

TOEFL and FCE Tests as Predictors of Academic Success for Advanced Students at the University of Bahrain

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مدى صدق درجات اختبار التوفل (TOEFL)
واختبار (FCE) في التنبؤ بنجاح طلبة تخصص
اللغة الإنجليزية في جامعة البحرين

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الملخص

تستهدف الدراسة الحالية تحديد مدى صدق درجات الطالب في اختبار التوفل (TOEFL) و اختبار الشهادة الأولى في اللغة الإنجليزية (FCE)، في التنبؤ بنجاحه في الجامعة كما يقيسه معدله التراكمي الإجمالي (GPA). وقد بلغ أفراد العينة البحثية ١١٢ طالبا وطالبة يدرسون اللغة الإنجليزية في السنتين الثالثة والرابعة كتخصص رئيس في كلية الآداب بجامعة البحرين.

وقد أبرزت نتائج الدراسة إمكانية التنبؤ الدقيق بنجاح طالب تخصص اللغة الإنجليزية في الجامعة من واقع درجاته الفرعية في اختبار التتمة (Cloze test)، وكذلك في مقررات اللغة الإنجليزية من واقع درجاته الفرعية في القسم الثالث من اختبار التوفل ألا وهو اختبار المفردات والفهم القرائي (Vocabulary and Reading Comprehension) في التوفل، وكذلك من واقع درجاته الفرعية في بعض الاختبارات الفرعية المكونة لاختبار الشهادة الأولى في اللغة الإنجليزية (FCE).

وبناءً على ذلك يوصي الباحثان باستخدام اختبار اللغة الإنجليزية كلغة أجنبية التوفل (TOEFL) كأداة لتقويم درجة تمكّن الطالب من اللغة الإنجليزية في سياق تدريسها كلغة ثانية (ESL Context) لطلبة الجامعة.

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Abstract

The purpose of this study is to examine the multivariate relationships of the Test of English as a Foreign Language (TOEFL) and the First Certificate of English (FCE), and to determine whether students' total score on the TOEFL or their overall score on the FCE tends to be a better predictor of their success at the University as predicted by the overall grade point average (GPA). Subjects were 112 students enrolled at the University of Bahrain. The multivariate prediction of the GPA from the scores on the FCE is very accurate. Regression analysis revealed that the FCE Cloze, and Sentence Transformation subscores and also the listening component of the TOEFL are the only test scores that contributed to the prediction of student's GPA. As far as their GPA in English is concerned, section 3 of the TOEFL is seen to be the most prevalent factor. However scores on the FCE cloze, and Sentence Transformation II sections share some variance with both factors. Results of the study indicate that English major need to improve their comprehension and acquisition of English vocabulary in order to reach a level equivalent to that of ESL learners.

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Introduction

The Test of English as a Foreign Language (TOEFL), which is developed and administered by the Educational Testing Service, is an internationally recognized test given to students who seek admission to graduate programs in 2,400 colleges and universities in the United States and Canada. It is considered to be the most widely used test determining the extent to which international students have developed the English language skills necessary for successful college-level study in these two countries. A number of studies have attempted to measure the predictive validity of the TOEFL scores and have indicated the success of the test as a predictor of students' academic achievement as demonstrated by their overall grade point average (GPA). The first study of this kind was that of Ayers and Peters (1977) on 50 students who had completed a master's program in the physical sciences or engineering. They found a significant correlation between the TOEFL scores and students' composite GPA. While this result has been confirmed by a number of further studies conducted on the TOEFL scores as determinants of academic achievement of graduate and undergraduate students (Bostic, 1981; Stover, 1981; Perry, 1989; Stoyhoff, 1991; Schmidt, 1992; Konyu-fogel, 1994), the findings of other studies (Sokari, 1980; Hale, et al., 1984; Light, et al., 1987; Taylor, 1989; Hu, 1991; Ayres and Peters, 1977; Case, 1993; QI, 1994; Yan, 1995) suggest that using the TOEFL as a major determinant of an international student's admission to various academic programs in colleges and universities as well as a predictor of the students' subsequent academic success should be reconsidered. Although the First Certificate of English (FCE), which is administered by the University of Cambridge Local Examinations Syndicate, appears to measure the same common aspects of language proficiency being predicted by the TOEFL (Bachman et al., 1990), to the best of our knowledge, not much research that focuses on the ability of the FCE scores to predict international students' academic success as measured by his or

