

The Minimal English Test for Engineering Majors : Its Correlation with the University Entrance Examination (English Part) 2014

By

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Summary : MAKI, WASADA, and HASHIMOTO (2003) developed the Minimal English Test (MET), a 5-minute English test, which requires the test taker to write a correct English word with 4 letters or fewer into each of the 72 blank spaces of the given sentences while listening to the CD. Revising the original MET, the Maki group created the MET 6A/6B, where every 6th word was a target word. The MET 6A and the MET 6B only differ in the position of the first target word. Their past surveys include the English learners of a variety of majors. In this research we investigated whether the MET 6B can correctly measure English proficiency of university freshmen who major in a particular academic field, such as engineering. We examined the correlations between the scores on the MET 6B and the scores on the English Part of the University Entrance Examinations administered by the National Center for University Entrance Examination in Japan. We call the University Entrance Examination (English Part) the Center Test (CT) in this paper. Our findings are as follows: First, for the engineering majors, the MET 6B does not simply predict the scores on the Reading Section of the CT 2014, but rather predicts the total scores on the CT 2014. Second, the correlation coefficient between the scores on the MET 6B and the total scores on the CT 2014 with respect to the engineering majors ($r = .43$) is far lower than the results of the MAKI Group's past surveys from 2009 to 2014, in which the correlation coefficients between the scores on the MET 6A/6B and the total scores on the CTs are more or less consistent (from .53 to .61). This seems to indicate that the current version of the MET 6B does not precisely predict English proficiency of engineering majors, in terms of the total scores on the CT. This in turn suggests that there may be some unknown factors that cause the correlation coefficient between the scores on the MET 6B and the total scores on the CT 2014 for the English learners majoring in engineering to be far lower than those for the English learners of a variety of majors. It is then necessary to uncover those factors, and depending on what they are, create a different version of the MET as a useful tool to measure English proficiency of engineering majors.

Key words : cloze test, engineering majors, English proficiency, the Minimal English Test (MET), University Entrance Examination

1. Introduction

MAKI, WASADA, and HASHIMOTO (2003) developed the original version of the Minimal English Test (MET), a 5-minute English test, which requires the test taker to write a correct English word with 4 letters or fewer into each of the 72 blank spaces of the given sentences, while listening to the CD. Since then, the MAKI Group has found statistically significant correlations between the

scores on the MET and the scores on the English Part of the University Entrance Examinations in Japan administered by the National Center for University Entrance Examination. We call the University Entrance Examination (English Part) the Center Test (CT) in this paper. See MAKI (2010) and GOTO, MAKI, and KASAI (2010) for the details of the MET.

MAKI *et al.* (2012) revised the MET. They call the revised MET the MET 6B, where every 6th word was a

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target word, and examined the correlation between the scores on the MET 6B and the scores on the CT 2011. See MAKI *et al.* (2012) for the details of the MET 6B as well as the MET 6A. See also MAKI *et al.* (2013) and MAKI *et al.* (2014) for the correlation between the scores on the MET 6B and the scores on the CT 2012, and the correlation between the scores on the MET 6B and the scores on the CT 2013, respectively.

The purpose of this paper is to investigate whether the MET 6B can correctly measure English proficiency of university freshmen who major in a particular academic field, such as engineering. For this purpose, in this research, by administering the MET 6B to university freshmen whose major is engineering, we examined the correlations between the scores on the MET 6B and (i) the total scores on the CT 2014, (ii) the scores on the reading section of the CT 2014, and (iii) the scores on the

listening section of the CT 2014.

The organization of this paper is as follows: Section 2 provides the materials (the Minimal English Test (MET) 6B and the University Entrance Examination (English Part) 2014 (CT 2014)) to be employed in this research. Section 3 reports the results, and Section 4 concludes the paper.

2. Materials

2.1. The Minimal English Test (MET) 6B

The Minimal English Test (MET) 6B is based on Lessons 1 and 2 of the textbook for university freshmen written by KAWANA and WALKER (2002) and the CD that accompanies it, exactly like the original MET developed by MAKI, WASADA, and HASHIMOTO (2003). The MET 6B was designed along the rules in (1).

