The relationship between international students' English test scores and their academic achievements

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Abstract

This study investigates the connection between international students' scores achieved in an English grammar and vocabulary test and the overall grades attained on their degree programmes at a UK university. Data was collected from 1841 students taking part in the university's Communication Skills programme, which provides supplementary support for students by means of in-sessional English for Academic Purposes tuition. A comparatively strong correlation (r=0.426) between English proficiency test scores and final academic grades was established, indicating that students' knowledge of English grammar and vocabulary has a telling impact on their ability to attain higher level grades and that further support to boost international students' communicative ability at all performance levels is warranted.

Introduction

The English language is both a bridge and a barrier for international students. On the one hand, it is the medium that allows them to cross borders and access education in a variety of contexts. On the other, those for whom English is not a first language may experience it as a major handicap in their pursuit of international qualifications. This raises the question how much of a role English language proficiency actually plays in their quest to be successful at an English medium institution. There is little doubt that different kinds of courses place differing language demands on international students, but in each instance, important decisions need to be taken about how the submitted work of non-native speakers and their (lack of) mastery of English grammar and vocabulary is evaluated, for example. Institutions also need to decide who they can recruit and set language-related admissions requirements. Even government authorities in the UK seem to be under ever-greater pressure to regulate language proficiency levels to ensure that students entering the country have a reasonable chance of succeeding academically.

In this study, the question about the relationship between English language proficiency and academic attainment is approached from the perspective of those providing language support to international students at a UK university. Data used in this study relates to 1841 international students who participated in a non-credit bearing Communication Skills programme which supplements degree courses and supports students by means of in-sessional English for Academic Purposes classes. The collected data primarily allows for the calculation of the correlation between scores achieved in an English grammar and vocabulary test (Password Knowledge) and the final grade averages achieved on degree courses. Data about the students' attendance on the Communication Skills programme was also collated and incorporated into the study.

Background

A good number of studies investigating the relationship between English language proficiency and academic attainment have been conducted in different higher education contexts during the past thirty years. Replicating these kinds of studies, which typically correlate English language test results with grades achieved on degree courses, or conducting similar research in different environments remains valid. In fact, Graham (1987), who laid an important foundation with her review of early studies predicting grade point averages based on language test scores, suggested that each institution should carry out its own analysis because so many different factors play a role in each context. The list of possible variables determining academic outcomes seems endless (Bayliss & Ingram, 2006) and the results of subsequent studies have varied accordingly. Some research has found no or negligible correlations (Cotton & Conrow, 1998; Dooey & Oliver, 2002; Garinger & Schoepp, 2013). However, data sets in other studies have shown positive correlations (e.g. Hill, *et al*., 1999; Feast, 2002; Woodrow, 2006; Maleki & Zangani, 2007; Phakiti, 2008; Yen & Kuzma, 2009; Cho & Bridgeman, 2012; Komba & Kafanabo, 2012; Daller & Phelan, 2013; May, *et al*., 2013). Although the studies that establish a positive correlation do so at varying degrees of strength and significance, it appears that they outnumber those which fail to show a link. Most of this kind of research is based on IELTS scores, but in some instances TOEFL or other language test results are used.

These are subsequently compared to academic grade averages, allowing for the calculation of a Pearson correlation. While acknowledging that results are clearly mixed and without going into a deeper analysis and interpretation of the various studies, it seems that an overall picture emerges which leans towards the intuitive hypothesis that students whose English language skills are demonstrably better are often also more likely to attain good grades on their English medium academic courses.

The UK university where the current study was conducted provides a Communication Skills programme which assists international students with adaptation to British academic culture during their first year in the country. The workshops and lectures provide discipline-related English for Academic Purposes tuition and study skills training, for example by focussing on different areas of assignment writing. In addition, students receive training in effective professional communication in their respective fields. Where possible, content is contextualised, classes are embedded into degree programmes and the syllabus is mapped accordingly, as is also recommended in Sloan and Porter's (2010) CEM model. As part of an attempt to assess students' more specific needs, they are asked to complete the computer-based Password Knowledge test at the beginning of the semester. The test focuses on language usage and has been developed by the Centre for Research in English Language Learning and Assessment (CRELLA) with academic contexts in mind. All international students are strongly encouraged to attend Communication Skills classes regularly, but students with low Password scores are given a timetable with additional Communication Skills sessions to provide them with further opportunities to work on their communicative competence in English. Students in this study all took the Password Knowledge test and attended at least one Communication Skills session. They also went on to complete a degree programme at the university, resulting in a relatively large sample of 1841 international students.

