



Test Scores for International Students and Academic Outcomes

The purpose of this study was to look at the relationships between the test scores that international students provide as part of the admissions process and their success as measured by first semester GPA, performance in their English courses, and retention one year later. The study was based on all degree-seeking undergraduate students who first enrolled between fall 2010 and fall 2014 and who had scores on the IELTS, the TOEFL/IBT, or ESOL (N=958). The IELTS and TOEFL are used in the admissions process, and the ESOL is used for English course placement after students have been admitted.

Table 1 displays the number of students who first enrolled each term along with the percentage who had each of the three types of test scores. Note that the numbers and percentage having each type of score may not add to the total for that term because some students may have presented more than one type of score. Overall, the most frequently presented scores were the IELTS (provided by 70% of the students) followed by the ESOL (provided by 63% of the students). Only 22% of the students provided TOEFL scores. Note that the IELTS and TOEFL are used as part of the admissions process, and the ESOL is used for English course placement after students have been admitted, so multiple scores for students are expected.

Table 1. Number and percent of new international enrollees by first term of enrollment and type of admissions scores

		Had IELTS score	Had TOEFL score	Had ESOL score	N who first enrolled that term
Fall 2010	Count	20	23	1	44
	Percent of term	45.5%	52.3%	2.3%	100.0%
Spring 2011	Count	29	9	2	38
	Percent of term	76.3%	23.7%	5.3%	100.0%
Fall 2011	Count	68	23	7	89
	Percent of term	76.4%	25.8%	7.9%	100.0%
Spring 2012	Count	88	9	22	98
	Percent of term	89.8%	9.2%	22.4%	100.0%
First term Fall 2012	Count	198	31	170	238
	Percent of term	83.2%	13.0%	71.4%	100.0%
Spring 2013	Count	95	13	105	112
	Percent of term	84.8%	11.6%	93.8%	100.0%
Fall 2013	Count	50	34	104	116
	Percent of term	43.1%	29.3%	89.7%	100.0%
Spring 2014	Count	54	23	78	84
	Percent of term	64.3%	27.4%	92.9%	100.0%
Fall 2014	Count	66	45	116	139
	Percent of term	47.5%	32.4%	83.5%	100.0%
Total	Count	668	210	605	958
	Percent of term	69.7%	21.9%	63.2%	100.0%

The outcomes of interest for this study were first semester GPA, performance in students' first English courses, performance in ENGL 101 and ENGL 102, and retention one year later. Table 2 shows the number and percent of international students in their first English courses. Note that 13% did not have grades in any English course. A majority of students (58%) began in an English course for non-native speakers: ENGL 121, 122, or 123.

Table 2. First English course taken by students in the study

Catalog number:	Frequency	Percent
No English course	125	13.0
90	90	9.4
101	134	14.0
101+	6	.6
101P	20	2.1
102	20	2.1
121	80	8.4
122	187	19.5
123	285	29.7
Other English course	11	1.1
Total	958	100.0

What is the relationship of IELTS to first semester GPA, English grades, and retention one year later?

In addition to an overall score, the IELTS provides scores on the skills of listening, reading, speaking, and writing. The overall score was most highly correlated with the listening component ($r=.76$) followed by the reading component ($r=.67$). The strongest relationship between the IELTS and grades in the first English course was for the overall score ($r=.22$) which still is considered to be a weak relationship. The strongest correlation between grades in ENGL 101 and test scores was found for reading ($r=.12$), which is very weak, and no significant relationships were found for grade in ENGL 102 and IELTS test scores. Correlations between the IELTS and first semester GPA were also very weak.

Table 3. Correlations (r) of IELTS scores with English grades and first term GPA

Measure:	Overall	Listening	Reading	Speaking	Writing	1 st English grade	Grade in E101	Grade in E102	1 st term GPA
Overall	r = 1	.757	.673	.468	.556	.216	.074	.036	.051
	N = 668	666	666	666	666	604	476	397	668
Listening		r = 1	.496	.175	.289	.158	.016	-.080	.017
		N = 666	666	666	666	604	476	397	666
Reading			r = 1	.131	.287	.153	.120	.065	.050
			N = 666	666	666	604	476	397	666
Speaking				r = 1	.220	.109	.011	.020	-.018
				N = 666	666	604	476	397	666
Writing					r = 1	.173	.083	.048	.093
					N = 666	604	476	397	666
1 st English grade						r = 1	.456	.190	.402
						N = 833	599	482	833
Grade in E101							r = 1	.243	.369
							N = 599	457	599
Grade in E102								r = 1	.318
								N = 482	482

Did students who were retained one year later have higher IELTS scores compared to those who were not retained? A comparison of the means of the two groups showed no significant differences in IELTS scores (see Table 4).

