

**A Study on the impact of receptive and productive  
vocabulary levels on the success of learners on English  
for Academic Purposes (EAP) programmes**

**By Nicholas Robert Rowe**

دراسة بشأن تأثير مستويات المفردات المتقبلة والإنتاجية  
على نجاح برامج تعليم اللغة الإنجليزية للأغراض الأكاديمية

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### APPENDIX C

#### DISSERTATION RELEASE FORM

<b>Student Name</b> Nicholas Robert Rowe	<b>Student ID</b> 20050100	<b>Programme</b> MA TESOL	<b>Date</b> 01 August 2012
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<b>Title</b> A Study on the impact of receptive and productive vocabulary levels on the success of learners on English for Academic Purposes (EAP) programmes
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## Contents:

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تركز هذه الورقة البحثية على الفرضية بشأن مقدرة طلاب اللغة الإنجليزية في التغلب على الصعوبات المتزايدة في البرامج التأسيسية للجامعة بسبب محدودية إلمامهم بمفردات اللغة المتداولة (عالية المستوى) في مقابل عدم توفر المهارات الأكاديمية أو المفردات ذات الصلة بالموضوع. وللبحث في الروابط بين الثراء المعجمي والمعرفة الأكاديمية ، فقد تم إجراء الإختبارات على الطلاب الذين يتعلمون اللغة الإنجليزية للأغراض الأكاديمية أثناء تلقيهم للدورات الأكاديمية وخلال الدورات الأساسية للدراسة بالجامعة ، وذلك بكلية اللغات في جامعة أوكسفورد في بريطانيا.

في البداية ، تم اختبار المتعلمين والدارسين لمعرفة الرابطة التي توجد بين حجم المفردات اللغوية المتوفرة وانتاجيتها في الدرسات مقارنة بما توفره مفردات المعاجم بشأن الدورات الأكاديمية التأسيسية التي يخضعون لها.

تم إجراء التجربة الثانية على مجموعة من طلاب اللغة الإنجليزية العامة والذين خضعوا لبرامج تدريب على المفردات لمدة ستة أسابيع ، وذلك بهدف التأكد من مدى التركيز على مفردات اللغة المتداولة (عالية المستوى) وأنها يمكن أن تكون ذات تأثير مباشرة على حجم المفردات لدى الطلاب المتعلمين.

أثبتت التجارب أن الإلمام بالمفردات من شأنه التأثير على المستويات اللغوية للمتعلمين والدارسين بالإضافة إلى تحقيق مستويات أعلى من المفردات المتداولة القائمة على أساس التدريس المعجمي أثناء البرامج الأساسية التي سيكون لها تأثيراً مباشراً على مستويات المتعلمين وفقاً للغة المؤسسة على المعاني الراسخة ، والتي تمكن أولئك الدارسين والمتعلمين من تفعيل وزيادة مهارات الدراسة الأكاديمية لديهم بجانب المعرفة المتخصصة القائمة على المفردات التي تعلموها خلال هذه المراحل.

## Abstract

This paper will focus on the argument that the ability of English L2 students to cope on university foundation programmes is more hindered by limitations in their knowledge of more commonly used *'higher frequency'* vocabulary as opposed to a lack of academic skills or content-related vocabulary. To investigate the link between lexical richness and academic competency experiments were carried out on English for Academic Studies (EAP) students studying on academic and university foundation courses at a private language college in Oxford, England. Firstly, the learners were tested to see if a link existed between learners' receptive and productive vocabulary sizes and the lexical requirements of the academic foundation courses they were on. A second experiment was performed on a group of general English learners taking a 6 week intensive vocabulary programme to ascertain if a focus on teaching *'higher frequency'* vocabulary could have an immediate impact on a learner's vocabulary size. The experiments found that vocabulary knowledge influenced learners' linguistic levels, and that higher frequency meaning-based lexical tuition on foundation programmes could have an impact on an EAP student's vocabulary competence. As a result academic and foundation course syllabus designers could consider offering intensive *'higher frequency'* vocabulary tuition programmes to give foundation level EAP learners the meaning-based language which would enable them to activate the academic study skills and specialist content vocabulary knowledge they already possessed.

# 1 Introduction

This paper is based on an experiment carried out over a research period of 3 months reviewing the relationship between students' progress on a range of academic and exam preparation based programmes offered at a private educational college in Oxford, UK and the lexical/vocabulary level these students possess. Recent years have seen significant growth in the number of overseas students coming to the UK for tertiary level courses. The UK Higher Education Statistics Agency (2011) statistics showed that in 2009/10 the number of Other EU student numbers (125,045) had increased by 25% since 2005/6 and Non-EU students (280,760) by 35% over the same period. Foundation programmes give international students the academic skills and technical language they will need, but is there a chase for these programmes to provide intensive tuition in the more commonly used higher frequency vocabulary.

