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Establishing Predictive Validity of English Exit Test: Students' EET Performance and Academic Achievement

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ABSTRACT

Graduating students of UiTM are required to sit for English Exit Test (EET) whose objective is to gauge students' English proficiency level and their readiness for the workplace. Since the test is administered before students finish their studies, it is important to examine if EET has a predictive validity in determining the academic performance of UiTM students. We use the students' CGPA (Cumulative Grade Point Average) to gauge their academic performance and English language proficiency since English is used as a medium of instruction at UiTM. A four-part predictive validity study was conducted on the relationship between students' EET performance and academic achievement. A sample of 1,436 students' EET results and CGPA from various faculties were analysed based on the results from four semesters which were 2016/2, 2016/4, 2017/2 and 2017/4. The relationship among the scores were summarised with correlation coefficients and a series of one-way ANOVA tests were run to see if there were any significant mean differences in the scores based on faculties in a span of two years. The findings revealed that there were positive correlations between students' EET results and their CGPA. Thus, it can be concluded that EET has the predictive validity for students' academic achievement which is the CGPA. The present study also found that EET can be considered a good test as the results of EET could differentiate good students from weak ones. This was determined by running a series of One-way ANOVA tests. The results revealed that faculties whose students had high English proficiency level scored better in EET than those whose students who had low English proficiency level. Therefore, the findings indicate that EET has a potential in differentiating high English proficient students from low English proficient students for their language readiness in the workplace.

Keywords: English Exit Test, predictive validity, EET performance, academic achievement

INTRODUCTION

The English Exit Test (EET) is an exit requirement for UiTM students with the objective of gauging students' English level of proficiency for the workplace. The test comprises of two parts: Writing and Speaking. The EET is prepared in accordance to the Common European Framework of Reference for Languages or better known as CEFR. Results of the test will determine the candidates' level of proficiency based on CEFR: Basic user, Independent user, or Proficient user. The tests are taken by semester 5 and 6 students prior to their Internship and final semester at the university.

The test has two parts which are written and spoken tasks. The written task requires students to write an email and an article on a given situation. In the speaking task, students orally respond to series of questions pertaining to the workplace, namely simulated conversation (social situations), job interview, and oral presentation (reporting and describing given information and visuals).

EET has been administered since 2016, thus, it is timely for APB to examine its validity as a tool to gauge students' English level of proficiency before they graduate. In this paper, EET is investigated if it has a predictive validity in determining the academic performance of UiTM students. Thus, the research questions for this study are:

1. Does EET have a predictive validity in determining students' academic achievement (CGPA)?

2. Can EET be considered as a good test in differentiating high proficient students from low proficient students?

LITERATURE REVIEW

The concept of predictive validity has been discussed by many scholars (Mislevy & Rupp, 2010; Haele & Twycross, 2015; Andrew, 2017; Mohajan, 2017). Predictive validity is to measure how well a test predicts abilities. A group of subjects is tested for a certain construct and then comparing them with results gathered at some point in the future. It is considered as essential in most educational and employment settings in predicting future performance (Shuttleworth, 2009). Many studies have investigated predictive validity of a particular test on the students' academic performance. For example, Machingambi (2017) investigated the predictive validity of teacher made tests on students' performance in primary schools in Zimbabwe. The findings revealed that the students' performance in the teacher made tests was significantly correlated to their performance in the criterion tests. Another study undertaken by Kobrin, Patterson, Shaw, Mattern, and Barbuti (2008) based on data from 150,000 students from 110 four-year college and universities across the United States found that the combination of High School GPA and SAT is an excellent predictor of students' performance in first year university. The authors also highlighted the importance of determining the relationship between the success of students leaving high school after undergoing a particular study programme and their success during or towards the end of their programmes as undergraduates. Riazi (2014) examined the predictive validity of a newly launched Pearson Test of English (PTE) Academic on the IELTS scores. The findings showed that PTE academic was significantly correlated to the IELTS scores in all of the language skills; listening ($r= 0.661$, $p<0.01$), reading ($r=0.677$, $p<0.01$), speaking (0.723, $p<0.01$)

