IELTS and Academic Success in Higher Education: A UAE Perspective

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Abstract

This study compares the relationship between International English Language Testing System (IELTS) entrance scores and academic success as defined by general education program GPA for students at a federal university in the United Arab Emirates in order to reflect upon regional English language proficiency entrance requirements. It focuses on one group of students, direct entry students who have bypassed the English language foundation program with an overall IELTS 6.0 or greater and were admitted straight into the baccalaureate program. Students were grouped according to their IELTS proficiency levels: 6.0, 6.5 or ≥7.0. Measures of central tendency for overall GPA and academic-stream-specific GPA, along with the overall IELTS and the corresponding sub-scores were calculated. To test the statistical significance of any mean score GPA differences that existed between the 3 IELTS groups, a One-Way ANOVA was calculated. Based on the statistical analyses, the IELTS ≥7.0 group appears to have achieved a meaningful threshold for academic success in that they have consistently outperformed the other direct entry students. This finding corresponds to international entrance-requirement standards for non-native speakers of English.

Keywords: IELTS, Academic success, Higher Education, United Arab Emirates, English proficiency

1. Introduction

As institutions in both English-speaking countries and English-medium EFL settings have increasingly turned to entrance requirements dependent on standardized tests such as the International English Language Testing System (IELTS), researchers' focus on the reliability of these instruments to predict academic success has naturally followed (Cotton and Conrow, 1998, Dooey and Oliver 2002, Breeze and Miller, 2008). While many of the earliest studies were conducted in native-English speaking nations, much research in more recent times has been occurring in non-native speaking settings, the location where large numbers of EFL students take their higher education degrees.

According to the "Guide for Educational Institutions, Governments, Professional Bodies and Commercial Organisations" (International English Language Testing System, 2015), recommendations for the levels of English required to succeed in academic studies are generally above the common entrance requirements for Gulf universities. The guide divides academic programs into "linguistically demanding" and "less linguistically demanding", but even within the latter category it states that the "probably acceptable" IELTS score is a 6.5 minimum. Linguistically demanding courses are only deemed acceptable at the 7.5 and above level, far above the proficiency level of most students entering tertiary education in the Gulf. In contrast, in the UAE, the Commission for Academic Accreditation (CAA) requires a minimum entrance score of 5.0 for institutions which it accredits, which is now all public and private post-secondary institutions in the country except those in free zones.

Universities in native English-speaking countries set IELTS entrance requirements for non-native speakers at a variety of levels, sometimes depending on particular areas of study which have been deemed less language intensive. There are examples of highly-regarded universities accepting IELTS scores as low as 6.0 including McGill in Canada, however, other universities within the top tier tend to require a 7.0 or above including Yale, Cambridge and MIT. Therefore, the gap in language proficiency between the average Gulf student and those studying internationally can be massive.

1.1 Context

The University where this research was conducted is one of three federal higher education institutions in the UAE serving mostly Arabic-speaking Emiratis. It is an English-medium, gender-segregated institution with approximately 9200 undergraduate and 500 graduate students spread across its Abu Dhabi and Dubai campuses. The University is accredited by the Middle States Commission for Higher Education, one of six regional US accreditors and the CAA,

and 5 of the 6 degree granting colleges have international disciplinary accreditation through organizations such as ABET and the Association to Advance Collegiate Schools of Business. At this institution determination of *grade point average* (GPA) follows a fairly standard model where courses are weighted according to the number of credit hours assigned, letter grades are associated with points (A is a 4.0, B is a 3.0, C is a 2.0, D is a 1.0, and F is a 0, and + and – letter grades are associated with scaled points), and a GPA is then calculated. Students with a GPA of 3.6 or above are eligible for the Deans' list, while those with a GPA below 2.0 are on a form of academic probation. For the purposes of this study, GPA is the measure used to determine academic success.

