How similar is YDS to UDS?

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Abstract: OSYM's decision to publish only 10% of tests made it difficult to prepare for the YDS, the Foreign Language Proficiency Test, as there is only one previous test published in full that can be used as study material. The present study considers the possibility of using previous UDS tests made available on the OSYM's website before the decision for that purpose. The single YDS test published in full was compared in terms of lexical content to nine UDS tests in social sciences administered between 2006-2013. The comparison considered lexical similarity, lexical difficulty and readability of the tests, for which several online analysis software were used. Lexical similarity was analysed using Text_Lex Compare and lexical difficulty with VocabProfile on the Compleat Lexical Tutor Website. Readability was measured using Flesch-Kincaid Reading Ease and Flesch-Kincaid Grade Level indices. These analyses suggested that the YDS test was sufficiently similar to the UDS tests with respect to vocabulary to grant their use as study material towards YDS. The YDS turned out to have a slightly lighter vocabulary load but to be slightly more difficult to read although both tests were university level texts in terms of difficulty and required knowledge of the most frequent 5,000 words of English as a minimum. Both tests were comparable in terms of lexical content to similar proficiency tests in other countries.

Keywords: EFL vocabulary, YDS, lexical similarity, vocabulary load, readability

Introduction

YDS, the Foreign Language Proficiency Test in Turkey, has been launched in 2013 to replace two other proficiency tests namely UDS (Üniversitelerarası Dil Sınavı) and KPDS (Kamu Personeli Dil Sınavı). UDS was intended for academics and postgraduate students and offered in three academic areas: social sciences, hard

sciences and health studies. KPDS was for government officials and offered in a number of languages besides English. Although YDS has been administered a number of times since its launch, only one test has been published in full (i.e. the earliest test administered in the spring of 2013) while only 10% of the later tests has been made public. Although this renders the test items reusable, it severely limits test takers in the way of preparing for future tests using past tests for practice. Luckily many UDS and KPDS tests were made available earlier on the OSYM's website. The question is whether YDS is sufficiently similar to UDS and KPDS to justify their use as practice tests for YDS. Upon its launch, the former director of OSYM, Prof.Dr.Ali Demir has declared YDS to be equivalent to UDS and KPDS in content (Milliyet, 11 Jan, 2013), the latter two already having some 50% of their content in common in the past two years. He assured test takers that they can prepare for the YDS in the same way as they did for the UDS or KPDS. The present study will seek for empirical support to this claim by comparing the difficulty level of YDS to previous UDS tests with respect to vocabulary using lexical similarity, lexical difficulty, and text readability indices.

Data Analysis

The data consisted of 9 English UDS tests in Social Sciences published between the years 2006-2012, and a single English YDS test administered in 2013. Before the tests were subjected to computer analysis, a number of modifications have been made to the tests in order to render the analysis more reliable (For a list of these modifications see Ozturk, 2018). The tests were analysed using online software. Lexical similarity of YDS to UDS was analysed with the software Text-Lex Compare. Lexical difficulty of the tests was compared with VocabProfile, and readability of the tests was checked with Flesch-Kincaid Readability measures. These are described below.

Lexical Similarity

Lexical similarity between the YDS and the UDS was operationalized in this study as lexical sharedness, which refers to the amount of vocabulary that occur in both of a pair of texts. In the present study, lexical sharedness was analysed using Text-Lex

Compare software which is available at the Compleat Lextutor website (https://www.lextutor.ca/cgi-bin/tl_compare/). This software compares the lexical content of two texts showing the percentage of shared word tokens. The results involving pairwise comparisons between the YDS test and the UDS tests are given below:

Table 1. Lexical sharedness between YDS and UDS

Tests	UDS (All)	2012	2009. 1	2009. 2	2008. 1	2008. 2	2007. 1	2007. 2	2006. 1	2006. 2
YDS	89.55	72.60	69.76	72.28	69.99	70.44	70.03	70.53	69.48	68.82
2012		X	72.17	73.03	72.30	70.93	71.81	73.19	69.65	70.28
2009.1			X	69.08	73.05	70.76	70.73	71.90	73.65	70.52
2009.2				X	74.64	73.30	73.30	74.28	73.98	71.15
2008.1					X	72.88	75.14	74.12	74.08	73.92
2008.2						X	73.30	74.21	73.27	70.37
2007.1							X	74.12	74.46	72.95
2007.2								X	72.24	70.40
2006.1									X	70.90
2006.2										X

(**N.B.** UDS tests in the table are named after their time of administration. For example, 2009.1 refers to the UDS test administered in the spring of the year 2009.)