and writing (0.686, p<0.01). A study conducted by Bailey and Shaw (2011) also discovered that Cambridge assessments predicted preparedness for and continued academic success at U.S. universities in terms of first year Grade Point Average (GPA). Meanwhile, Vulperhorst, Lutz, de Kleijn and van Tratwijk (2018) found that university students' final GPA was correlated with High School GPA (r=.62, p<0.01), Applied Mathematics (r=0.46, p<0.01), Mathematics (r=0.48, p< 0.01) and English (r=0.37, p<0.01). However, Alavi (2012) found that it was not definite that students who scored high in examinations at high school and pre-university level would score high in Iranian National University Entrance English examination (INUEEE) when he examined the predictive validity of final English examinations as a measure of success in INUEEE. Meanwhile, in employment settings, a study on predictive validity of selection into postgraduate training for UK general practice found that performance ratings at selection (short listing based on criteria) predicted job performance rated by supervisors, as well as performance of clinical skills and applied knowledge for licensing (Patterson, Lievens, Kerrin, Munro & Irish, 2013). Grobelny (2018) studied the role of cognitive abilities in predicting job performance. He found that specific mental abilities (SMA) approach is a valid job performance predictor. According to Ekuma (2012), maximizing predictive validity should be a primary concern of any employers. This can be achieved by combining carefully chosen selection methods, well trained recruiters, and adherence to ethical and legal standards.

METHODOLOGY

In this section, the research design, sample, research instrument, data collection procedures and data analysis are outlined.

Research Design

A quantitative research design which focused on gathering numerical data to explain a particular phenomenon was employed in this present study. This study investigated the relationship between variables, which is also known as a correlational research design. This design is considered as appropriate as it assumes one of the purposes of social sciences is to discover relationships amongst phenomena in predicting and controlling their occurrences (Machingambi, 2017). Thus, these relationships are to determine whether EET predicts the students' academic performance and whether it can be considered as a good test. A four-part predictive validity was assessed based on the students' EET performances and their academic achievement; CGPA from four academic semesters in a duration of 2 years. The correlation coefficients of EET results and CGPA were computed in order to determine whether EET was valid for prediction purposes. To determine whether

EET is a good test in differentiating high English proficient students from low English proficient students, the students' EET results from different faculties were examined.

Sample and Sampling Technique

A sample of 1,436 students was selected from a population of 24,747 students who sat for EET in 4 academic semesters which were 2016/2, 2016/4, 2017/2 and 2017/4. The students from one faculty and 2 programmes were excluded from this population as the medium of instruction and the students' assessments were not in English. The sample size of each semester was calculated by using 95% confidence level and 5% confidence interval. According to Hazra (2017), these values are commonly used in research as they provide a range of values which is likely to contain the population parameter of interest. Table 1 below shows the distribution of sample for each semester.

Table 1: The Sample Size

Academic Semester	**Population**	**Sample Size**
Semester 2016/2	2989	341
Semester 2016/4	6074	362
Semester 2017/2	6808	364
Semester 2017/4	8967	369
Total	24,747	1,436

After the sample size of each semester was determined, students who took EET in each faculty for the four semesters were selected by using stratified proportionate sampling technique. With proportionate sampling, the sample size of each faculty was proportionate to the population size of each semester. Thus, each faculty would have the same sampling fraction (sample size was divided by the population size). The same sampling fraction for every subgroup would ascertain the improvement on a simple random sample because it ensured that the different subgroups in the population were correctly represented in the sample (Moser & Kalton, 2016). Therefore, after the sampling fraction was calculated, the students from each faculty were then randomly selected to make up the sample size.

Research Instruments

The main research instrument was the EET. This test consisted of two sections; Writing and Speaking. In the Writing section, there were 2 tasks. Task 1 was an email writing task and Task 2 was to write an article / part of a report / part of a proposal on an assigned work-based task. The Speaking section had 3 tasks. Task 1 was a simulated conversation, Task 2 was a job interview and Task 3 was an oral presentation. The Speaking section was a computer-based test. The rating procedure for both the writing and speaking tasks was based

on CEFR rating (Score 1-Score 6) in which the students were categorised into 6 different bands: Proficient User (C1, C2: 5, 6), Independent User (B1, B2: 3, 4), Basic User (A1, A2: 1, 2). The scores of EET were keyed in and uploaded by the examiners to Result Entering System (RES).