her composite GPA has yet been conducted. This fact might be explained by at least three reasons: First, the FCE has not been used as a criterion for admission at British Universities as its level is considered to be below the standard required for studying at a university. Second, the FCE measures the same kind of skills assessed by the TOEFL but on a different level of English language proficiency. Third, the reliability of the FCE test is somewhat questionable because the test has not been standardized on a fixed, standard content, and also because it requires some creative use of English language in its composition part. Consequently, the FCE, as compared to the TOEFL, has received little attention from the specialists in the field of English language testing. This is evident from the relatively small number of studies which have examined aspects of the FCE as an EFL test as compared with the TOEFL (Bachman et al., 1990; Choi, 1990; Kunnan, 1992; Choi and Batchman, 1992 and Ryan and Batchman, 1992). Results of Al-Musawi and Al-Ansari (1999) on undergraduate students at the University of Bahrain have revealed that the FCE cloze, and sentence transformation sub-scores are the only test scores that tend to contribute to the prediction of both students' GPA and their GPA in English courses. Their results have indicated that the FCE is a better test instrument than the TOEFL, particularly when English is being taught as a foreign language.

Purpose

The first purpose of the present study was to determine the relationship of success of Bahraini students in a BA degree program at the University of Bahrain as measured by GPA, with their scores obtained on the TOEFL, together with their scores on the FCE examinations. The study is limited to such a group of English majors as their graduation depends on attaining a minimum score of 500 as part of the course continuous assessment and secondly they are the ones whose courses are highly related to the contents of TOEFL and FCE tests. Thus it is interesting to determine which of the sub-categories of both these tests are better predictors of their success in English than others.

The second purpose of the study was to determine whether the students' total score on the TOEFL or their overall score on the FCE test tended to be a better predictor of their success at the university as measured by their overall academic GPA in all the subjects studied at the University. Since both tests are used for only classroom purposes, it will be interesting to determine which of the two should be used for screening purposes if English proficiency were to become a criterion for admission to university.

Methods

Sample: The subjects for this study consisted of 112 third- and fourth-year students who were following a degree programme in English Language and Literature at the University of Bahrain. Their degree is based on a credited system of university education. Students need to complete 131 credits in order to graduate, 93 of which are studied within students' major and minor subject specialisation. The subjects were homogeneous in respect of age, nationality, mother tongue and both cultural and educational background. All these subjects sat for both FCE and TOEFL tests at the end of each academic semester and were given the normal time that is normally specified in the tests manuals set by the actual examination boards.

The TOEFL is designed to evaluate the English proficiency of people whose native language is not English. The test uses a multiple-choice format to measure the ability to understand North American English. The institutional form of the TOEFL used in the current study consisted of three sections: Listening Comprehension (Section 1), Structure and Written Expression (Section 2), and Vocabulary and Reading Comprehension (Section 3). Scores from the three are combined to yield a total score that is reported in addition to the section scores. Each section has its own scale, ranging from about 20 to about 68. The total score is derived by summing the three scores and multiplying the result by 10/3.

Section 1 of the TOEFL measures the ability to understand English as it is spoken in North America. Section 2 measures the ability to recognize language that is appropriate for standard written English. Section 3 measures the ability to understand the non-technical reading matter.

First the purpose of the FCE is to assess the English language skills of people whose native language is not English. This test consists of seven papers: Reading Comprehension involving multiple-choice items (M.C.) plus reading passages, Cloze test, Sentence Transformation tests, Word Formation test, Listening Comprehension test, and an Interview. Paper 1 includes forty 4-option multiple-choice items in parts: vocabulary (25 items) and reading comprehension (15 items). Paper 2 includes a cloze test in the form of a passage with blanks, which the examinee has to fill in each with one word only. Paper 3 is a reading passage followed by five 4-option multiple-choice questions. Paper 4 of the FCE is a set of ten sentences, which the examinee has to rewrite without changing the original meaning of each sentence. The examinee has got to use the words given at the beginning of the sentence without changing the meaning (S.T.I). In the second part of the sentence transformation test, the examinee has

to change the second sentence so that it has a similar meaning to the first sentence, using the word given. The examinee must not change the word given and must use between two and five words (S.T.II). This second sentence transformation test is slightly more difficult than the conventional style used in part one of the sentence transformation test. Paper 5, which also includes ten sentences, assesses students' linguistic ability in word building. Paper 6 consists of a serial of recorded texts, and the examinee has to answer the different questions based on his or her understanding of the texts. Finally, Paper 7 assesses the student's ability to give short talks on prepared topics, and to discuss how to solve specific problem situations. This test item has not been considered into computing the data of the present study simply because the researchers have found that interview results would not be that reliable as the examinees were tested by a number of different interviews. So it was felt that they would simply jeopardize the overall results. The results would have been reliable had they been evaluated by one single FCE exam interviewer.