To analyze the connection between IELTS scores and academic success, a specific group of students at this university was studied. This group gained direct entry from secondary school into the degree program based on having an overall IELTS score of 6.0 or above. This group, herein referred to as direct entry students, represents the most highly proficient English speaking students, and none of these students spent any time studying English in a tertiary language-development or foundation program. For the purposes of this study, the participants were then sub-divided into three groups: IELTS 6.0, 6.5 and ≥7.0.

The vast majority of students at public tertiary institutions in the UAE are required to complete at least one semester in their institution's foundation program due to the low level of their language proficiency (Swan, 2015). The purpose of this university's foundation program is primarily language acquisition, but a range of other outcomes are included within the curriculum including the development of critical thinking, autonomous learning, self-reflection and leadership skills with the aim to improve students' overall academic preparedness (Zayed University, 2015). By meeting these outcomes, students who complete the foundation program are expected to adapt more readily to the demands of university life, and are therefore allowed to enter the degree program with an overall IELTS score of only 5.0, though a number of students will score higher than this minimum benchmark.

The differentiation in the varying levels of IELTS entrance requirements reflects the belief that language proficiency is only one, and perhaps a limited one at that, factor in students' ability to succeed in an academic environment. Underpinning it is the acknowledgement that the transition from high school to tertiary education impacts students greatly, but often for non-academic reasons. As well, students undertake this transition only once, during their initial semester, if they are enrolled in the degree program at this time, or if they are in a pre-sessional foundation program. By successfully navigating this transition, students prove a certain level of academic preparedness that may override the importance of English language proficiency. However, given the range of proficiency level of students that may be sharing a first semester degree program course (5.0 to ≥ 7.0), language ability may have some impact on student success as measured by GPA. The expectation is that the higher the IELTS entry score, the stronger the student's GPA in the first year and a half of courses will be. If this proves true, English-medium institutions may need to reflect on and adjust their entrance requirements, particularly in the Gulf where the vast majority of students are studying in their second language of English, and being accepted to institutions based on relatively low IELTS scores.

Once they enter the baccalaureate program, all students of this institution complete a standardized program of general education courses in a variety of streams including English composition, science-math-technology, global studies, First Year Experience and Arabic/Islamic studies. In some courses, students are streamed based on their IELTS scores, but the outcomes of those courses are identical to those taken by those students with lower language proficiency scores. Students study in the general education program for three semesters, and it is students' grades from these courses upon which the data for this study was collected and analyzed.

1.2 Literature Review

Studies seeking to understand the link between IELTS entrance scores and academic success have attempted to measure this connection in different manners. Some focus on overall IELTS scores and overall GPA. Others search for correlations between particular sub-scores and corresponding course results. While some research has been strictly quantitative, other studies have examined students' perception of how well the IELTS has served them in preparing for their undergraduate education.

A number of researchers in both native-English speaking countries and those in an EFL setting have found a correlation between IELTS entrance scores and academic success, although the strength of the correlation is often quite minor. Some of the studies which have discovered slight correlations between overall IELTS scores and academic success include Elder (1993), Dooey (1999) and Huong (2001). Feast's 2002 study conducted at an Australian university identified a "significant and positive" (p.70) correlation between IELTS scores and GPA, and Paul's (2006) case studies found that "entry-level IELTS ratings do broadly predict students' capacity for language production in academic settings" (p.30). Also in 2006, Woodrow showed "weak but significant correlations" (p.51) between GPA and overall IELTS scores. Yen and Kuzma (2009) discovered a relationship between IELTS and GPA, and particularly that "low IELTS scores could point to the possibility of students having poorer grades" (para. 20) although they acknowledge that this relationship weakens over time as other factors come into play. Three studies that examined a target population similar to the participants in this current research, in that they were non-native speakers of English attending English-medium post-secondary education institutions within their own countries, found positive significant relationships between student GPA and English language proficiency (Maleki & Zangani, 2007; Wilson & Komba, 2012; Al Malki, 2014). Within the Gulf, Al Malki's examination of Omani students studying to becoming teachers in their native country located a "moderate significant relationship" of .49 between IELTS and students' subsequent GPA (p.166) .

