

Linking TU-STEPS Scores to TOEIC Scores

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Introduction

This mini report is regarding score comparison research between the Thammasat University-Standard Test for English Professional Skills (TU-STEPS) and the Test of English for International Communication (TOEIC) scores. The report includes reliability estimates, correlations, descriptive statistics of both TU-STEPS and TOEIC scores as well as the score conversion table. It also compares mean differences in both TU-STEPS and TOEIC scores across multiple groups who are assumed to be different in their English proficiency.

TU-STEPS has been used for employment and promotion purposes for employees in both public and private sectors. Given its growing and widespread use for high-stakes decisions in Thailand, it is thus crucial that the TU-STEPS go through a rigorous, evidence-based procedure to establish test score linking to the TOEIC test, which is most widely used as an indicator of global English proficiency.

Method

In order to acquire empirical evidence for the score linking on the two tests, we used single-group equating design with counterbalancing to ensure that both test scores were obtained from the same test takers while controlling for possible practice effects. A total of 387 Thai learners of took both tests. The breakdown of the numbers of the participants from multiple Thai programs is as follows: 18 MA-ELT and 20 MA-CEIC students representing advanced-high level of English; 34 students from Panyapiwat Institute of Management (PIM) subgroup 1 representing advanced-mid level of English and 29 students from Panyapiwat Institute of Management (PIM) subgroup 2 representing advanced-low level of English; 123 students from TU 105 representing intermediate-high/-mid English levels; 163 students from TU 050 representing intermediate-low/novice-high English levels.

The TOEIC test is made up of listening and reading sections which takes 45 and 75 minutes, respectively, to complete. Listening section consists of 100 multiple-choice items from 4 separate parts (photograph descriptions [10 Qs], question-response [30 Qs], short-conversations [30 Qs], and short-talks [30 Qs]), while reading section includes 100 multiple-choice items from 3 different parts (incomplete sentences [40 Qs], text completion [12 Qs], and reading comprehension [48 Qs]). In terms of the test format, the TU-STEPS is quite similar to the TOEIC except for the fact that the TU-STEPS does not have a photograph part in listening section and the length of the test is half the TOEIC (50 items per each section).

Results

Table 1 below displays descriptive statistics and reliability estimates computed for each test.

Table 1. Test statistics for both TOEIC and TU-STEPS

	TOEIC Listening	TOEIC Reading	TOEIC (Total)	TU-STEPS Listening	TU-STEPS Reading	TU-STEPS (Total)
Mean (<i>M</i>)	52.53	43.03	95.56	25.80	23.62	49.41
Standard Deviation (<i>SD</i>)	19.31	19.31	37.26	9.38	10.57	19.21
Max	98	99	195	50	49	98
Min	19	14	44	8	6	19
Cronbach's alpha (α)	.95	.95	.97	.89	.91	.95

As can be seen above in Table 1, participants scored quite similarly on two tests; the means of each section from both tests ranged from about 43% to 53%. Ranges of test scores are wide enough to cover broad levels of English proficiency. It is of particular importance to note that Cronbach's alpha for the TU-STEPS were .89 to .95, indicating that the TU-STEPS had as high internal consistency as the TOEIC did (.95 - .97) despite the fact that the TU-STEPS is half the length of the TOEIC.

The correlation between the TOEIC and the TU-STEPS test scores was as high as .93, and the TOEIC listening and the TU-STEPS listening sections was .86, and the correlation between the TOEIC reading and the TU-STEPS reading sections was .89, suggesting that both tests appear to tap into the same construct of English proficiency.

Table 2 below shows means and standard deviations of TOEIC and TU-STEPS scores from each program used as a proxy of varying degrees of English proficiency. It shows that participants' assumed differences in English proficiency were captured properly in both tests; MA ELT and CEIC students performed the best both in the TOEIC and the TU-STEPS followed by PIM 2 and 1 students, and TU 105 and 050 students. This result serves as evidence to support the construct validity of the TU-STEPS because it can reveal the differences in underlying English proficiency levels according to the hypothesized hierarchical English ability levels among groups.

Table 2. Descriptive statistics of TOEIC and TU-STEPS test scores across 6 groups

	TOEIC	TU-STEPS
MA ELT	167.56 (<i>SD</i> = 17.67)	83.89 (<i>SD</i> = 21.44)
MA CEIC	155.85 (<i>SD</i> = 21.44)	79.45 (<i>SD</i> = 9.90)
PIM 2	132.28 (<i>SD</i> = 37.17)	69.48 (<i>SD</i> = 16.74)
PIM 1	118.56 (<i>SD</i> = 29.96)	60.38 (<i>SD</i> = 15.83)
TU 105	102.07 (<i>SD</i> = 9.91)	52.73 (<i>SD</i> = 12.11)
TU 050	63.97 (<i>SD</i> = 9.34)	33.56 (<i>SD</i> = 7.02)

Finally, the equipercentile linking method was used to find the correspondence between for the TU-STEPS and the TOEIC test scores. This selected method has been used extensively in a wide range of settings such as the linking of the SAT test with the ACT test and the linking of the TOEFL iBT test with the IELTS test (ETS, 2010). The equipercentile linking method allows us to link the scale scores from the TU-STEPS to the TOEIC through percentile ranks (Livingston, 2004). Table 3 on the next page displays the score comparison results for listening and reading scores on the TU-STEPS and the TOEIC which was converted to the ETS official TOEIC score scales. Note that overall corresponding scores of each test can be computed easily simply by adding listening and reading scores obtained from the conversion table below.

Table 3. TU-STEPS & TOEIC Conversion Table

TU-STEPS Listening	TOEIC Listening	TU-STEPS Reading	TOEIC Reading
1 – 7	10	1-10	5
8	15	11	15
9 – 10	30	12	25
11	40	13	30
12	45	14	35
13	55	15	45
14	60	16	55
15	70	17	55
16	90	18	65
17	105	19	70
18	125	20	80
19	140	21	90
20	150	22	105
21	170	23	115
22	175	24	125
23	190	25	130
24	205	26	135
25	220	27	145
26	235	28	160
27	260	29	170
28	285	30	185
29	295	31	195
30	300	32	205
31	330	33	215
32	345	34	220
33	350	35	240
34	360	36	255
35	370	37	285
36	395	38	290
37	400	39	315
38	415	40	325
39	420	41	335
40	425	42	360
41	430	43-44	405
42	435	45	435
43	460	46	470
44	475	47	475
45	490	48	485
46-50	495	49	490
		50	495