroom assessment, there is difficulty in maintaining consistent test environments. Students will be taking the test at different times of day, on different days of the week and in different classrooms. In addition, different approaches to setting, monitoring and assessing the self-study aspect of the word list preparation would have an effect on consistency. While efforts were made to reduce this variation by selecting students from a single teacher's classes, this greatly reduced the number of available students and resulted in a small sample size. Furthermore, the tests are carried out over the course of a semester. There would be an expectation that student performance would improve over time. These factors may all have had an effect on the performance of students in different classes.

The low number of test items with katakana options in the multiple-choice section may also be a factor. While there did not seem to be a statistically significant difference between the difficulty levels of katakana and kanji answer options, the sample size was very small.

Having students take the tests on their personal electronic devices also raises the possibility of cheating. The vocabulary tests contribute to the final grade for the *Four Skills* course. This may be enough incentive for some students to cheat on the tests. Students will have access to translation software on their phone, or to photographs of notes. While prudent monitoring of students during the tests should reduce the incidence of cheating, there is still the possibility of it occurring.

The significant number of items classified as loanwords featured in the word lists does also raise the question of accuracy. While Allen's method is an efficient way to analyse a large list of words, it does not take into account whether a word may have a more frequently used Japanese equivalent. For example, 'winter' is a low frequency LW that has a much higher frequency Japanese equivalent 冬 ('fuyu'). One issue from Allen's corpus analysis method is that katakana is used as a transliteration script. This means words that are not being used as LWs, such as song or movie titles, may still be included at lower frequencies.

Conclusion

Unlike in much of the contemporary research, the inclusion of English loanwords in the *Four Skills* vocabulary tests seems to show neither positive nor negative effects on overall test scores. This may provide some reassurance that the tests results are not at risk of being skewed by the presence (or absence) of loan words. Of course, it should be noted that this analysis does not comment on the accuracy of the tests themselves as a method of vocabulary size measurement.

The differences between these results and much of the prior research could be explained by a number of factors. One point may be due to the nature of the tests, as the strictness of the spelling requirements in the completion test may make it more difficult for students to achieve higher scores. Other tests in the prior research used exclusively multiple-choice options, which do not require a demonstration of spelling knowledge and allow some degree of guessing. The absence of specific translations in the homework wordlists also means that students would have an inconsistent level of association between some target words and a potential LW equivalent. Some students may have learned a word as a LW, while others may have learned the same word with a NLW translation. While students may have some consistency for words at higher or lower frequency levels, there is still likely to be variation.

Despite the results of the initial investigation, there may be a benefit to further study in this area. Potential research might include a paper test based on either the Vocabulary Size Test or Vocabulary Levels Test formats utilising the *Four Skills* word list. Of particular interest may be a comparison between LW question accuracy when answer options are presented in katakana against answers in kanji, as the very small sample size of katakana answers in the testing materials made comparison challenging. Many of the testing materials used in other research featured a higher proportion of katakana answer options, so this may still be a fruitful area of further research.