A commonly held assumption amongst many language teaching professionals is that sub-scores on IELTS will naturally

correlate more strongly with students' undergraduate grades as certain skills are perceived to be more important within the realm of tertiary education, yet research into this assumption has been mixed. In 1998, Cotton and Conrow found reading sub-scores to be the best predictor of academic success as compared to global IELTS scores. Oliver, Vanderford and Grote's (2012) large-scale study of foreign students in an Australian university attempted to find a link between students' academic achievement and their overall IELTS scores, but "the only significant relationship was between the reading sub-score" (p.552) and GPA, and it was a weak correlation of .27. Humphreys et al. (2012) sought to discover the relationship and also found correlations merely between particular sub-scores (reading and listening) whereas Ushioda and Harsch (2011, as cited in Humphreys et al., 2012) found similar correlations, but between reading and writing. Similarly Arrigoni and Clark (2015) "found few large or meaningful correlations between IELTS scores and academic success" (p.1), but did observe stronger correlations between GPA and reading and writing sub-scores. In a study of Spanish students being taught in a partially English-medium university in Spain, slight but positive correlations were found between students' grades and their IELTS listening sub-score (Breeze and Miller, 2008). Within the UAE, Garinger and Schoepp's 2013 study showed the "only statistically significant correlation was GPA to IELTS listening" (p.10), but it was a very weak .20 correlation.

Another series of studies have found that IELTS is not an accurate measure for predicting how students will perform in their undergraduate studies. Kerstjens and Nery's IELTS Research Report (2000) indicated that "IELTS was not found to be a significant predictor of academic performance" (p.95) for their sample of students studying in Australia. And Dooey and Oliver (2002) claimed that there is "little evidence for the validity of IELTS as a predictor of academic success" (p. 36). Yixin and Daller (2014) used a variety of measures to predict the academic achievement of Chinese students in the UK and discovered for this population "IELTS scores have the lowest predictive powers" (p.9) compared to analysis of students' lexical knowledge and writing abilities. A previous study in the Gulf region on UAE students concluded that "IELTS scores are not a predictor of academic success" (Garinger & Schoepp, 2013, p.12). Daher's 2014 study took a different approach in that they examined only the perceptions of Syrian students studying in Britain. However, when the participants were asked if "the test was an indicator for success on the course", over 63% felt it was not (p.441).

In summary, current literature reveals often contradictory results in the attempt to establish a relationship between IELTS and academic success in higher education for non-native speakers of English. Some studies have found relationships between academic success and IELTS, while other have not. IELTS sub-scores have again provided mixed results in that no consistent sub-score appears to be a meaningful predictor of academic success.

1.3 Research Questions

This research attempts to examine the relationship between IELTS entry scores and academic success as defined by general education program GPA. The research will directly investigate one unique group of students. The direct entry students who have bypassed the foundation program with an overall IELTS 6.0 or greater and were admitted straight into the baccalaureate program. The specific questions to be answered are:

1. What is the relationship between overall IELTS entry score and overall GPA for direct entry students?

2. What is the relationship between overall IELTS entry score and academic stream GPA for direct entry students?

3. What is the relationship between IELTS entry sub-scores and overall GPA for direct entry students?

4. Are there meaningful differences in GPAs between groups of direct entry students with an overall IELTS score of 6.0, 6.5, or $\geq$ 7.0?

2. Method

This research utilized existing institutional data which was available through Banner, the institution's student information system, and ethical clearance was obtained through established channels. Students' identities have been kept confidential and data are only reported in aggregate.