From my experience many students pass their course and proceed on to their undergraduate studies based on being taught the linguistic skills (listening, reading, writing, and speaking) they will need to complete academic assignments on their foundation programme. However, students who completed their foundation courses in Oxford and moved on to their when interviewed stated they believed their basic receptive and productive vocabularies were not adequate for academic circumstances they face at university. Tasks like taking notes; giving presentations; contributing to and leading seminars; asking appropriate questions during lectures; being aware of cultural factors associated with a UK-based education; appropriately using formal/informal language in speaking and writing tasks; and socially liaising with their course peers need a thorough knowledge of high-frequency vocabulary.

A key question which course administrators and teachers on University Foundation Programme (UFP) courses may ask themselves is whether the students who move on from UFP programmes are academically ready to participate in the English-medium educational environment; and how UFP courses could meet their linguistic and study skill needs. Language learners, researchers and educators have over the years realised that although cultural understanding, a grasp of academic study skills, a competent range of receptive and productive English language skills, and good grammatical and pragmatic English knowledge levels are important; many, including the students themselves, recognise that it is vocabulary competence levels which could be the key factor limiting academic progress, effecting the overseas students' self-confidence. Could a focus on encouraging learners to recognise and assess their own receptive and productive vocabulary levels, getting them to ensure that they have a thorough receptive and productive knowledge of the 3,000 higher frequency vocabulary items we will mention later in the literary review, and providing them with intensive vocabulary tuition and the skills to expand their own vocabulary in their free time the key learner-need focused elements which pre-university/college preparatory programmes now lack and which courses providers should focus on providing?

This paper will aim to prove the strong link that exists between vocabulary level and a learners' course placement and overall performance, the link that exists between receptive and productive vocabulary levels, and how course administrators should recognise this by providing targeted input of the key functional vocabulary that a number of overseas learners often lack when they move on to university. This may require a return to teaching strategies which some academics may regard as pedagogically out-of-date: rote learning and grammar translation techniques. However, when considering the specific needs of academic students on intensive foundation courses where time is at a premium these traditional strategies from the past may need to be revisited and reconsidered.

The dissertation therefore has two key experimental stages:

1. An investigation of the academic courses on offer at a particular private language college in Oxford, UK to assess the vocabulary level of the learners on completion of their academic programmes. This study took place over a '2 week' approaching the end of the learners' course in June/July 2011 and involved the learners being tested to assess their receptive and productive vocabulary levels.
2. An investigation of the improvement in vocabulary levels achieved by learners taking part in an intensive vocabulary skills SIG (Special Interest Group) course offered to general English learners attending the EFL branch of the same private language college. The aim of this second experiment was to test to see if an intensive, high frequency-based vocabulary programme could have a significant short-term effect on learners' receptive and productive vocabulary levels and, if as a result, course designers should consider offering such a course on the academic university foundation programmes they are offering. As you will see in the methodology section below this study took place over a 6 week period and involved the students having taken the same receptive and productive vocabulary test mentioned above on three separate occasions to measure their lexical improvement.

To summarise the key research questions which will be addressed in this dissertation are:

- Is there a link between the overall vocabulary levels, and the individual receptive and productive vocabularies of students on specific academic courses offered at the private language college? And in the follow-up discussion the question as to whether this link should lead to a review of the academic course content being analysed.
- Should the intensive teaching of higher-frequency meaning-based vocabulary be an integral, possibly an introductory component of an academic skills foundation programme?

## 2 Literary Review

### ***2.1 Vocabulary acquisition on academic language courses***

The key question any researcher in this field has to ask themselves before investigating the knowledge a second language user of academic English has is: 'What exactly is an effective vocabulary?'

Research featuring West, Nation, Schmitt and Laufer has focused on the various elements that make up an effective vocabulary: the receptive and productive vocabulary sizes of the learner measured according to West's General Service Level (GSL) for general English vocabulary and Coxhead's academic wordlist (AWL) for more specialist lexis; the skills an academic learner needs for effective lexical acquisition for listening, reading, speaking and writing purposes; and the threshold levels of 'running word' coverage an academic learner needs to read L<sub>2</sub> content effectively (West 1999).

Perhaps most significant is the relationship between successful language usage and vocabulary size or as Nation described it as the '*language knowledge threshold*':

*'The boundary between not having enough and having enough language knowledge for successful language use.'* (Nation 2001, p.144)

Failing to reach this crossroads will mean that an academic learner's chance of linguistic comprehension is very low. Laufer & Sim (1985) investigated comprehension and threshold levels when they studied how Cambridge First Certificate candidates comprehended English academic texts. They concluded that a minimum threshold level was required to guarantee success and that the most pressing needs the learner had to reach this level were: vocabulary knowledge, subject matter knowledge, and syntactic structure, in that order. So what is the threshold, or the word token coverage, that Laufer discovered as being the minimum level required to allow for linguistic comprehension?