Table 4. Differences in IELTS scores based on whether students were retained or not

IELTS score:	Retained 1 year later?	N	Mean	Std. Deviation	Std. Error Mean
Overall	No	74	5.3176	.48663	.05657
	Yes	474	5.2479	.42172	.01937
Listening	No	72	5.0208	.74794	.08815
	Yes	474	4.9103	.80424	.03694
Reading	No	72	4.9167	.70711	.08333
	Yes	474	4.8534	.62041	.02850
Speaking	No	72	5.9722	.77318	.09112
	Yes	474	5.9304	.68771	.03159
Writing	No	72	4.9167	.75059	.08846
	Yes	474	4.9947	.68930	.03166

What is the relationship of TOEFL scores to first semester GPA, English grades, and retention one year later?

The TOEFL also has a total score and sub-scores for Listening, Reading, Writing, and Speaking. The form used for this analysis was the IBT, which is the most recent version of TOEFL. The subtest components were highly related to the total score with the strongest relationship found between total score and listening score ($r=.87$) followed by reading score ($r=.80$). Correlations with grade in first English course were quite low; the strongest relationship was between speaking score and grade ($r=.27$). Relationships between TOEFL scores and grades in ENGL 101 and 102 were non-significant, as were the relationships between TOEFL scores and first semester GPA.

Table 5. Correlations (r) between TOEFL scores, English grades, and first semester GPA

Measure:		Total	Listen	Read	Write	Speak	1 st English grade	E101 grade	E012 grade	1 st term GPA
IBT Total	r	1	.866	.802	.767	.663	.132	-.014	.051	-.100
	N	211	208	207	208	208	161	96	77	211
IBT Listen	r		1	.725	.458	.447	.010	-.051	.035	-.147
	N		208	207	208	208	160	95	77	208
IBT Read	r			1	.402	.186	-.052	.023	.109	-.055
	N			207	207	207	159	95	77	207
IBT Write	r				1	.607	.227	-.033	-.014	.003
	N				208	208	160	95	77	208
IBT Speak	r					1	.274	.031	-.003	-.118
	N					208	160	95	77	208
1 st English grade	r						1	.456	.190	.402
	N						833	599	482	833
Grade in E101	r							1	.243	.369
	N							599	457	599
Grade in E102	r								1	.318
	N								482	482
1 st term GPA	r									1
	N									958

Unlike the IELTS, significant differences were found between those who were retained and those who were not based on their TOEFL scores. However, those who were NOT retained had higher scores compared to those who were retained. Details can be found in Table 6.

Table 6. TOEFL mean scores based on retention status one year later

Test score:	Retained one year later?	N	Mean	Std. Deviation	Std. Error Mean
Total score**	No	44	87.61	19.980	3.012
	Yes	99	75.51	18.463	1.856
Listening**	No	41	23.00	5.324	.832
	Yes	99	18.59	5.819	.585
Reading**	No	41	23.51	4.417	.690
	Yes	99	17.70	7.213	.725
Writing**	No	41	22.10	4.091	.639
	Yes	99	19.03	5.446	.547
Speaking*	No	41	21.85	4.078	.637
	Yes	99	20.26	4.379	.440

*Significant a $p \leq .05$

**Significant at $p \leq .01$

What is the relationship of ESOL scores to first semester GPA, English grades, and retention one year later?

The ESOL is a relatively recent measure used for English course placement after students have been admitted. As shown by Table 7, considerably more students with IELTS scores have also taken the ESOL

compared to students with TOEFL scores. In general, it appears that the ESOL measures something different compared to either the TOEFL or the IELTS because correlations between the measures are quite low. The only exception is the strong correlation ($r=.61$) between TOEFL speaking score and ESOL score. With a correlation of .38, the ESOL is also more predictive of students' grades in their first English courses compared to either the TOEFL ($r=.13$) or the IELTS ($r=.22$). Other correlations with grades, however, were quite similar to those obtained for the TOEFL and the IELTS. No significant differences were found between students who were retained and those who were not based on their ESOL scores.