The comparison between the YDS test and all the UDS tests combined indicated that around 90% (89.55%) of YDS words already occurred in the past UDS tests examined here. If a person taking the YDS exam investigated here studied all of these UDS tests before the exam he /she would have already met 90% of the words in the YDS. This is by any means a large percentage and would mean that using past UDS tests to prepare for the YDS is rather useful as far as vocabulary goes. On the other hand, sharedness percentages for individual UDS tests were not as high as the combined UDS tests. These ranged between 72% and 68%. The question we need to ask is: Is this a high degree of sharedness?

Any two texts written in the same language will undoubtedly share some of their vocabulary. In English texts, the articles, conjunctions, pronouns, auxiliaries and prepositions will inevitably be shared. No two English texts will have a 0 % of shared

lexis. No two texts, on the other hand, will have 100% of their lexis in common either unless they are the copies of the same text. Therefore, we need a baseline data to guide the comparison. How much lexis needs to be shared for us to confidently say two different texts are sufficiently lexically similar. Unfortunately, previous research offers no support as there is a lack of research in this area. Therefore, to obtain a rough guide, the demo texts provided as part of the Text-Lex Compare interface on Lextutor were used. Text_Lex Compare was run on the five pairs of demo texts which varied in terms of topic and authorship. The results of this analysis are given in Table 2. The percentages of shared lexis indicate that texts on the same topic as well as those by the same author tend to share more words than texts on different topics and by different authors. The degree of shared lexis between individual UDS tests and YDS (72% - 68%) is typical of texts related by topic. In other words, UDS and YDS tests are as similar as two texts written about the same or related topic, which suggests a high degree of similarity.

The lexical sharedness values obtained can also be evaluated on logical grounds. Even the lowest of the values (68%) would mean that a person who prepared for the YDS exam investigated here with one of the UDS tests would have met more than two thirds of the YDS vocabulary beforehand. This would still be a useful preparation for YDS.

It should be noted that the similarity of the YDS test to the UDS tests is not very different from the similarity among the UDS tests themselves. While the YDS test shares 70,43% of its vocabulary on average with UDS tests (computed as the mean of the 9 percentages in the first raw in Table 2) , the UDS tests share 72,5% of their vocabulary among themselves (computed as the mean of 36 percentages for UDS tests in Table 2) between a range of 69% and 75%. This means the YDS test is almost as similar to the UDS tests as any other UDS test.

Table 2. Lexical sharedness in the Text_Lex Compare demo texts

Topic	Author	Tokens	% of shared lexis
Unrelated	Different	200 vs 209	40.85 %
Unrelated	Same	812 vs 804	62.94 %
Same	Different	862 vs 646	72.80 %
Related	Different	828 vs 750	70.45 %
Same	Same	3719 vs 3317	76.75%

Lexical Difficulty

Next, we look at the difficulty of words used in the tests. Although there are numerous factors that can make a word difficult like word length, pronounceability, meaning, abstractness, L1 words etc. (Laufer, 1990) we are going to focus on one: frequency. Frequency has a long history of being used as an index of text difficulty in L2 vocabulary teaching and research. Thus, a text with a greater of amount of words which are frequent in the language is easier than a text with a lesser amount of frequent words. Even though the vocabulary of English is around 100,000 word families, only a small proportion is very frequently used. This high frequency vocabulary of English traditionally covers the most frequent two thousand words (Nation, 2001, p.14) although Schmitt & Schmitt (2014) suggested this to be expanded to 3,000 most frequent words. The coverage of high frequency vocabulary in the YDS and UDS tests was checked using the vocabulary profiling software VocabProfile on LexTutor. This software checks the vocabulary of texts (i.e. tests in this study) against word lists derived from large English corpora (i.e. British National Corpus and Contemporary Corpus of American English) organised into frequency bands with 1,000 words each. Table 3 shows the percentage of words in the YDS and UDS tests (i.e. coverage) from the most frequent 2,000 and 3,000 word levels. The results indicate that the YDS contains a higher percentage of the most frequent 2,000 words (85.10%) than UDS on the whole (79.55%) as well as in 5 of the 9 individual UDS tests. The results for the most frequent 3,000 words are similar: the percentage of the most frequent 3,000 words (92.93%) is higher in YDS than UDS tests as a whole (91.84%) and higher than 5 individual tests out of 9 although the differences are smaller. Thus, the YDS test contains a higher percentage of the high frequency vocabulary and seems to be easier than the UDS in that respect.