To briefly highlight her findings she discovered that a coverage level of **95%** of reading texts covered resulted in a much higher number of successful exam candidates, so this was the safest measure to use when defining the learner's vocabulary threshold. Even a slight fall to between **90-94%** coverage resulted in a significant drop off in exam grades and one can presume comprehension levels. So the obvious question for academic course designers is what vocabulary size can produce this **95%** coverage figure. In further studies Laufer found, using her Vocabulary Level Test which we will be using for our experiment and the Eurocentre's Vocabulary Size Test that the minimum level when a student became a reader rather than a non-reader (**56%** pass rate in the examinations sat) was **3,000** word families. Further studies by Laufer and others have confirmed this **3,000** word family figure as being the minimum level learners need to comprehend unsimplified texts.

Nation (1990) went on to clarify what this meant with regards to the correlation between lexical levels and comprehension of reading materials. For **95%** coverage to be reached that the learner would have to know **19 words out of 20** in any given text. His research went on to state that to guarantee this for a learner seeking to comprehend academic texts would require a vocabulary size of around **4,000 word families** made up of :

**2,000** high-frequency GSL (General Service List Words)

**570** general academic words (AWL)

**1,000** or more technical words, proper nouns, and low-frequency words.

Other research has shown that second language readers of texts would require an even higher coverage figure, between 98-99%, to guarantee adequate comprehension and to allow the reader to enjoy the text. However, most academics carrying out vocabulary investigations have accepted Laufer's 95% coverage as the most likely probabilistic threshold; and Nation's 4,000 word family figure as appropriate vocabulary size target to help achieve this level of coverage.

The next question for the academic course designer is how to achieve the primary aim of any pre-sessional EAP (English for Academic Purposes) course in bringing learners up to a level where they can succeed in UK higher education and this involves ensuring that their skills, strategies, and linguistic level are at appropriate levels when they start their content courses (Gillett 2000). Although a high level of linguistic proficiency is not required on some courses if it can be shown that English L<sub>2</sub> students can be fast-tracked to a position where they can benefit from an English language tertiary education by possessing a sound general English knowledge; a good understand of the technical and specialist vocabulary they will encounter as part of their tertiary studies; as well as, perhaps most significantly, a good grasp of the West's higher frequency general (GSL) and Coxhead's academic vocabularies (AWL) to enable them to get the most out of their English language university experience.

With regards to the importance of providing an academic vocabulary focus Nation (2001) has recorded several reasons why a focus on this vocabulary should be regarded as an important learning goal for students on EAP courses; the main reason being that a good coverage of high-frequency general English and specialised academic vocabulary is common to a wide range of academic text, and doesn't feature so frequently in non-academic tests. Early work on three texts ranging in length from **6,300** to **9,600** tokens performed by Barber (1962) found a number of words and tokens common to a range of academic texts and gave rise to the thinking about the possible specialist study area of English for Specific Purposes (ESP). Nation (2001) continued this work by going on to show that subsequent research gave rise to the creation of an academic vocabulary common to a significant range of academic writing (Campion and Elley, 1971; Praninkas, 1972; Hwang, 1989). This directly led to the corpus-based work done by Xue and Nation (1984) in establishing the Universal Word List (UWL); and by Coxhead (1998) leading to her creation of the **570** headword Academic Word List (AWL) which has been used in

this project to assess learners' knowledge of EAP vocabulary and to test their acquisition rate of this specific lexis.

Nation's second observation was that this academic vocabulary accounted for a significant number of words in academic texts. Whether measured as percentage coverage (tokens), or the number of academic word families/lemmas, work by a range of researchers including Sutarsyah, Nation, and Kennedy found that UWL listed academic vocabulary accounted for as much as 8.4% of the Learned and Scientific sections of University of Wellington corpora and 8.7% of the economics test. Coxhead (1998) found during the research she did in putting together her AWL that academic lexis covered 10% of the tokens of the 3.5 million running word academic corpus she had put together, and 8.5% of an independently compiled corpus.

The third key point that Nation made regarding academic vocabulary is that it is generally not as well known as technical vocabulary. He quoted a range of research which that non-technical vocabulary items like: *essential, maintain, invariable*, were far less likely to be known by students than technical vocabulary which students were more likely to link to L1 vocabulary items, or to have experienced from their previous content-based studies. Nation went on to highlight research by Cohen and Anderson showing that academic items, unlike purely technical vocabulary, were sometimes not used with a technical meaning, and learners were not aware of related items being used to describe the same thing resulting in them not picking up lexical cohesion through paraphrasing. This language therefore had a significant linguistic element incorporated in their meaning and this often resulted in learners classifying them as unknown, thus having an impact on their ability to comprehend academic texts.