The significant number of students in this study compares favourably with similar correlational studies mentioned above, most of which are based on smaller sample sizes. The use of the Password test, which makes percentage achievements available, also means a relatively wide range of scores was available, which is beneficial in correlation studies, as Daller and Phelan (2013) point out. By contrast, IELTS reduces test scores to 'bands', grouping test-takers into categories of ability. Being relevant to university admission, the use of IELTS also establishes a somewhat artificial threshold: No students should have IELTS scores below the minimum required for university entry. However, students typically apply with the highest score they have achieved, even if this is not their latest score or if they would struggle to attain this score more than once. The Password test plays no role in university admission, though, and the score is recorded as both a band and a percentage, allowing for more precise discrimination between students' performances. The most significant feature of the Password Knowledge test is that it focuses only on some of the most basic nuts and bolts of the language: It tests vocabulary and grammar and only requires sentence-level comprehension. Unlike other tests, it is not subdivided into the macro-skills components of reading, writing, listening and speaking and it cannot be claimed that it measures overall communicative ability. Yet, it is precisely the reduced approach to language testing which allows for an interesting investigation into a possible connection between international students' command of English vocabulary and grammar and the grades they achieve on their degree course.

Correlations

Data for this study was collected from international students for whom three pieces of information were available: (1) The Password score established as part of the needs assessment on the Communication Skills programme, (2) the number of Communication Skills sessions actually attended and (3) the grade average achieved on a successfully completed degree course. After some consideration, students who had participated in the Communication Skills programme but who had failed to complete their degree course were excluded from this research project. While it would be insightful to learn more about the level of English of students who are unable to graduate despite having made a genuine attempt, there are too many non-academic reasons such as changing life circumstances which cause students to fail or drop out. In addition, trying to determine grade averages for students who did not complete their course is clearly problematic (May, *et al.*, 2013).

The Password Knowledge test result is expressed as both a percentage and a band score, but only the percentage was used in correlation calculations to allow for greater differentiation. Band scores (comparable to IELTS bands) were employed to identify the students who had been invited to additional sessions based on their lower result (below 6.0) and to split these from higher performing students for

some elements of the analysis. The total number of times each student attended Communication Skills workshops and lectures was determined by means of scan records. Each time students attended a workshop or lecture, their student card would normally be scanned to document their presence. The grade averages which were used correspond to the students' final result, incorporating credit bearing subjects according to their official weighting. Data was collected from a period when the university was using a scoring system using the numbers 0 to 16. The lowest scores in the study (5 and marginally above) represent a bare pass, while grades of 14 and above represent an 'A'. Using the three sets of figures, Pearson product-moment correlation coefficients were then calculated to relate the sets to each other.