Table 7. Correlations of ESOL score with other tests and with grades

Measure:	N of cases	Correlation with ESOL
TOEFL Total score	103	.210
TOEFL Listening score	102	-.052
TOEFL Reading score	101	-.214
TOEFL Writing score	102	.440
TOEFL Speaking score	102	.606
IELTS Overall score	417	.347
IELTS Listening score	417	.274
IELTS Reading score	417	.201
IELTS Speaking score	417	.111
IELTS Writing score	417	.264
Grade in first English course	576	.376
Grade in ENGL 101	395	.043
Grade in ENGL 102	285	-.052
First term GPA	605	.143

Did an increase in the IELTS score for admission result in increased academic success?

Based on results of a prior study, the score on the IELTS needed to be admitted to Boise State was moved from 5.0 to 5.5 beginning with students who were admitted in the fall of 2013. Did students who were admitted under the new standard have greater success compared to those who were not? Table 8 shows that the average IELTS scores shifted significantly upward when the cut-score was changed.

Table 8. Mean IELTS scores for students admitted under the old and the new cut-offs

Test score:	IELTS cutoff	N	Mean	Std. Deviation	Std. Error Mean
Overall	Old standard of 5.0	498	5.2149	.38849	.01741
	New standard of 5.5	170	5.5941	.48950	.03754
Listening	Old standard of 5.0	496	4.8589	.75159	.03375
	New standard of 5.5	170	5.4559	.77848	.05971
Reading	Old standard of 5.0	496	4.8175	.58472	.02625
	New standard of 5.5	170	5.2441	.67771	.05198
Speaking	Old standard of 5.0	496	5.9022	.70282	.03156
	New standard of 5.5	170	6.0941	.73780	.05659
Writing	Old standard of 5.0	496	4.9395	.66997	.03008
	New standard of 5.5	170	5.2912	.67208	.05155

Did students who were admitted under the higher standard also have higher grades in English and for their first semester? As shown by Table 9, students who entered under the new standard had higher grades in their first English course and at the end of their first semester. However, their performance in ENGL 101 and 102 was similar to students who were admitted under the old standard. Students admitted under the new standard also had significantly higher retention rates (98% vs. 85%).

Table 9. Group Statistics

Grades:	Used new IELTS standard	N	Mean	Std. Deviation	Std. Error Mean
Grade in 1 st	Old standard of 5.0	452	1.9345	.85379	.04016
English course**	New standard of 5.5	152	2.1862	.92386	.07493
ENGL 101 grade	Old standard of 5.0	389	3.0183	1.14302	.05795
	New standard of 5.5	87	3.0701	1.19652	.12828
ENGL 102 grade	Old standard of 5.0	353	3.1105	1.14952	.06118
	New standard of 5.5	44	3.0432	1.52260	.22954
1 st term GPA**	Old standard of 5.0	498	2.6924	1.31802	.05906
	New standard of 5.5	170	2.9750	1.10076	.08442

Summary

Three different tests have been employed to make admissions and course placement decisions for undergraduate international students: IELTS, TOEFL/IBT, and ESOL. The purpose of this study was to look at the relationships between the three tests and academic success as measured by grades in students' first English course, grades in ENGL 101 and 102, first semester GPA, and retention one year later. In general, the relationship between test scores and grades were very weak. This finding does not necessarily indicate that no relationship between test scores and grades exists. Rather, one possibility may be that a relationship does exist but that students who would not perform well were eliminated as part of the admissions process. Because we only see grades for those who were admitted, it appears that there is no relationship. Thus, the test scores may be useful, but largely for the purposes of admissions.

There was also little evidence of a relationship between test scores and retention. When a significant relationship was found between TOEFL scores and retention, it appeared that the stronger students left Boise State instead of the reverse. Again, different results might have been found if everyone had been admitted. In addition, the overall retention rate of 83% was quite high, making it difficult to reach statistical significance.

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Prepared by: Marcia Belcheir, Ph.D.

Office of Institutional Research