This point may have importance in relation to the experiment being conducted for this research because qualitative analysis of English for Academic Studies (EAS) learners found that when they were not being guided by teachers, often focused in their vocabulary notebooks on highly specialised low-frequency technical tokens which they are likely to encounter and need in the future very infrequently and could therefore be classified as items unlikely to make an effective contribution to the vocabulary size the learner is going to need to cover the majority of academic tests they will encounter. A focus on the higher-frequency lists of Coxhead (2000) and Xue + Nation (1984) during the vocabulary component of any study skills training programme would allow learners to focus during their vocabulary studies on items they are more likely to encounter and which may contribute more to lexical cohesion.

Nation's fourth point was the highly significant one that an academic, as opposed to a technical, vocabulary is one which an English language/EFL teacher can more usefully help a student with. Teaching this lexis as part of an EAP course does not require a background knowledge of technical subjects. The academic words are valuable for students across a wide range of specialisations and form a natural add-on to West's general service vocabulary. In addition, if taught as part of a UFP (university foundation programme) course like the ones experienced in Oxford where the majority of the input is

content-based, this corpus can help provide students with the language that could make a significant impact on the quantity and quality of reading input they would comprehend and the range and depth of their speaking and writing productive skills. A clear picture is emerging that there is a role in the intensive teaching of high-frequency general and academic lexis give learners they key vocabulary and overall vocabulary size to deal with the specific content they are going to encounter during their English language tertiary studies.

Another question that arises is what teaching/learning strategies should be employed to provide the individual learner with this knowledge. EAS/UEP course syllabuses which were reviewed for this paper were often either coursebook-based (a common one used was *Language Leader: Pre-Intermediate or Intermediate*) or tied to a scheme of work more focused on the development of the academic reading, writing, listening, and presentation skills a student was likely to use at university. The vocabulary elements of the course were often content-related, lower-frequency lexis, based on the specialist subjects which learners were studying as part of their foundation course. In addition, there was a focus on lexical topics which commonly featured in the IELTS (International English Language Testing System) examination as this assessment tool is the most commonly used measure applied by universities to see if UEP students have the linguistic capabilities to proceed onto their Bachelor or Masters studies.

Another major vocabulary source on the academic courses was the language keywords provided in the set coursebooks. This subject-based lexicon, although highly useful in developing the learners linguistic base, again could be seen as more topic-based and therefore an exam preparation tool, and did not specifically focus on the mastery of the higher frequency lexical word families which Nation and Laufer (1999) have highlighted as being essential to provide the vocabulary size required for text coverage and productive accuracy and range. This does not question the fact that the coursebooks have been prepared with the needs of academic learners in mind, as the production of these books are often the result of corpus-based research into the vocabulary needs of these learners, but one of the key arguments in this paper which the experiments will try to establish is that these learners need a greater focus on the vocabulary highlighted by Nation, Laufer and Coxhead's research.

A thorough investigation of the vocabulary content of a UEP programme would allow course administrators to focus on the specific skills needs of course participants. As Nation highlighted above the fact that academic vocabulary is high-frequency vocabulary for any student with academic goals shows that any time used on its acquisition or practise is time well spent. In addition, it should be possible for any teacher with an EFL background to add intensive meaning and language focused high-frequency input and output to their EAP programme without having any technical or content subject knowledge. Because of the Latin and Greek origins of many academic words (Nation 2001) the receptive teaching of this lexis could have a distinct language-focused element to it with the teacher engaging students in direct learning, learning from flashcards or word part analysis, and encouraging learners to

develop the formality of their writing.

As Nation has been previously quoted as stating academic vocabulary, as represented by the 570 items of Coxhead's Academic Word List, will give the learner close to 90% coverage of the running words in most academic texts. When you add to this figure the technical and off-word list items which a teacher can either assume the learner already possesses, or has the study skills to acquire through their own extensive reading, learners will reach the 95% coverage threshold needed for effective reading and comprehension of input. In addition, as academic language is acquired for clearly defined productive purposes, giving presentation and formal talks on academic subjects, discussing academic texts, critical analysis of articles, and reviewing the literature around a particular subject are integral skills to incorporate into any EAP programme which wishes to focus on high-frequency lexical development. However, syllabus designers have to balance this focus on academic vocabulary development with the knowledge that native speakers acquire this knowledge as they develop their academic skills and knowledge, L2 users taught high-frequency academic words who don't possess the corresponding skills will not be able to deal with, or produce, an appropriate range of academic discourse. Therefore lexical acquisition must be blended into a complete skills development programme.