Table 3. Lexical coverage of UDS vs YDS

Test	Tokens	Coverage by 2K words	Coverage by 3K words	Size required for 95% coverage	Size required for 98% coverage
YDS	6973	85.10	92.93	5K	Over 25K
UDS (All)	31204	79.55	91.84	5K	Over 25K
UDS.2012	6355	86.09	94.32	4K	Over 25K
UDS.2009.1	5944	87.60	93.37	5K	Over 25K
UDS.2009.2	7100	83.58	90.81	Over 20K	Over 25K
UDS.2008.1	6948	84.75	91.46	Over 25K	Over 25K
UDS.2008.2	6666	81.02	89.59	Over 25K	Over 25K
UDS.2007.1	6508	84.83	91.58	Over 25K	Over 25K
UDS.2007.2	6745	83.74	91.76	9K	Over 25K
UDS.2006.1	5491	86.51	94.14	Over 25K	Over 25K
UDS.2006.2	5887	85.27	92.06	8K	Over 25K
Passages (UDS)	11276	83.89	91.51	21K	Over 25K
Passages (YDS)	1005	82.58	89.94	7K	Over 25K

While the percentage of high frequency vocabulary is high in the YDS, it also contains words outside of this high frequency vocabulary. Knowledge of the most frequent 2,000 words of English will not be enough to understand the YDS adequately. In order to understand an adequate proportion of the YDS words a person would need to know some low frequency words in addition to high frequency words. Does one need to know all of the words in the YDS and how many words does one need to know?

While it is desirable to know 100% of the words in a test, it may not be necessary to know all of them. Research on L2 reading has shown that a reader can understand a text reasonably well with less than complete knowledge of the vocabulary in the text. It is suggested that knowledge of the 98% of the words in a text provides *optimal comprehension* of the text whereas a minimum of 95% of words need to be known for *adequate comprehension* (Laufer & Ravenhorst-Kalovski, 2010). Texts in which these percentages are covered by higher frequency words are usually easier. Thus, a text that has 95% of its words drawn from the most frequent, say, 4,000 (4K) words of English is easier than a text with 95% of words from the most frequent 7,000 words. The latter text will contain a greater number of lower frequency words. While these guidelines are for L2 reading and may not be directly applicable to testing, they might still serve as a rough guide to evaluate the difficulty of tests. Overall, YDS reaches 95% coverage in the same frequency level (5K) as the UDS tests taken as a whole. With respect to individual tests, YDS reaches 95% coverage at a higher frequency level (5,000 level) than all but one UDS test (UDS.2012 which reaches 95% coverage at 4,000 level). This suggests that 95% of words in the YDS consists of more frequent words than UDS tests. This analysis was repeated on the reading comprehension passages of the corresponding tests and the results have shown that YDS reaches 95% coverage at 7,000 level while UDS does so at 21,000 level. On the other hand, 98% coverage is not reached in either test by the most frequent 25,000 words used by the program. On the whole, this analysis suggests that YDS vocabulary is relatively more frequent and, to the extent that frequency indicates difficulty, has a lighter vocabulary load than the UDS vocabulary.

Lexical coverage of the YDS is compared below in Table 4 to English proficiency tests in other countries using data in published research. This comparison turned out to be problematic because of the differences in sections analysed or in the treatment of proper nouns. Webb & Paribakht (2015) investigated the three sections of the CanTest, an English proficiency test in Canada, which included reading comprehension, listening comprehension and cloze. Laufer & Ravenhorst-Kalovski (2010) examined the reading comprehension section only of the English component

of the University Entrance Test in Israel. Both studies counted proper nouns among the first 1,000 words. This revealed that 6,000 and 4,000 most frequent words provided 95% coverage and 14,000 and 7,000-8,000 words provided 98% coverage respectively. A parallel analysis was carried out on YDS reading comprehension passages with proper nouns counted as 1K. This revealed 5,000 words for 95% and 10,000 words for 98% coverage. This suggests that YDS is midway between CanTest and the Israeli Test in vocabulary load. Another comparison involved a study by Chujo & Oghigian (2009) who compared the EIKEN test in Japan to TOEFL and TOEIC tests. They preferred omitting proper nouns and numerals altogether from the analysis deleting them manually. 95% coverage was provided by 3,500 word families in TOEFL, 3,000 word families in TOEIC and 4,000 word families in the most advanced level of EIKEN. An equivalent analysis on YDS revealed 4,000 words for 95% coverage which was similar to EIKEN but higher than TOEFL and TOEIC. These results suggest that YDS is not particularly more difficult or easier than corresponding proficiency tests in other countries with respect to vocabulary.