(2) The Minimal English Test 6B (The MET 6B)

Name: _____ Date: Month ___ Day ___ Year _____
 The Score on the Reading Section of the University Entrance Examination (English Part) 2014: ____/200
 The Score on the Listening Section of the University Entrance Examination (English Part) 2014: ____/50

Please fill an English word into each blank spot, while listening to the CD.

1. The majority of people have () least one pet at some () in their life.
 2. Sometimes the () between a pet dog or () and its owner
 3. is so () that they begin to resemble () other in their appearance
 4. and (). On the other hand, owners () unusual pets
 5. such as tigers () snakes sometimes have to protect () from their own pets.
 6. Thirty () ago the idea of an () pet first arose.
 7. This was () pet rock, which became a () in the United States
 8. and () to other countries as well. () paid large sums of money
 9. () ordinary rocks and assigned them ().
 10. They tied a leash around () rock and pulled it down () street just like a dog.
 11. () rock owners even talked to () pet rocks.
 12. Now that we () entered the computer age, we () virtual pets.
 13. The Japanese Tamagotchi---the () chicken egg---
 14. was the precursor () many virtual pets.
 15. Now there () an ever-increasing number of such () pets
 16. which mostly young people () adopting as their own.
 17. And () your virtual pet dies, you () reserve a permanent resting place
 18. () the Internet in a virtual () cemetery.
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19. Sports are big business. () Babe Ruth, the most famous athlete of () day,
 20. was well-known for earning () much as the President of () United States,
 21. the average salary () today's professional baseball players
 22. is () times that of the President. () a handful of sports superstars
 23. () one hundred times more through () contracts with manufacturers
 24. of clothing, (), and sports equipment. But every () produces
 25. one or two legendary () who rewrite the record books,
 26. () whose ability and achievements are () for generations.
 27. In the current () Tiger Woods and Michael Jordan are two such legendary (),
 28. both of whom have achieved () mythical status.
 29. The fact that () large number of professional athletes () huge incomes
 30. has led to () competition throughout the sports world.
 31. () send their children to sports () camps at an early age.
 32. () kids typically practice three to () hours a day,
 33. all weekend () during their school vacations in () to better their chances
 34. of () obtaining a well-paid position on () professional team
 35. when they grow (). As for the many young () who do not succeed,
 36. one () if they will regret having () their childhood.

(1) Rules

- a. Every 6th word is left blank in the revised MET.
- b. Japanese words, years, and unpronounced words in parentheses are ignored.

Rule (1a) guarantees that the MET 6B has the form of a cloze test, where every 6th word is left blank, no matter how many letters the word may consist of.

The MET 6B is a simple test which requires the test taker to write a correct English word into each of the 66 blank spaces of the given sentences, written on one piece of A4 paper, while listening to the CD on which the sentences of the textbook are recorded. The reproduced sound from the CD lasts about 5 minutes with a speed of 125 words per minute. The MET 6B is shown in (2).

The test taker was verbally given the following 4 instructions in Japanese in advance.

1. Write the scores on the University Entrance Examination (English Part) that you took in 2014.
2. Fill an English word into each of the blank spaces, while listening to the CD.
3. The reproduced sound from CD lasts about 5 minutes.
4. There is about a three-second interval between Line 18 and Line 19.

After the above instructions were given, the volume of the CD was adjusted, and the MET 6B was administered.

2.2. The University Entrance Examination (English Part) 2014 (CT 2014)

The University Entrance Examination Center (2014) provides the summary of the CT 2014 results shown in (3) and (4).