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Appendix A

Loanwords in Four Skills Vocabulary Lists Sorted by Frequency

Word List	Lemma	Freq.	PMW
hotel	ホテル	10503	100.399
bus	バス	8439	80.669
soft	ソフト	8199	78.375
file	ファイル	8107	77.496
club	クラブ	6952	66.455
Internet	インターネット	6543	62.545
theme	テーマ	6037	57.708
balance	バランス	5518	52.747
key	キー	5065	48.417
engine	エンジン	4992	47.719
coffee	コーヒー	4874	46.591
sheet	シート	4708	45.004
beer	ビール	4528	43.284
test	テスト	4304	41.142
hall	ホール	4226	40.397
shop	ショップ	4207	40.215
shirt	シャツ	4128	39.460
speed	スピード	3935	37.615
pattern	パターン	3679	35.168
advice	アドバイス	3432	32.807
title	タイトル	3317	31.708
golf	ゴルフ	3167	30.274
restaurant	レストラン	3113	29.757
cut	カット	3094	29.576
code	コード	3007	28.744
tool	ツール	2972	28.410
text	テキスト	2765	26.431
league	リーグ	2669	25.513
loan	ローン	2561	24.481
day	デー	2499	23.888
route	ルート	2461	23.525
pool	プール	2069	19.778
fashion	ファッション	2038	19.481
item	アイテム	1962	18.755
kitchen	キッチン	1933	18.478
machine	マシン	1868	17.856
panel	パネル	1837	17.560
gasoline	ガソリン	1733	16.566
sun	サン	1710	16.346
front	フロント	1626	15.543
park	パーク	1616	15.447
range	レンジ	1573	15.036
family	ファミリー	1567	14.979
lunch	ランチ	1566	14.970
global	グローバル	1544	14.759
dress	ドレス	1539	14.711
volume	ボリューム	1503	14.367
version	バージョン	1487	14.214
software	ソフトウェア	1484	14.186
big	ビッグ	1472	14.071
map	マップ	1458	13.937
link	リンク	1422	13.593
spot	スポット	1412	13.497
guest	ゲスト	1406	13.440
boat	ボート	1397	13.354
shot	ショット	1387	13.258
lesson	レッスン	1374	13.134
tank	タンク	1357	12.972
partner	パートナー	1352	12.924
flow	フロー	1348	12.886
book	ブック	1344	12.847
cash	キャッシュ	1324	12.656
manner	マナー	1288	12.312
touch	タッチ	1269	12.130
handle	ハンドル	1246	11.911
gold	ゴールド	1209	11.557
living	リビング	1185	11.328
plate	プレート	1163	11.117
lady	レディー	1100	10.515
object	オブジェクト	1076	10.286
order	オーダー	1066	10.190
impact	インパクト	1035	9.894
scale	スケール	1015	9.702
sample	サンプル	989	9.454
bit	ビット	976	9.330
cool	クール	963	9.205
sweet	スイート	936	8.947
beach	ビーチ	929	8.880
category	カテ	920	8.794
target	ターゲット	862	8.240
unique	ユニーク	861	8.230
cloth	クロース	860	8.221
pilot	パイロット	852	8.144
stretch	ストレッチ	851	8.135
roll	ロール	848	8.106
chicken	チキン	847	8.097
golden	ゴールデン	833	7.963
modern	モダン	826	7.896
host	ホスト	804	7.686
reform	リフォーム	784	7.494
pair	ペア	778	7.437
garden	ガーデン	775	7.408
half	ハーフ	772	7.380
press	プレス	770	7.361
sky	スカイ	761	7.274
leadership	リーダーシップ	759	7.255
release	リリース	751	7.179
clean	クリーン	735	7.026
hero	ヒーロー	733	7.007
rain	レーン	714	6.825
producer	プロデューサー	697	6.663
stone	ストーン	696	6.653
cross	クロス	693	6.624
trend	トレンド	689	6.586
flower	フラワー	688	6.577
regular	レギュラー	647	6.185
battle	バトル	637	6.089

score	スコア	635	6.070	slip	スリップ	325	3.107
Indian	インディアン	635	6.070	bird	バード	319	3.049
kick	キック	630	6.022	take	テーク	315	3.011
variety	バラエティー	627	5.994	comment	コメ	315	3.011
mission	ミッション	621	5.936	river	リバー	314	3.002
method	メソッド	603	5.764	strike	ストライク	313	2.992
magazine	マガジン	602	5.755	egg	エッグ	313	2.992
rush	ラッシュ	583	5.573	heavy	ヘビー	312	2.982
direct	ダイレクト	579	5.535	quick	クイック	308	2.944
neck	ネック	578	5.525	smile	スマイル	302	2.887
smart	スマート	576	5.506	heat	ヒート	301	2.877
document	ドキュメント	571	5.458	sexual	セクシャル	300	2.868
device	デバイス	571	5.458	knee	ニー	300	2.868
dinner	ディナー	542	5.181	trust	トラスト	292	2.791
French	フレンチ	520	4.971	safe	セーフ	291	2.782
moral	モラル	519	4.961	farm	ファーム	284	2.715
sales	セールス	516	4.932	gain	ゲイン	283	2.705
yellow	イエロー	515	4.923	fast	ファースト	282	2.696
mirror	ミラー	494	4.722	propose	プロポーズ	282	2.696
old	オールド	484	4.627	blow	ブロー	278	2.657
rare	レア	484	4.627	snow	スノー	276	2.638
task	タスク	481	4.598	shape	シェープ	272	2.600
yard	ヤード	479	4.579	mountain	マウンテン	272	2.600
speech	スピーチ	474	4.531	pound	ポンド	269	2.571
metal	メタル	466	4.455	ship	シップ	268	2.562
grade	グレード	456	4.359	tough	タフ	265	2.533
rich	リッチ	456	4.359	apartment	アパートメント	259	2.476
fit	フィット	455	4.349	western	ウエスタン	256	2.447
deep	ディープ	449	4.292	daily	デーリー	250	2.390
nurse	ナース	446	4.263	gift	ギフト	250	2.390
reality	リアリティー	445	4.254	island	アイランド	248	2.371
positive	ポジティブ	441	4.216	spirit	スピリット	248	2.371
tie	タイ	437	4.177	leaf	リーフ	246	2.352
gender	ジェンダー	435	4.158	sugar	シュガー	240	2.294
lift	リフト	431	4.120	baseball	ベースボール	238	2.275
wood	ウッド	431	4.120	union	ユニオン	236	2.256
flight	フライト	429	4.101	motion	モーション	236	2.256
setting	セッティング	428	4.091	southern	サザン	233	2.227
wing	ウイング	427	4.082	search	サーチ	222	2.122
topic	トピック	424	4.053	extra	エキストラ	219	2.093
youth	ユース	409	3.910	powerful	パワフル	212	2.027
earth	アース	401	3.833	beauty	ビューティー	209	1.998
lip	リップ	400	3.824	Japanese	ジャパニーズ	208	1.988
session	セッション	397	3.795	train	トレーン	203	1.940
telephone	テレホン	388	3.709	element	エレメント	202	1.931
football	フットボール	374	3.575	reference	レファレンス	200	1.912
fresh	フレッシュ	374	3.575	writing	ライティング	199	1.902
skin	スキン	365	3.489	discussion	ディスカッション	198	1.893
nine	ナイン	362	3.460	primary	プライマリー	198	1.893
united	ユナイテッド	358	3.422	English	イングリッシュ	197	1.883
wild	ワイルド	355	3.393	basketball	バスケ	196	1.874
beat	ビート	354	3.384	pepper	ペッパー	190	1.816
healthy	ヘルシー	348	3.327	ride	ライド	188	1.797
middle	ミドル	343	3.279	reader	リーダー	183	1.749
reporter	レポーター	340	3.250	brain	ブレーン	183	1.749
hearing	ヒアリング	339	3.241	limit	リミット	177	1.692
border	ボーダー	333	3.183	bone	ボーン	175	1.673
child	チャイルド	331	3.164				