Data Collection Procedures

The data of the students' EET results and CGPA were obtained from the Academic Affairs Division UiTM. There were 24,747 students, however, EET results and CGPA of only 1,436 students were analysed based on the sample size and sampling technique previously explained in order to determine the relationships between students' EET performance (EET results) and students' academic achievement (CGPA) in the 4 academic semesters. In order to see if EET could differentiate high English proficient students from low English proficient students, only EET results were used in examining this phenomenon.

Data analysis

In establishing the EET predictive validity, Pearson's correlations were run to examine the relationships between students' EET performance and students' academic achievement. The correlation coefficient between students' EET performance and students' academic achievement was also known as the validity coefficient. The validity coefficient can range from -1 to + 1 and the coefficient values which are close to 1 indicate high predictive validity of a test (Mislevy & Rupp, 2010). To determine whether EET can be a good test in differentiating high English proficient students from low English proficient students, the mean differences of EET results among faculties were examined by using a series of One-way ANOVA tests. Generally, eight faculties were involved in the analyses. Four faculties were those which had high English entry level and the other four were those which had low English entry level.

Findings

RQ1: Does EET have a predictive validity in determining students' academic achievement (CGPA)?

In order to answer this research question, Pearson's correlation tests were run to examine the relationship between students' EET performance and students' academic achievement for four academic semesters. It was found that there were positive significant relationships between students' EET performance and students' academic achievement for all 4 semesters.

Table 2, Table 3, Table 4 and Table 5 below show that students' EET performance and students' academic achievement are significantly correlated for Semester 2016/2, Semester 2016/4, Semester 2017/2 and Semester 2017/4 respectively.

Table 2: EET results and CGPA for Semester 2016/2

Correlations			
		EET Results	CGPA
EET Results	Pearson Correlation	1	.633**
	Sig. (2-tailed)		.000
	N	341	341
CGPA	Pearson Correlation	.633**	1
	Sig. (2-tailed)	.000	
	N	341	341

**. Correlation is significant at the 0.01 level (2-tailed).

The Pearson's test revealed that there was a positive moderate significant relationship between students' EET performance and students' academic achievement for Semester 2016/2, r=.633, p<0.01.

Table 3: EET results and CGPA for Semester 2016/4

Correlations			
		EET Results	CGPA
EET Results	Pearson Correlation	1	.618**
	Sig. (2-tailed)		.000
	N	362	362
CGPA	Pearson Correlation	.618**	1
	Sig. (2-tailed)	.000	
	N	362	362
**. Correlation is significant at the 0.01 level (2-tailed).			

The Pearson's test revealed that there was a positive moderate significant relationship between students' EET performance and students' academic achievement for Semester 2016/4, r=.618, p<0.01.

Table 4: EET results and CGPA for Semester 2017/2

Correlations			
		EET Results	CGPA
EET Results	Pearson Correlation	1	.642**
	Sig. (2-tailed)		.000
	N	364	364
CGPA	Pearson Correlation	.642**	1
	Sig. (2-tailed)	.000	
	N	364	364
**. Correlation is significant at the 0.01 level (2-tailed).			

The Pearson's test revealed that there was a positive moderate significant relationship between students' EET performance and students' academic achievement for Semester 2017/2, r=.642, p<0.01.

Table 5: EET results and CGPA for Semester 2017/4

Correlations			
		EET Results	CGPA
EET Results	Pearson Correlation	1	.689**
	Sig. (2-tailed)		.000
	N	369	369
CGPA	Pearson Correlation	.689**	1
	Sig. (2-tailed)	.000	
	N	369	369
**. Correlation is significant at the 0.01 level (2-tailed).			

The Pearson's test revealed that there was a positive moderate significant relationship between students' EET performance and students' academic achievement for Semester 2017/4, $r=.689$, $p<0.01$.

The positive correlations between students' EET performance and students' academic achievement for four academic semesters indicated that students who performed well in EET would highly likely to achieve higher academic performance, Thus, it can be concluded that EET has a predictive validity on students' academic achievement (CGPA).