Table 4. Other studies on lexical coverage of national proficiency tests

Study	Webb & Paribakht (2015)	Laufer and Ravenhorst-Kalovski (2010)	Chujo & Oghigian (2009)	Present Study
Test	CanTest (English L2 Prof test in Canada used for university admission)	English section of the University Entrance Test in Israel	TOEIC TOEFL EIKEN (Test of Practical English Proficiency in Japan)	YDS
Sections of test	Reading Listening Cloze	Reading comprehension	Whole tests	Whole test Reading section
Corpus Size	87 short passages (12 tests)	18 texts (3 tests)	TOEIC (6 tests) TOEFL (8) EIKEN (20)	1 test
Analysis Software	Range (1K-14K)	Vocabulary Profiler /Lextutor (20K lists)	Vocabulary Profiler /Lextutor (14K lists)	Vocabulary Profiler /Lextutor

				(25K lists)
Coverage 95%	Reading:6,000 Listening:4,000 Cloze:4,000 (Incl.proper nouns & interjections as 1K)	4,000 (PN=1K)	TOEFL: 3,500 wfs TOEIC: 3,000 EIKEN(most advanced level): 4,000 wfs (Excluding proper nouns and numerals)	**Reading passages:** 5,000 (PN=1K) 4,000 (Excluding person names & numbers)
Coverage 98%	Reading:14,000 Listening:10,000 Cloze:6,000 (Incl.proper nouns & interjections as 1K)	7,000-8,000 (PN=1K)		**Reading passages:** 10,000 (PN=1K)

Readability

Readability measures indicate how difficult a text in English is to understand. We are going to use two readability measures to evaluate the difficulty of YDS: Flesch-Kincaid Reading Ease and Flesch-Kincaid Grade Level, which are available online at https://readability-score.com/. While these are not strictly lexical measures both measures use word length in addition to sentence length to calculate readability, and therefore can be considered partly lexical. The Flesch-Kincaid reading-ease test yields a score between 0 and 100 and 'higher scores indicate material that is easier to read' (Wikipedia). Flesch-Kincaid Grade Level gives a score corresponding to a U.S. grade level and higher scores indicate a greater grade level and a greater number of years of education and therefore more difficult material. The following table (Table 5) has been used to interpret the results of this analysis (Wikipedia).

Table 5. Interpretation table for Flesch-Kincaid readability scores

Score	School Level	Notes
90.0–100.0	5th grade	Very easy to read. Easily understood by an average 11-year-old student.
80.0–	6th grade	Easy to read. Conversational English for consumers.

90.0		
70.0–80.0	7th grade	Fairly easy to read.
60.0–70.0	8th & 9th grade	Plain English. Easily understood by 13- to 15-year-old students.
50.0–60.0	10th to 12th grade	Fairly difficult to read.
30.0–50.0	college	Difficult to read.
0.0–30.0	college graduate	Very difficult to read. Best understood by university graduates.

The results from the readability analysis are given in Table 6. Overall, the results indicate that YDS is very similar to UDS tests in readability although YDS is slightly more difficult as a whole as well as in reading comprehension passages. The reading ease score is lower for the YDS both when the test taken as a whole (53.2 vs 55.1) and in the reading comprehension passages (39.4 vs 44.8). The grade level is around 9 in both tests in whole tests while there is one grade level difference between them with respect to reading passages (13 vs 12), which indicates that YDS requires one extra year of education to understand. On the whole, both tests are difficult to read at the college level or just below it.

Table 6. Readability results

	Flesch-Kincaid Reading Ease	Flesch-Kincaid Grade Level
YDS (Whole test)	53.2	9.3
UDS (Whole tests)	55.1	9
YDS (Passages)	39.4	13.1
UDS (Passages)	44.8	12.2

Conclusion

The present study compared the lexical component of the YDS test administered in 2013 to nine previous UDS tests to determine if UDS tests can be used as study material for preparing for the YDS. The results of this analysis has shown that both YDS and UDS contain difficult vocabulary which is typical of university level texts,

but they are not particularly more difficult lexiswise than corresponding proficiency tests used in other EFL countries.

The minimum number of words that needs to be known for both tests is 5000 words, but the YDS test has a slightly lighter vocabulary load as it contains a higher percentage of high frequency vocabulary of English and the reading passages require knowledge of a fewer number of words.

This study has shown that previous UDS tests can be used to prepare for the YDS as far as vocabulary goes. The nine UDS tests investigated here provides encounters with about 90% of the YDS vocabulary and individual UDS tests with at least two thirds of it. In the light of this finding, the YDS candidates are advised to prepare with more than one UDS test. The greater number of tests seems to provide more encounters with a greater proportion of the YDS vocabulary.

The present study was limited to a comparison of the YDS to UDS tests in a single academic area. Further research can compare YDS to UDS tests in other areas or to KPDS tests.

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