2.1 Sample

To identify a sample, direct entry students from the fall 2012 cohort and the fall 2013 cohort with an IELTS 6.0 or greater were selected. These two cohorts were the first where the University first began to record the IELTS sub-scores along with their overall IELTS score. Prior to fall 2012, the institution only recorded the overall IELTS score since the overall IELTS was all that was required for the English component of the direct baccalaureate admission. Additionally, these were the only two cohorts that have had the necessary time to complete the 3 semester general education program prior to data collection. The decision behind only collecting GPA data from the end of the general education program was twofold. First, the end of the general education program is an institutional milestone where students then transition into their major. Second, as the end of general education is 1.5 years into their program of study, students' entrance IELTS scores are still valid as they are within the 2 year window. A list of 494 direct entry students who also had a complete IELTS score profile was generated. From this, a random sampling method in which every second student was selected led to a final student sample. A few students were dropped from the list as they did not have complete grade data sets, so the final list contained 241 students. Of these 241, 10 did not continue after the first semester, while a small sampling of others did not continue after that. Nonetheless, the sample size began with 241 although there was some attrition as would be expected.

2.2 Research Design

Basic descriptive statistical techniques for IELTS and GPA were applied to the entire sample of 241 students. Measures of central tendency (mean, median, mode, minimum and maximum) for overall GPA, English composition stream GPA, global studies stream GPA, science- math- technology GPA, along with the overall IELTS and the corresponding sub-scores of Listening, Reading, Writing, and Speaking were calculated. After this initial descriptive phase, mean scores for 3 groups of students, IELTS 6.0 (n= 126), IELTS 6.5 (n= 66) and ≥ IELTS 7.0 (n= 47) were determined. Inferential statistics in the form of Pearson's correlation coefficient were then utilized to measure the relationship between IELTS and overall GPA, composition stream GPA, global studies stream GPA, and science- math-technology GPA. To test the statistical significance of any mean score GPA differences that existed between the 3 IELTS groups, a One-Way ANOVA was calculated. Because of the large difference in sample size, Hochberg's GT2 was utilized to determine where GPA mean differences were statistically significant (Fields, 2013).

3. Results

The first analyses completed were related to descriptive statistics for GPA and IELTS. Table 1 shows the that the sample of 241 students had a relatively high GPA of 2.93, with a median GPA of 3.1, and a maximum GPA of 4.0; 4.0 represents a perfect GPA at conclusion of the general education program. Within the general education streams, English composition had the highest mean GPA of 3.02, while the mean of global studies was 2.9, and for science- math-technology it was 2.76. The mean overall IELTS score was 6.3, while the means for the sub-scores ranged from a high of 6.9 for speaking to a low of 5.8 for reading. Though sub-scores ranged from 4.0 to 9.0, speaking is clearly the skill in which students are more proficient, and reading is the skill in which they face the most challenges.

Table 1. GPAs and IELTS scores

	Overall GPA	Comp GPA*	Global GPA**	SMT GPA***	IELTS Overall	IELTS Listening	IELTS Reading	IELTS Writing	IELTS Speaking
Mean	2.93	3.02	2.9	2.76	6.3	6.5	5.8	5.9	6.9
Median	3.1	3.23	3.1	2.92	6.0	6.5	6.0	6.0	7.0
Mode	0	3.90	3.00	0	6.0	6.0	5.5	6.0	7.0
Minimum	0	0	0	0	6.0	5.0	4.0	4.5	4.0
Maximum	4.0	4.0	4.0	4.0	8.5	9.0	9.0	8.0	9.0

*Comp= composition stream
** Global- global studies stream
***SMT= science- math- technology stream

The second set of statistics investigated the degree to which overall GPA correlated to IELTS, the degree to which overall IELTS correlated to GPA of the 3 general education streams and the degree to which overall GPA correlated to IELTS sub-scores. (see Table 2). Results indicated that there were statistically significant correlations in all cases except for GPA and IELTS speaking. However, in all cases where the correlations were significant, the relationships were quite weak. Understanding that a +/-1.0 indicates a perfect linear relationship and that a 0.0 indicates no linear relationship, significant correlations which range from .16 to .24 are not very strong.