## ***2.2 How to introduce learners to Academic Vocabulary***

A major question faced by classroom teachers on EAP courses is to know when students are ready to actively participate in activities requiring a certain level of academic word coverage, linguistic competence and self confidence. In other words how should a course syllabus/class teacher go about introducing specialist vocabulary to intermediate level students on an academic skills course?

Many lexical tutors argue that extensive reading is an appropriate way of introducing new vocabulary in context and encourage the incorporation of this skill as part of extended language course. Research into vocabulary acquisition has reinforced the point of view that extensive reading has a positive impact on language learning rates as most vocabulary acquisition takes place incidentally during this process (Nagy, Herman & Anderson 1985). However, syllabuses are reluctant to base vocabulary acquisition on extensive techniques due to a number of factors: students don't believe that learning is taking place during processes of silent reading, students may lack motivation to do a lot of reading in their own time, or the believe that extensive reading may have a limited role in an integrated four-skills development class (Macalister 2007).

From my experience teaching lower-level EAP courses students the initial enthusiasm for extensive activities, especially if they require 'out of classroom' support through the likes of a graded reader programme, dwindles unless the learner can see some specific course benefit from engaging in this work. This may take the form of awarding of marks for productive tasks based on extensive reading (giving a presentation or writing a summary) or the learner can quickly ascertain a link between the

activity and particular skills development. When students link their extensive reading to maintaining a targeted vocabulary notebook, or building up a corpus of relevant texts to the students' intended course of study, a **data-driven learning (DDL)** to target key specialised vocabulary. The second method, using concordancing software like Cobb's Lextutor (2011), has been encouraged by the likes of Allan (2009) in encouraging the student to become more autonomous research workers regarding their lexical development by engaging in learner-centred authentic vocabulary profiling, which deepens vocabulary knowledge through an understanding of collocations, contextual behaviour, register, and most significantly, an idea as to the frequency of the lexis the learner is using.. The vocabulary special interest group (SIG) course syllabus which formed the basis of the second experiment was student focused and a significant proportion of it was based on learners profiling the vocabulary they were receptively and productively engaged with to build up their own personal lexical corpora.

EAP course designers, therefore, have often had to look beyond an extensive reading approach. Worthington and Nation (1996) highlighted the fact that for academic lexical development this practice would involve the students in accessing an impossible number of texts to obtain a minimal coverage of UWL or AWL items. In addition, at the beginning a high percentage of unknown academic items will be encountered by the student which would almost certainly result in an inability to comprehend gist and context and this could be demotivating.

A gradual integration approach has been recommended which introduces students to around five adapted texts covering 100-200 high-frequency academic items where glossing could be used to highlight the target language for the students. The adaptation could consist of removing words outside of the first 2,000 GSL and the first 100-200 AWL and replacing them with higher frequency words found in Coxhead's first three '60 word' AWL sublists. As the course develops more unabridged texts could be added to extend the AWL range. They also recommend the decontextualised intensive introduction to this vocabulary through the use of gap fill exercises similar to those that Luton prepared on her website to introduce and practise Coxhead's 10 AWL sublists (Luton 2009). The argument being that simply encountering items in a text should not be regarded as effective learning; intensive study opportunities will ensure that vocabulary learning could be cumulatively enriched through a combination of these learning methods. Intensive higher frequency general and academic vocabulary input has therefore been regarded by many syllabus designers and course administrators as an integral part of an academic programme.

## 3 Methodology

### 3.1 *A quantitative analysis of academic learners' vocabulary levels*

The research for this project is predominantly quantitative involving a measurement of how students on academic and general English vocabulary skills courses at a private language college in Oxford, UK developed their receptive and productive lexical skills over a time period and how significant was the development of the student's effective productive vocabulary (the vocabulary they use for speaking and writing activities) on their receptive vocabulary knowledge levels.

The researcher regarded the link between receptive and productive knowledge levels as being worthy of investigation because background reading around the subject has shown a positive correlation relating to this link to be significant in producing more students with a vocabulary which is competent enough to achieve most of the academic tasks required of them when they move on in their English-based university studies. If it can be shown that learners' productive development is dependent on their receptive knowledge, vocabulary levels are a significant factor in measuring students' success on an academic programme, and intensive vocabulary skills' courses focusing on high-frequency lexis can have an impact on learners' vocabulary levels, then there would be case for academic university foundation programme administrators and syllabus designers to consider vocabulary teaching priorities. To be more specific a number of university foundation courses offer a range of content courses which offer specific lower frequency *content* vocabulary targeted towards the students' future field of study at university. Would the students' vocabulary skills be better served if some of this time was utilised on a vocabulary skills course which focused on higher frequency *meaning* vocabulary which the learner could then adapt to their future study needs?