Analysis: A general linear multivariate regression was made to all the data obtained from the course instructors using the SPSS for the overall score of the FCE and for the TOEFL total score. These analyses were supplemented by a stepwise regression to explore the contribution of certain sub-scores to the multivariate model. The same general linear multivariate regression was computed, using the total TOEFL score and the overall FCE as independent variables. The general linear multivariate regression was also applied for the students' composite grade point average (GPA) and for their overall GPA in the courses taken as part of the students' English major English courses (ENGP). The general linear model differs from a stepwise regression in its considerations of the contributions of all test scores simultaneously. In effect, the final product of a stepwise regression in which all of the independent variables were entered into the model is equivalent to the general linear regression.

Based on the multivariate regression equations predicted grade point averages (GPAs) were computed. For examinees, who achieved each rounded predicted GPAs, the mean observed GPA was computed and these were plotted against the predicted GPAs. These plots were examined to determine if the fits of the predicted GPAs were equally accurate throughout the range of observed GPAs, that is, in relation to the level of the examinees' achievement. The same procedure was followed for the grade point averages (ENGP).

Results

Table 1 shows the means and standard deviations of the component variables pertaining to both the TOEFL and the FCE examinations taken by the whole sample.

Table 1: Means and standard deviations achieved on TOEFL and FCE tests

TOEFL	Listening	549.16	54.03
	Structure	544.02	61.40
	Reading	524.46	57.83
	Total score	539.04	49.01
FCE	Multiple Choice	14.15	2.83
	Cloze	11.01	3.65
	Passage	4.62	2.62
	Sentence Transformation I	12.89	3.51
	Sentence Transformation II	13.32	3.86
	Word Formation	7.17	1.63
	Overall score	64.52	11.47

It is interesting to note that the students' mean scores on sections 1, 2, and 3 of the TOEFL tend to reliably correspond to the mean scores achieved by a large sample of examinees ($n = 731297$) who took this test from July 1995 through June 1996. These scores were 52.10, 51.81 and 51.38, respectively, with corresponding standard deviations of 7.30, 7.62, and 8.53. The total score mean of these examinees, on the TOEFL, was 517.00 with a standard deviation of 71.04 (Educational Testing Service, 1997).

It is clear in Table 3 that the TOEFL section scores are highly intercorrelated (median = 0.57) as compared to the intercorrelations among five FCE scores where the median equals 0.36 (Table 2). It also appears that, compared to the correlation coefficients of the TOEFL scores with the GPA and the ENGPA, all correlation coefficients of FCE scores with the two variables are of high magnitude ($p < .01$), particularly those of the cloze ($r = .47$ and $r = .40$ respectively) and the sentence transformation ($r = .53$ and $r = .48$ respectively).

Table 2: Bivariate correlation coefficients among FCE scores, Grade Point Average (GPA) and GPA in English courses (ENGPA)

FCE								GPA	ENG GPA
Variable		M.C.	Cloze	S.T.I	S.T.II	W.F	Total		
FCE	MC	—							
	Cloze	.55	—						
	ST I	.37	.44	—					
	ST II	.38	.53	.61	—				
	WF	.41	.18	.21	.61	—			
	Total	.75	.71	.73	.73	.46	—		
GPA		.36	.47	.53	.52	.33	.67	—	
ENGPA		.66	.40	.48	.52	.45	.76	.69	—

*All the above bolted typed results in bold are statistically significant at 0.01

Table 3: Bivariate correlation coefficients among TOEFL scores Grade Point Average (GPA) and GPA in English courses (ENGPA)

		TOEFL				GPA	ENGPA
Variable		Listening	Structure	Reading	Total		
TOEFL	Listening	—	—	—	—	—	—
	Structure	.46	—	—	—	—	—
	Reading	.63	.64	—	—	—	—
	Total	.80	.83	.89	—	—	—
GPA		.35	.39	.31	.42	—	—
ENGPA		.55	.62	.60	.69	.69	—

Multivariate correlations

Tables 4 and 5 show the results of the stepwise regression predicting students' grade point average (GPA), and GPA in English courses, respectively, using the component scores of the TOEFL and the FCE as independent variables. Note that the TOEFL section scores and the subscores on the passage and

the word-formation parts of the FCE did not contribute enough to the prediction of students' GPA to be maintained in the linear model. The same appears to be true with regard to the students' GPA in English courses except the inclusion of TOEFL Section 3 scores in the linear model (0.5 probability criterion was utilized).