Table 2. GPA and IELTS correlations

GPA-IELTS Overall	GPA-IELTS Listening	GPA-IELTS Reading	GPA-IELTS Writing	GPA-IELTS Speaking	IELTS Overall-Comp GPA	IELTS Overall-Global GPA	IELTS Overall-SMT GPA
.21*	.20*	.23*	.17*	.02	.24*	.21*	.16**

*Correlation is significant at the 0.01 level (2-tailed)
**Correlation is significant at the 0.05 level (2-tailed)

In order to conduct the second major analyses, students were separated into the three groups, IELTS 6.0 (n= 126), IELTS 6.5 (n= 66) and ≥ IELTS 7.0 (n= 47), which allowed comparisons between their respective groups' mean GPAs, both overall and for general education streams. Table 3 shows that in all cases mean differences existed and that in all cases GPAs increased from the IELTS 6.0 group to the IELTS ≥7.0 group. The highest mean GPA, 3.3 was recorded by the IELTS ≥7.0 group, while the IELTS 6.0 group recorded a still respectable mean GPA of 2.8. Within the streams, the IELTS ≥7.0 group achieved the highest mean GPA within the composition stream of 3.47 and its lowest mean GPA of 3.03 within the science- math- technology stream. The lowest recorded GPA came from the IELTS 6.0 group with a 2.64 in science- math- technology.

Table 3. GPAs of IELTS groups

	Overall GPA	Comp GPA	Global GPA	SMT GPA
IELTS 6.0	2.8	2.86	2.76	2.64
IELTS 6.5	2.9	3.02	2.9	2.8
IELTS ≥ 7.0	3.3	3.47	3.3	3.03

Determination of the statistical significance for the differences between the mean scores was accomplished through a One-Way ANOVA (see Table 4.). Results indicated that in all cases there were statistically significant mean differences between the three groups measured against overall GPA, composition GPA, global GPA, and science- math- technology GPA at the .05 level.

Table 4. One-Way ANOVAs

		Sum of Squares	df	Mean Square	F	Sig.
Overall GPA	Between Groups	9.168	2	4.584	6.699	.001
	Within Groups	162.870	238	.684		
	Total	172.039	240			
Comp GPA	Between Groups	12.979	2	6.490	8.587	.000
	Within Groups	178.357	236	.756		
	Total	191.337	238			
Global GPA	Between Groups	9.858	2	4.929	6.556	.002
	Within Groups	175.929	234	.752		
	Total	185.787	236			
SMT GPA	Between Groups	5.525	2	2.763	3.305	.038
	Within Groups	194.790	233	.836		
	Total	200.316	235			

Hochberg's GT2 was then utilized to identify between which groups the mean differences existed (see Table 5.). Statistically significant mean differences to the .05 level were found between the IELTS ≥7.0 group and the IELTS 6.0 group for all four of the categories of GPA and also between the IELTS ≥7.0 group and IELTS 6.5 group for overall GPA and composition GPA. The IELTS ≥7.0 group appears to have achieved a meaningful threshold for academic success. No statistically significant differences were found between the IELTS 6.5 and IELTS 6.0 groups.

Table 5. Significant mean differences

IELTS Groups	GPA Difference*
6.0- 6.5	None
6.0- ≥7.0	Overall, Comp, Global, SMT
6.5- ≥7.0	Overall, Comp

* All mean differences significant at the .05 level

4. Discussion

The descriptive statistics of students' overall GPA and overall IELTS score demonstrate that students with the higher required entrance score of 6.0 and above are excelling in the language intensive courses of composition (mean GPA of 3.02) and global studies (mean GPA of 2.9), a result that confirms the expectation that on the broadest level that higher proficiency scores do correlate with academic success to some degree. This mirrors the finding of Feast (2002) and Paul (2006) who also found these correlations between IELTS scores and GPA. The relative strengths and weaknesses of these students in English proficiency parallels earlier findings in research conducted on UAE students who had completed the English preparatory program in that composition GPA was higher than the global studies GPA (Garinger & Schoepp, 2013) confirming that the courses demanding the most from the students linguistically (composition) resulted in the best results for those with the strongest language skills.