The testing for this experiment was done using Nation and Laufer's Vocabulary Level tests which focus on the reception and production of vocabulary of a student based on testing their knowledge over a number of frequency based receptive and productive word list ranges: **1,000; 2,000; 3,000; 5,000; Academic, and 10,000.** These tests were chosen as they are widely used by lexicographers and academics to assess students' lexical competence and they are relatively easy to administer.

### 3.2 *Vocabulary level needs of academic students*

Initially two distinct population groups were researched to investigate vocabulary need:

#### 3.2.1 **Advanced level Foundation Course**

This is a one-year programme on which students select either a humanities or science based option on which they study 4 content-based modules and a compulsory module '*Communication + Study Skills*' (CSS) which focuses on integratively developing the receptive and productive academic skills that students will use when they move on to university. So, for example, a student going on to study a

scientific subject at university could choose Maths, Data Analysis, Physics, Biology, and Chemistry as their content courses to go alongside CSS. A humanities student would have a choice of 4 subjects from either: Geography; Data Analysis; History; Politics, History, and Government; Economics; or Art + Design, to add to the compulsory CSS core module (Kings Colleges 2011).

Entrance onto the programme is achieved by students achieving an IELTS score of 5.5 or sufficient evidence from other academic qualifications that the student English language skills is of an equivalent level. Assessment consists of students completing 4 assignments/exams over the year for each of their 5 chosen subjects. For example, for the CSS course the 4 assignments consist of: a research project, an listening + note taking based exam where a student is assessed on their ability to produce an academic essay based on a lecture they have heard, a group presentation, and a reading, summary writing and vocabulary acquisition exam. There is a slight weighting in favour of the last two assignments as they are completed by the students in their second semester when their academic and lexical skills should be more developed. However, students have to complete 20 assessed assignments on the programme (5 modules multiplied by 4 subjects per module) each worth around 5% of the overall grade.

The population from which most of the experimental data has been gathered for this project come from the lower level 'English for Academic Studies' courses mentioned below. However, it is important to refer to the advanced foundation programme because achieving a good pass on this course is the prime objective of the majority of the university foundation students entering the school. Therefore, the lexical benchmark for these students would be the vocabulary level they have reached at the conclusion of this programme.

Therefore the first mini experiment involved an assessment of a group of eight advanced foundation students to assess their effective use of commonly-used general and academic lexis and assess how the content on the programme they had studied, in particular the CSS component, had helped them meet their needs. This group consisted of 3 Nigerian nationals, 3 Koreans, a Kazak, and an Emirati. These students therefore had a wide range of linguistic backgrounds on commencing the programme and as a result differing lexical and vocabulary acquisitional skills' needs. The results from this sample would be particularly valid as the assessment could give us a chance to assess how effectively learners could utilise the high-frequency academic vocabulary which researchers like Nation and Coxhead have highlighted as being in important to enable academic students to demonstrate their linguistic competency and knowledge level.

The experiment involved giving the students the receptive Vocabulary Level Tests prepared by Schmitt, N., D. Schmitt and Clapham (2001) and the productive Vocabulary Level Test prepared by Laufer, and Nation (1999) (Appendices: 1-3). As Nation explained these tests were not designed to measure total lexical range or ability but rather to assess students control and accuracy of their usage of the high-frequency words they would need in most academic situations. These results can be

intepreted to show course designers how to target syllabuses to encourage the development of the vocabulary learners are most likely to need and to help us establish lexical goals which the entire range of foundation courses preparing non-native speaking English students should be aiming for.

### **3.2.2 English for Academic Study (EAS) course**

The EAS course helps academic students who don't have the linguistic skills to join either the Foundation or Advanced Foundation courses by giving them an intensive English language and academic skills development programme after which they can move on to more content based studies on the foundation programmes. The course can be either one or two terms in length depending on the student's entrance level and month of the year when they join the programme. Students with an IELTS score of **3.5**, or an equivalent grade in a similar English language qualification, may enrol on the programme; however, the usual entrance level is an IELTS score of around **4.5**. The six students who were assessed as part of this experiment (4 Chinese and 1 Kazak) had all obtained an IELTS level of **4.5** minimum (Kings 2011).

As there is no content course component on this programme the focus on English language skills competencies provides for the improvement in the student's linguistic and academic skills appropriate for that level. The afternoon skills development classes focus predominantly on exam skills (IELTS preparation). However, recently a '2 hourly' slot has been added to focus on vocabulary acquisition skills. This component of the course has focused on the keeping of effective vocabulary notebooks and how students can utilise a range of online-based tools to measure their vocabulary level and development.