**Table 4: Stepwise regression of TOEFL and FCE scores
Onto the overall GPA (forward selection)**

Dependent Variable	Entry Order	Independent Variables	Partial R- square	
Overall GPA	3	TOEFL	Section 1	0.05
	—		Section 2	—
	—		Section 3	—
	—	FCE	M. C.	—
	1		Cloze	0.57
	4		S.T.I	0.02
	2		S.T.II	0.11
	—		WF	—
Total r - square			0.75	

**Table 5: Stepwise regression of TOEFL and FCE scores onto overall GPA in
English courses (forward selection)**

Dependent Variable	Entry Order	Independent Variables	Partial R - square	
Overall ENGPA	5	TOEFL	Section 1	0.01
	4		Section 2	0.13
	1		Section 3	0.61
	6	FCE	M. C.	0.02
	2		Cloze	0.02
	—		S.T.I	—
	3		S. T.II	0.05
	—		Word Form.	—
	Total R - square			0.84

Joint Distribution

Table 6 shows the median scores attained on the TOEFL and the FCE, with-in score intervals of both tests. The intervals were chosen to represent points where users typically set passing scores. Table 7 shows the joint TOEFL and FCE distributions.

It is difficult to interpret these data since there is no exact agreement among the tests of the construct under measure. However, some interesting patterns have emerged. For example, there were few differences in the FCE skills of examinees between TOEFL total scores of 463 and 600. This interval, however, accounted for more than a half (73.1%) of the examinees. It seems that an FCE score between 54.5 and 59 attained by 10.70% of the examinees, is earned by people with varied TOEFL skills. Furthermore, 30% of examinees who scored less than 60.00 in the FCE (Low-achieving group) got low scores also in the TOEFL. It appears that a score between 61 and 74 in the FCE exam, achieved by 14.28% of the examinees is earned by a close percentage (51.02%) of the average-achieving group in the TOEFL. Similarly, 80% of the high achievers in the FCE test have remained as people with high language skills in the TOEFL test.

Table 6: Median and TOEFL total, and FCE total scores attained by examinees who scored within selected scoring intervals of both tests

Test	Score interval	Percent in interval	Closest scores to median	
			TOEFL total	FCE total
TOEFL total	200-460	5.40	—	41.00
	463-500	17.80	—	53.00
	503-550	30.30	—	61.00
	553-600	25.00	—	73.00
	603 and higher	21.50	—	83.00
FCE total	30-54	15.20	463	—
	54.5-59.0	18.70	503	—
	59.5-62.0	10.70	523	—
	62.5-68.0	17.00	547	—
	68.5-75.0	19.60	563	—
	76 and high	18.8	603	—

Table 7: Joint frequencies of FCE and TOEFL scores in selected ranges

FCE total		TOEFL total		
		397-499	500-549	550 and higher
Less than 60	N	12	11	17
	%	30	27.5	42.5
61-74	N	7	25	17
	%	14.28	51.02	34.69
Greater than 75	N	1	3	16
	%	5	15	80

Discussion

Results of this study show that the students' composite GPA and the GPA in English courses are highly correlated with Section Three on the TOEFL, and with the sentence transformation and the cloze sections on the FCE. In terms of predicting a student's academic success at the university as measured by the overall grade point average (GPA), TOEFL scores did not add as much to the model as did the scores on the Cloze and Sentence Transformation sections of the FCE exam. It is only the scores of Section Three of the TOEFL, along with, to some extent, the scores of the Cloze and the Sentence Transformation II of the FCE exam that are found to be good predictors of students' achievement in English courses taught at the University. It appears that at upper levels of language learning, students' success in language learning is determined by their lexical and syntactic knowledge in reading comprehension together with their ability in understanding and producing correct grammatical sentences. The more proficient they are in these two language components, the higher their performance is in the exam. This is found to be true for students approaching their graduation year at the University. At this stage, the more proficient they are in the language, the more they can be identified as bilingual students who are capable of learning English as a medium of instruction.

The fact that the students' scores on sections 1 and 2 of the TOEFL tests do not appear to be effective predictors of their academic success at the University as measured by the overall GPA seems to corroborate with the previous findings related to the predictive ability of the TOEFL test (Sokari, 1980; Hale, et al., 1983; Light, et al., 1987; Taylor, 1989; Hu, 1991; Ayres and Peters, 1977; Case, 1992; QI, 1994; Yan, 1995; Hui, 1995;). However, one discrepancy that can be seen in this study is that the TOEFL will not be a good predictor for the study

sample because it is not an admission requirement at the University, but the students' success in the BA programme depends on their success in the TOEFL.