The relationship between students' overall and stream-specific GPAs with their IELTS sub-scores has been an area of much discussion amongst faculty but this data proves once again that these relationships are not as consistent or straightforward as many language teaching practitioners expect. While there were statistically significant correlations found in this study they are mainly weak relationships. Interestingly, the one non-significant correlation is between the students' strongest skill, speaking, and GPA. The existence of statistically significant relationships amongst all the other permutations of IELTS, however weak, is aligned with a number of other studies (Elder, 1993; Dooey, 1999; Huong 2001) , but not with the Oman study (Al Malki, 2014) where a stronger correlation of .49 was identified. In relation to IELTS sub-scores, reading, though weak, had the highest correlation to GPA mirroring Cotton and Conrow's (1998) and Oliver, Vanderford and Grote's (2012) previous findings. Given the reading intensive nature of higher education, this is not unexpected. Finally, a major difference between this study and the earlier study using UAE preparatory program graduates (Garinger & Schoepp, 2013) is that there were statistically significant correlations for these direct entry students, but not for the preparatory graduates examined previously. It may be that the lower IELTS scores of the preparatory students eliminates any possible correlations because they have yet to achieve a meaningful English proficiency threshold for academic success.

The findings of GPA by IELTS group most clearly demonstrate the importance of higher IELTS entrance scores in determining academic success. The $\geq$ 7.0 IELTS group outperforms the two lower groups on all four measures (overall GPA and stream-specific GPAs) indicating that language proficiency does predict academic success at the broadest level. This again parallels findings from earlier studies (Woodrow, 2006, Yen & Kuzma, 2009, Maleki & Zangani, 2007; Wilson & Komba, 2012; Al Malki, 2014). These results suggest that students with the greatest depth of linguistic resources have the least difficulty navigating the transition from secondary to tertiary education, perhaps due to the fact that they can use these resources to compensate for the lack of academic knowledge and skills the majority of first year university students possess. The success of the $\geq$ 7.0 IELTS group seems to support both the IELTS guidance documentation and the entrance requirements set by universities in native English-speaking countries with an IELTS $\geq$7.0 often being the expected benchmark. The investigation of significant mean differences highlights the important differentiation in student success between the 6.0 and $\geq$7.0 IELTS level. Mean differences only appear between the 6.0 and $\geq$7.0 groups. Therefore, raising entrance requirements to a 6.0 IELTS would lead to no significant improvement in student GPA. It is only by approaching international standards of $\geq$7.0 can any advances in academic success be expected.

5. Conclusion

This research shows a positive relationship between a higher IELTS entrance score and academic success as those students with the highest entrance scores, $\geq$7.0, had the highest GPAs over the course of their three semesters in a general education program. However, students at the 6.0 and 6.5 level of IELTS proficiency did not demonstrate such a strong link leading to question what an appropriate IELTS entry level for baccalaureate students is in this region. Some stakeholders advocate raising entry scores to a minimum 5.5 or 6.0 level, but this study indicates that this may not have a great impact on students' academic success and would also deny entry to tertiary study to a large section of the potential student body. When investigating groups of lower level students with IELTS scores of 5.0, 5.5 or $\geq$ 6.0, Garinger and Schoepp (2013) also found that there were no statistical differences in their mean score GPAs. Recognizing that an IELTS 5.0 is the baccalaureate entrance requirement at this institution, only a small percentage of students ever attain an IELTS score $\geq$ 7.0. Within this sample of the more proficient direct entry students for example, only 19.5% (47/241) achieved the IELTS $\geq$7.0. It appears that the threshold level for academic success is possibly an IELTS 6.5, but in all likelihood it is an IELTS 7.0. This reality puts challenges on the pedagogy employed by faculty as students clearly need additional English language development if they are to achieve academic success. This echoes Rogier's (2012) assertion where faculty at this same institution did not feel their students had adequate levels of English language proficiency, so further language support was appropriate.

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