(3) The Reading Section of the CT 2014

Observations	525,217
Full mark	200
Number of questions	50
Average score	118.87
Standard deviation	41.06
Time limit	80 minutes
Date	January 18th, 2014

(4) The Listening Section of the CT 2014

Observations	519,172
Full mark	50
Number of questions	25
Average score	33.16
Standard deviation	9.40
Time limit	30 minutes
Date	January 18th, 2014

The reading section of the CT 2014 contains questions about pronunciation, grammar, reordering of sentences, and reading comprehension, while the listening section of

the CT 2014 contains questions about listening comprehension.

3. Results

The MET 6B was administered to university freshmen majoring in engineering as of October 2014 whose native language is Japanese. A total of 123 students participated in this study. We analyzed the data (the scores on the MET 6B and the scores on the CT 2014) by a simple regression analysis (correlation analysis). The results are shown in (5)-(7). The significance level was set at .05 for each analysis.

(5) Correlation Between the Scores on the MET 6B and the Total Scores on the CT 2014

Regression Statistics	
Correlation Coefficient (R)	.43
R Square	.19
Adjusted R Square	.18
Standard Error	24.44
Observations	123
P-value	6.19E-07

The regression line is $y = 1.70x + 120.61$.

(6) Correlation Between the Scores on the MET 6B and the Scores on the Reading Section of the CT 2014

Regression Statistics	
Correlation Coefficient (R)	.40
R Square	.16
Adjusted R Square	.15
Standard Error	20.46
Observations	123
P-value	5.61E-06

The regression line is $y = 1.29x + 95.79$.

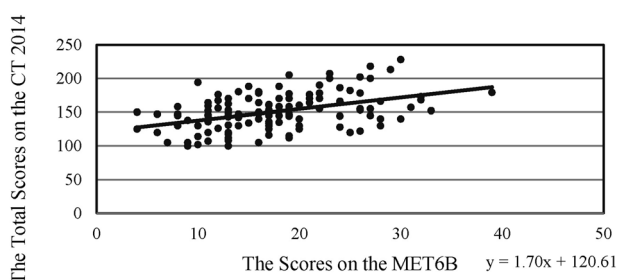
(7) Correlation Between the Scores on the MET 6B and the Scores on the Listening Section of the CT 2014

Regression Statistics	
Correlation Coefficient (R)	.33
R Square	.11
Adjusted R Square	.10
Standard Error	8.11
Observations	123
P-value	6.64E-23

The regression line is $y = .42x + 24.82$.

The correlation between the scores on the MET 6B and the total scores on the CT 2014 is more clearly represented by Graph 1.

Graph 1 Correlation Between the Scores on the MET 6B and the Total Scores of the CT 2014



The above analyses show (1) that the scores on the MET 6B and the total scores on the CT 2014 had a moderate correlation ($n = 123, r = .43, p < .05$) ; (2) that the scores on the MET 6B and the scores on the reading section of the CT 2014 had a moderate correlation ($n = 123, r = .40, p < .05$) ; and (3) that the scores on the MET 6B and the scores on the listening section of the CT 2014 had a weak correlation ($n = 123, r = .33, p < .05$).¹

4. Conclusion

In this paper, we investigated whether the MET 6B could correctly measure English proficiency of university freshmen who major in a particular academic field, such as engineering. Our findings are as follows :

First, for the engineering majors, the MET 6B does not simply predict the scores on the Reading Section of the CT 2014, but rather predicts the total scores on the CT 2014. This is consistent with the results from the data that the MAKI Group collected from university

freshmen of a variety of majors.

Second, the correlation coefficient between the scores on the MET 6B and the total scores on the CT 2014 with respect to the engineering majors ($r = .43$) is far lower than the results of the Maki Group’s past surveys from 2009 to 2014, in which the correlation coefficients between the scores on the MET 6A/6B and the total scores on the CTs are more or less consistent (from .53 to .61), as shown in (8).

This seems to indicate that the current version of the MET 6B does not precisely predict English proficiency of engineering majors in terms of the total scores on the CT. This in turn suggests there may be some unknown factors that cause the correlation coefficient between the scores on the MET 6B and the total scores on the CT 2014 for the English learners majoring in engineering to be far lower than those for the English learners of a variety of majors. It is then necessary to uncover those factors, and depending on what they are, create a different version of the MET as a useful tool to measure English proficiency of students majoring in engineering. The MET can be an effective tool for engineering majors in English education, because the MET can measure the learners’ English proficiency within a very short period of time, and the instructor will be able to provide instruction that is most suitable for learners based on the scores on the MET.