The findings of this study suggest that students' proficiency in English is determined by both their performance on Section Three of the TOEFL test and on certain components of the FCE exam. The present results for students near graduation yield a view in that at upper stages of learning English, certain components of the two tests share almost similar correlational magnitude. A possible reason for this is that although the overwhelming majority of Bahrainis are taught within an EFL context, they gradually begin to acquire the language as a medium of instruction at graduation stages of their BA programme.

Since the scores of the FCE Cloze and Sentence Transformation sections were found to yield less correlational magnitude with the students' academic performance at the University, Section Three of the TOEFL test needs to be incorporated in all the University major language courses as a required component. Students who have interest in either taking a TOEFL test or in pursuing their postgraduate study abroad can be offered an elective course in TOEFL preparation, preferably at the fourth-year level.

It is true to maintain that the TOEFL may be an effective test instrument in an ESL learning context where English is used as a medium of instruction, and where students have both the linguistic and cultural background to pursue their studies through English. This is seen to be viable at the upper stages of learning the language where English is regarded more than a foreign language. Therefore, TOEFL tends to be a better predictor of students' attainment in second language learning circumstances where they will be normally be better prepared, culturally speaking, to integrate with LI environment. In contrast, the FCE exam is a more appropriate test instrument for learners who seek to learn the language merely to develop their manipulative skills in acquiring English. This appears to be especially true of first- and second-year students who first need to reach the FCE standard before being adequately prepared to pass the TOEFL test (Al-Musawi and Al-Ansari, 1999).

One major pedagogical outcome of this study is that although the FCE is not recognised as a university entry requirement at either British or particularly Arab universities, its value as a test instrument should not be underestimated. Since this study has revealed the significance of certain components of both the TOEFL and the FCE tests, educational practitioners need to adopt pedagogical strategies by which these components can be better enhanced in the learning process. It is evident that Section Three of the TOEFL, together with the Cloze and Sentence

Transformation II of the FCE, have signified the importance of developing adequate knowledge of lexical and syntactic abilities in reading comprehension. As far as students' knowledge of English grammar is concerned, teachers of English should develop in their students the language skills that will make them more proficient in adopting better analytical thinking while attempting to comprehend the underlying structures of most common principles of English grammar. This means that their entire approach to teaching the language is to be reviewed.

Dwaik (1997) conducted a study on the role of lexical and syntactic knowledge in English as a foreign language reading comprehension. A series of correlational analyses was used to determine the relationship between lexical and syntactic knowledge and students' reading comprehension of English as a foreign language (TOEFL). The results of the study showed significant correlations between lexical and syntactic knowledge with reading comprehension. Results of the step-wise regression analyses of the present study have further supported those obtained by Dwaik (1997).

The pedagogical outcome derived from the above is that teachers of English, particularly those involved in teaching it in ESL learning environments, should develop in their students the ability to comprehend authentic texts of advanced reading passages. These texts may be in the form normally found in Section Three of the TOEFL test. It was found that the better they perform on this section of the test, the better tend to be their overall comprehension reading skills. If their success in the language courses is determined by their performance on Section Three of the TOEFL test, their English language teachers should provide them with adequate reading texts which aim at enhancing their reading skills and enabling them to reach that of native-speakers' reading strategies.

The conclusion that can be drawn from this study is that TOEFL is a more appropriate international test for learners of English as a second language than the FCE. The latter has proved to be suitable for students whose learning of the language is confined to its EFL context and for those who are perhaps not learning the language as a medium of instruction. If the TOEFL is to be used as a language test, it needs to be redesigned to suit the language requirements of non-native speakers of English, who may not be taking the test for admission to an American university or living in the United States. In this regard, Traynor, who was once in charge of preparing candidates to take the TOEFL in Bahrain, suggested the 'TOEFL results need to be approached with more caution than they are at present' (Traynor, 1985: 47). Although this remark was made fourteen years ago, its validity may still prevail in foreign language learning contexts.

A number of issues related to language testing have emerged from the find-

ings of this study and which form a significant basis for future studies in similar fields. It will be interesting, for example, to undertake comparative studies on the measurement of prediction of various standardised EFL or ESL to students' academic success. Similar studies can also be undertaken to examine the prediction of such tests to success in EFL at various levels of language learning and with various types of learners. Such an approach to future research may reveal more significant findings which will contribute to the understanding of language tests

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