initial	イニシャル	174	1.663	silence	サイレンス	136	1.300
master	マスター	174	1.663	hey	ヘイ	136	1.300
corporate	コーポレート	170	1.625	trail	トレール	134	1.281
ocean	オーシャン	167	1.596	university	ユニバーシティー	131	1.252
upper	アッパー	166	1.587	holiday	ホリデー	131	1.252
welcome	ウエルカム	164	1.568	background	バックグラウンド	125	1.195
stick	ステッキ	164	1.568	quarter	クオーター	124	1.185
travel	トラベル	163	1.558	procedure	プロシージャー	124	1.185
location	ロケーション	156	1.491	visitor	ビジター	123	1.176
surprise	サプライズ	155	1.482	communication	コミュニケーション	122	1.166
component	コンポ	154	1.472	domestic	ドメスティック	121	1.157
clear	クリア	153	1.463	fee	フィー	121	1.157
commitment	コミットメント	153	1.463	urban	アーバン	120	1.147
recall	リコール	151	1.443	bye	バイ	118	1.128
capture	キャプチャー	147	1.405	spread	スプレッド	113	1.080
opinion	オピニオン	144	1.377	northern	ノーザン	113	1.080
reaction	リアクション	144	1.377	survey	サーベイ	112	1.071
repeat	リピート	144	1.377	winter	ウインター	111	1.061
solution	ソリューション	140	1.338	traffic	トラフィック	107	1.023
tall	トール	139	1.329	tomorrow	トゥモロー	106	1.013
truck	トロッコ	138	1.319				
finger	フィンガー	137	1.310				

Appendix B

Four Skills Word List 1

Number	Word	Type
1	grade	Noun
2	university	Noun
3	cook	Noun
4	English	Noun
5	literature	Noun
6	learning	Noun
7	fourth	Adjective
8	faculty	Noun
9	born	Verb
10	belong	Verb
11	take	Verb
12	child	Noun
13	order	Noun
14	result	Noun
15	experience	Noun
16	test	Noun
17	bit	Adverb
18	half	Noun
19	clear	Adjective
20	cover	Verb
21	above	Noun
22	please	Adverb
23	step	Noun
24	front	Noun
25	range	Noun
26	therefore	Adverb
27	measure	Verb
28	vote	Noun
29	percent	Noun
30	instead	Adverb
31	total	Adjective
32	demand	Noun
33	limit	Verb
34	exist	Verb
35	wild	Adjective
36	surprise	Noun
37	feature	Verb
38	relate	Verb
39	opinion	Noun
40	key	Noun