(8) Results of the Analyses of the Scores on the MET 6A/6B and the Scores on the CTs from 2009 to 2014 by the MAKI Group

Year	MET	Observations	Correlation Coefficient (R)	Regression Line
2009	MET 6A	577	.533 (Reading)	$y = 1.34x + 93.19$
			.589 (Listening)	$y = .49x + 12.49$
			.592 (Reading and Listening)	$y = 1.83x + 105.68$
2010	MET 6A	1188	.48 (Reading)	$y = 1.45x + 109.12$
			.52 (Listening)	$y = .45x + 23.14$
			.53 (Reading and Listening)	$y = 1.90x + 132.26$
2011	MET 6B	217	.54 (Reading)	$y = 1.60x + 117.46$
			.56 (Listening)	$y = .51x + 19.75$
			.60 (Reading and Listening)	$y = 2.13x + 136.36$
2012	MET 6B	127	.52 (Reading)	$y = 1.89x + 112.07$
			.58 (Listening)	$y = .56x + 15.02$
			.57 (Reading and Listening)	$y = 2.45x + 127.09$
2013	MET 6B	142	.57 (Reading)	$y = 1.87x + 110.37$
			.48 (Listening)	$y = .46x + 26.16$
			.60 (Reading and Listening)	$y = 2.33x + 136.53$
2014	MET 6B	573	.58 (Reading)	$y = 2.00x + 97.39$
			.51 (Listening)	$y = .45x + 27.15$
			.61 (Reading and Listening)	$y = 2.45x + 124.54$

(i) The Correspondence between Correlation Coefficients and their Characteristics

Correlation Coefficients	Characteristics
$0 \leq r < .2$	almost no correlation
$.2 \leq r < .4$	weak correlation
$.4 \leq r < .7$	moderate correlation
$.7 \leq r < .9$	strong correlation
$.9 \leq r < 1$	extremely strong correlation

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Note

- 1 We follow YANAI (1998) in interpreting values of correlation coefficients. She assumes the following correspondence between correlation coefficients and their characteristics shown in (i).

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工学部の学生における最小英語テスト：2014年 大学入試センター試験（英語）との相関関係

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要約：牧グループは、日本人大学生の英語能力を測定するために、CDを聞きながら、問題用紙の空欄に英単語を埋めていく、簡易型（時間短縮系）英語能力測定試験としての5分間の最小英語テスト（Minimal English Test, MET）を開発した。本研究では、工学部の学生において、6単語毎（5単語置き）に空欄を設けた、6単語毎版（5単語置き版）最小英語テスト（Minimal English Test 6B, MET 6B）を実施し、MET6Bの得点と、大学入試センター試験（2014年）の英語の得点の間に、統計的に有意な相関があるかどうかを調査した。回帰分析の結果、(1)工学部の学生に関して、MET 6Bは、大学入試センターの英語試験における読解力だけを予測するものではなく、読解力と聴解力を合わせた英語総合得点を予測するものであること、(2)これまで牧グループが、様々な学部の学生を対象に行ってきたMET6A/6B調査における、MET6A/6B得点と大学入試センター試験の英語総合点との間の相関係数に比べ（ $.53 < r < .61$ ）、工学部の学生のみにおける、その両テストの得点間の相関係数がはるかに低かった（ $r = .43$ ）ことを報告する。そして、工学部の学生に対しては、現在のMET 6Bバージョンが、大学入試センターの英語試験で測定される英語能力を正確に予測していないことから、そこに働いている要因を解明し、更なる適切なMETのバージョンを開発する必要があることを示唆する。

キーワード：クローズテスト、工学部の学生、英語能力、最小英語テスト、大学入試

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