The experimentation for this paper, which took place during the vocabulary development slot in August 2011, involved increasing learner awareness of the importance of high frequency-based vocabulary in their English development by allowing them to assess their own lexical level by using the paper based tests mentioned above and by getting them to access Tom Cobb's online vocabulary test website (Cobb 2011); and through qualitative analysis techniques like interviewing and answering questionnaires, getting students to evaluate their vocabulary acquisition skills so that they can autonomously put their own lexis learning plan in place.

The tests were peer graded so students could make a comparison of their actual understanding of this key lexis; they could see the different between their receptive and productive comprehension, a correlation which Laufer highlighted as significant as she discovered that many English as a Second Language (ESL) courses were providing their students with a large passive, and specialist vocabulary, which was not being transferred so readily to active/productive use. Her figures showed a receptive/productive correlation of 0.72 for ESL students in comparson to a figure of 0.89 for learners on EFL courses (Nation 2001). She went on to speculate that this may be due to the fact that more EFL focused courses were form-focused as opposed to skills orientated and as a result students were more

actively involved in recording and using the target language. Based on Laufer's work Nation went on to conclude that the level of correlation between receptive and productive vocabulary was much closer for higher frequency items that were being tested for this experiment. If our experiment shows the receptive/productive correlations of the students in our experiment varied significantly from the figures highlighted above then there would be grounds for the course syllabus and content to be adapted to provide a greater focus on the receptive or productive skills needed to develop this more frequently encountered lexis (Nation 2001).

The question that arises is could an intensive vocabulary-based study programme focused on high-frequency vocabulary accelerate the rate at which this lexis was acquired. Due to the limitations imposed by the length of the academic courses I did not have sufficient time with the academic classes mentioned above to collect empirical data I would need to test how quickly high-frequency vocabulary could be acquired by students on the academic programmes. However, the private college I work at also has an general English language (EFL) division and the students on this programme have the option to study in an intensive vocabulary development SIG (special interest group) which runs for 6 weeks. This course was used to monitor vocabulary acquisition techniques and test for an improvement in vocabulary level. I decided that this SIG class should be my third population group to test the rate at which high-frequency vocabulary could be acquired.

### **3.2.3 Vocabulary SIG course**

The focus of this SIG group was to improve learners awareness of what vocabulary learning involves, to allow learners to assess their own level of English vocabulary knowledge, and to get learners to work on those self-study skills which would allow them to become more effective English vocabulary learners. The SIG course runs four '90 minute' classes a week over a six week time period and incorporating the following study elements: Receptive/Productive high-frequency vocabulary awareness and development; an extensive reading programme for vocabulary development; intensive topic-based vocabulary development tasks; and regular vocabulary testing to assess the learners' vocabulary coverage and high-frequency token usage.

With regards to the experiment being carried out for this paper this SIG class provided an excellent population group to allow the researcher to see if a specific focus on high-frequency lexis during had an impact on vocabular learning rates; and, as a result, if academic courses in the future should incorporate an intensive vocabulary acquisition and skills development programme.

## 4 Experiment description

The testing and data acquisition for this dissertation involved two distinct experiments. However, the aims of both experiments are similar in so far that they are testing the null hypothesis that there is a link between a students' receptive language level and their productive performance. The first experiment involved the use of a one off diagnostic vocabulary check to analyse the vocabulary levels students had reached at the end of three academically based language courses:

- English for Academic Studies course (Academic)
- University Foundation Course (Academic)
- IELTS exam preparation course (non-academic)

The second experiment involved the testing of the receptive and productive vocabulary development of pre-intermediate level students on a '6 week' general English vocabulary Special Interest Group (SIG) course. This experiment again aimed to prove the null hypothesis outlined above that there was a link between receptive and productive vocabulary skills development rates but was set to investigate how an intensive vocabulary programme, which focused on lexical skills development and high-frequency vocabulary advancement could impact on students' vocabulary knowledge levels. It went on further to investigate whether focusing on what Beck, McKeown and Omenson (1987) called the '*Rich Instruction*' of those significant high frequency words, which native speakers seem to acquire by the age of 5 and which second language learners have to automatise, because these words cover a significant percentage of the tokens they are likely to meet, could significantly impact on vocabulary comprehension levels.

### 4.1.1 Experiment One:

The first experiment involved the researcher in trying to assess whether it is appropriate to set a lexical target for the academic preparation courses by assessing the lexical knowledge of language learner populations from three distinct groups: the two academic courses mentioned above (the University Foundation Course and the English for Academic Skills course), and an IELTS preparation course which contained learners who were being prepared to take the Independent English Language Testing System ((IELTS) test for a mixture of reasons which included future English language academic studies through to requiring an IELTS score to assist them in meeting either emigration or UK medical qualification requirements.