In terms of the results, the Pearson correlation between the Password percentage and the average grade attained on the degree programme was r=0.426 (significant at the 0.01 level; N=1841). This can be classified as a moderately strong positive relationship. The correlation between the number of Communication Skills sessions attended and the average grade was minor at r=0.089 (significant at the 0.01 level; N=1841). The correlation between the Password percentages and Communication Skills attendance was r=-0.105 (significant at the 0.01 level; N=1841), showing that students with lower Password scores attended more sessions on average, but only to a very limited extent.
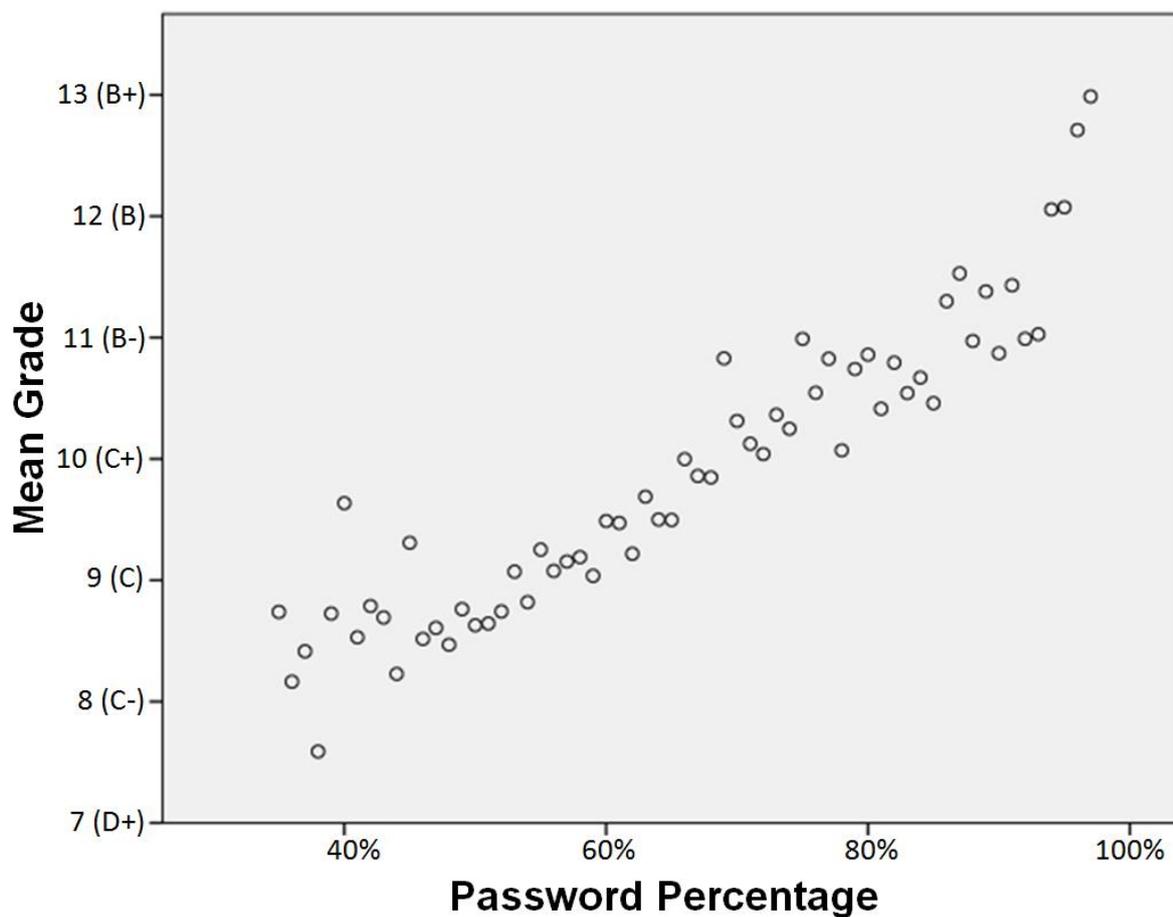

Figure 1. Students' Mean Grades in relation to their Password Percentage (summarised for each percentage point)

The final grade averages which students achieved were grouped according to Password scores and the number of actual Communication Skills sessions they attended. Students who scored lower than Password 6.0, and were therefore invited to additional Communication Skills sessions, achieved a grade of 9.357 on average if they attended 10 or more sessions, while those who attended fewer than 10 sessions averaged a grade of 9.043. For those who scored Password 6.0 and higher, the average grade attained was 11.071 for those who attended 10 sessions or more and 10.562 for those who attended fewer than 10 sessions.

Average final academic grades:

	CS attendance <10 sessions	CS attendance ≥10 sessions	Any attendance
Password score <6.0	9.043	9.357	9.156
Password score ≥6.0	10.562	11.071	10.704

Discussion

The results show fairly clearly: In the context where this study was conducted, the higher international students score on the English grammar and vocabulary test, the higher their final degree course grades are likely to be. This differs from studies which have found no meaningful correlation (Cotton & Conrow, 1998; Dooey & Oliver, 2002; Garinger & Schoepp, 2013) and also diverges from research which suggests that lower levels of English proficiency are better at predicting academic outcomes than higher levels (Cotton & Conrow, 1998). On the other hand, the findings are more in line with Hill *et. al*. (1999) as well as Komba & Kafanabo (2012), whose studies have ascertained similar correlations when relating academic grades to general English proficiency. Yet, it raises the question of how a relatively simple grammar and vocabulary test can be such a good indicator for academic success. Daller and Phelan's (2013) research leads to similar conclusions, though. Using a combination of different tests, they particularly found that students' ability to use vocabulary accurately seems to be a reliable predictor for study success and go so far as to suggest that 'vocabulary knowledge is the key factor that explains in some cases almost entirely the final marks that the students achieve' (Daller & Phelan, 2013). Without wanting to overstate the implications, one might wonder if there should be more of a focus on test-takers' basic structural control of the language in English testing in higher education contexts.