RQ 2: Can EET be considered as a good test in differentiating high proficient students from low proficient students?

In determining whether there are mean differences among the faculties, four faculties whose students are considered as proficient in English and four faculties whose students are less proficient in English are identified by looking at the English entry levels for these eight faculties. They are shown in Table 6 below.

Table 6: The English Entry Levels for Faculties

Faculty	SPM English Requirement	MUET Requirement
Faculty A (H)	Credit	Band 3
Faculty B (H)	Credit	Band 3
Faculty C (H)	Credit	Band 4
Faculty D (H)	Credit	Band 4
Faculty E (L)	Pass	Band 1
Faculty F (L)	Pass	Band 1
Faculty G (L)	Pass	Band 1
Faculty H (L)	Pass	Band 1

In determining whether EET is a good test, a series of one-way ANOVA tests were conducted to see if there were significant mean differences in the students' EET performance based on faculties for each semester. However, not all faculties were involved in EET every semester. Table 7 illustrates the mean differences among the faculties for all four semesters.

Table 7: Mean differences among faculties

Semester 2016/2				
Faculty	A (H)	B (H)	C(H)	D (H)
E (L)	.81103*	1.03704*	-	-
F (L)	.82955*	1.05556*	-	-
G (L)	.69797*	.92398*	-	-
H (L)	-	-	-	-
Semester 2016/4				
Faculty	A (H)	B (H)	C(H)	D (H)
E (L)	.92468*	1.49306*	-	-
F (L)	1.57051*	2.13889*	-	-
G (L)	1.15385*	1.72222*	-	-
H (L)	2.48718*	3.05556*	-	-
Semester 2017/2				
Faculty	A (H)	B (H)	C(H)	D (H)
E (L)	.81579*	1.02412*	1.70468*	-
F (L)	.92857*	1.13690*	1.81746*	-
G (L)	.96154*	1.16987*	1.85043*	-
H (L)	1.21429*	1.42262*	2.10317*	-
Semester 2017/4				
Faculty	A (H)	B (H)	C(H)	D (H)
E (L)	1.02353*	1.19853*	1.94853*	1.88603*
F (L)	.95000*	1.12500*	1.87500*	1.81250*
G (L)	.85000*	1.02500*	1.77500*	1.71250*
H (L)	.95000*	1.12500*	1.87500*	1.81250*

*. The mean difference is significant at the 0.05 level.

The results in Table 7 revealed that students who had high English proficiency level performed significantly higher in EET than those who had low English proficiency level. Hence, it can be concluded that EET is a good test as it shows its ability to differentiate good students from weak students.

Discussions

The findings from the present study were in tandem with the results of studies conducted by Riazi (2014), Machingambi (2017) and Vulperhorst, Lutz, de Kleijn and van Tratwijk (2018) on the subject of predictive validity. Riazi (2014) found that the newly launched Pearson Test of English Academic (PTE) scores were

correlated with students' GPA. Meanwhile Machingambi (2017) found that teacher made tests were correlated with students' mid-year and end year test achievement in four grade levels which were grade 3, 4, 5 and 6 levels. Thus, PTE and teacher made tests were found to be valid for predicting students' academic achievement. Vulperhorst, Lutz, deKleijn and van Tartwijk's study (2018) revealed that previous academic achievements such as the correlations between the high school GPA and core subject grades had a predictive validity on final GPA of the university students. The positive moderate significant relationships between students' EET performance and students' academic achievement found in this study thus indicated that EET has a predictive validity on students' academic achievement across all sampled students for all four academic semesters. The findings also revealed that there were significant mean differences between faculties that had high English proficient students and those which had low English proficient students. This shows that EET can be considered as a good test as it has the ability to differentiate good students from weak ones (Zou, 2017).

Conclusion

This study provides a useful insight on the predictive validity of EET based on the students' academic achievement. EET can be valid for predicting students' academic achievement in future. The consistent correlation coefficients observed in four semesters also contribute to the relative stability of EET as a predictor for success. In addition, the fact that the EET could differentiate good students from the weak ones is also an indicator of EET as a good test.

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