In addition, there may be a case for emphasising grammar and vocabulary in English for Academic Purposes classes even though other priorities which are more apparently relevant to academic course work sometimes seem more urgent. In any case, there are too many factors in addition to grammar and vocabulary knowledge that may affect international students' overall academic performance to say much about any possible causal link between the two. Also, in the case of the study at hand, the period of time between the Password Knowledge test and the completion of the degree course is too long to allow for any analysis of the connection between results in each one without venturing into audacious speculation. At the same time it seems self-explanatory that studying at a UK university somehow relies on successfully decoding English words and sentences as well as the ability to put them together competently, for example in assignments and exams.

It was for precisely this reason, among others, that the Communication Skills programme was initially established at the university in this study. It seeks to address students' language needs and both formal and informal feedback from students about the sessions has been consistently positive. Typically, attendance patterns for such non-creditbearing English for Academic Purposes programmes can be somewhat erratic, though (Sloan & Porter, 2010). In relation to Password Knowledge test results and grade averages, the Communication Skills attendance statistics show two trends: Firstly, students who had lower Password scores did attend more sessions on average than those with higher scores, but not to the extent one might expect considering the effort that was made to support these students as much as possible. In some cases, students with language-related deficits were offered an extra four hours of classes per week in addition to the standard sessions.

Secondly, there is a small but real difference in academic grades achieved by those who attended 10 sessions or more. Interestingly, students who started out with higher Password scores and were good attenders distinguished themselves from non-attenders more clearly than those who were good attenders but started out with lower Password scores. Accordingly, one might ask if students who start out with stronger English language skills are also able to draw greater benefits from academic skills and language support than those who start out with a bigger deficit, as has also been suggested by May, *et. al*. (2013). More generally, better attenders attained somewhat higher overall academic grades, though this can be interpreted in different ways. In combination with anecdotal evidence from students and tutors, it seems fair enough to suggest that the Communication Skills sessions make a contribution in helping students improve their overall academic grades. At the same time it is acknowledged that better Communication Skills attenders may also be more conscientious students in other ways which also

account for the marginally higher grades. If anything, this study confirms it is always difficult and problematic to show how much learning transfer takes place between EAP and academic courses (James, 2010).

Conclusion

Even though all international students in the study had been admitted to their degree courses on the basis that their level of English would be sufficient to be successful on the course, the correlation between their scores in the Password Knowledge test and their academic grade averages was positive and strong. Those who begin their studies with less of a grasp of grammar and vocabulary are in a disadvantaged position compared to those who are stronger in this area. These findings should not surprise anyone, but this makes it clear that the role of language skills should not be underestimated when new students are being recruited onto courses. There should be no pretences that grammatical and lexical accuracy and inaccuracy are inconsequential. Of course there are good reasons to have relatively wide access to UK universities for international students and to ensure the barrier represented by English proficiency requirements is not unnecessarily high. Nevertheless, not everyone has the same chance of getting an 'A', as the study shows. Still, success is relative and even though students who did not complete their degree course were eliminated from the figures in this study entirely, it can be pointed out that the number of students who did manage to graduate despite worryingly low Password test results is significant.

International students may not always fully take up offers for language and academic support, sometimes precisely because they are struggling and are worried that any additional classes will eat into the time they can spend on coursework. However, it seems fair to say that, based on the findings here, attendance at the Communication Skills sessions certainly does not harm students' chances of getting higher grades and resources seem to be well spent in this regard. While it remains problematic to make any kind of generalisations, the overall picture which further emerges is that, certainly in the specific context where the study took place, international students and the academic community they are part of should stay aware of the linguistic challenge they face. Deficits in English grammar and vocabulary are likely to make their presence felt in relation to academic achievements, but by making use of the opportunities to improve such language skills, students may increase their chances of attaining higher grades and overcome the barrier that the English language can represent.

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