These groups were chosen for their willingness to assist in this experiment by taking a test to assess their vocabulary knowledge, and also because these three populations comprised students from a range of cultural, linguistic, and academic backgrounds who were all engaged on English language courses with a clear academic focus. The one-off experiment conducted on them had the clear intention of assessing the lexical levels these students had reached with a view to allowing subsequent researchers to establish a link between lexical ability and to see if that could be linked with that student's competence

to cope with the requirements of their chosen academic course.

The first key decision that had to be made before this experiment could start was which type of vocabulary test should be used. Nation (2001) highlighted that there have traditionally been two methods of testing a learners total vocabulary size. The first is 'dictionary-based' and involves choosing a dictionary of the right size to contain all of the words that a learner might be expected to know, a representative sample of words (say 1 in a 1,000) is taken from this dictionary and the learners are tested on these words. The vocabulary size is worked out by taking the test result based on the proportional sample and making an appropriate multiplication (in this case by 1,000) to work out the learners size. This has traditionally been the method used for testing the vocabulary size of native speakers and is widely thought to be less appropriate for second language learners because of its focus on a wide range of dictionary entries which include a number of lower frequency items.

Assessment of second language learners needs to be more focused not an an estimate of overally lexical size but on a learners practical vocabulary knoweldge and this assessment has been more effectively made by using corpus-based tests where the test items are based on word frequency based groupings. This is valid in the second language learning scenario because it uses the language which the learner must acquire and automate first and if the learner's vocabulary knowledge does not include these high-frequency words then this learning need has to be identified and met on the language programme which the student is engaged on. Therefore for this experiment it was decided to choose Laufer and Nation's diagnostic Vocabulary Level Test.

This test was chosen because it is widely recognised measure of learners receptive and productive lexical ability and the assessment tool is based on corpus-based word frequency levels. In addition the test is widely and freely available – an online version can be found on Tom Cobb's website (2011), the test is easy to administer and mark; students can access this test again in the future to reassess themselves and measure any improvements in their performance; and, perhaps most significantly, it is widely used amongst academics researching vocabulary acquisition rates.

Academic researchers often highlight that the measurement of vocabulary level is not a precise science. Nation (1990) mentions that trying to answer the question 'How many words does a language learner know?' is often much more difficult than asking the question. He highlights 3 questions which the researcher must take into consideration:

- What should be counted as a word?  
Do we count knowledge of differing word **types** ( *allow* or *allows*) as one item; do we count the **lemma** (*allow* and *allows* would pass as one word but how about *allowance*; and how should **word families** (*allow, allowance, allowances, allowed, allowing, allows*) be tested.
- How does the researcher choose which words to test?  
Dictionary-based assessments can be biased because most dictionary pages, as most texts, are

dominated by high-frequency lexical items. As a result in a random sample of words (the first word of every 10<sup>th</sup> page of the dictionary for example) high-frequency tokens will predominate and any test based on this assessment form will overestimate the learners overall vocabulary level.

- How do we measure if a learner knows a word or not?

Vocabulary tests can differ considerably in what they ask the candidate to produce. For example a translation-based test would require more knowledge of a lexical item than a spelling based test which would require an even greater knowledge than a multiple-choice test item. Care must be taken that test formats are standardised so that the results obtain are valid and reliable when subject to cross-examination with other research data.

Another factor to be considered in vocabulary level test selection is to be clear exactly what is being tested. When Laufer (1998) carried out her receptive and productive vocabulary size tests of non-native speakers she went a little bit further than discovering the difference between *passive* and *active* vocabulary levels. She sub-divided active vocabulary knowledge into two distinct areas: **controlled active** and **free active**. The *passive* and *controlled active* vocabulary were measured using the same Laufer and Nation vocabulary level tests that the researcher has used to assess learner's vocabulary levels in this paper; Laufer discovered a learner's *free active* was discovered by collecting a learner's individual corpus and actively assessing the writing they were producing in free-writing activities. Although the writer of this paper agrees that this measurement of a learner's productive capability is perhaps the most reliable because of the background of the candidates being assessed and the length of time the researcher had with these candidates it would not have been practical to carry out this research during the course of the first experiment. However, as you will see later, the second experiment which focuses on learners' vocabulary acquisition rate over a '6 week' time period does allow for the collection of student corpuses for an assessment of *free active* vocabulary to be made.

Taking the above caveats into consideration the writer of this paper believes that the best compromise to allow for the standardisation of test results, and to maintain their validity and reliability, for experiment one the students should be given the paper-version of Laufer and Nation's test; and, because of the time restraints imposed by the duration of their classes, candidates should be given **90 minutes** to complete both the receptive and productive tests in test conditions without being allowed to refer to dictionaries or other documentation. This time restriction may be regarded as restrictive; especially, as we will see when analysing the statistical data below, it meant the lower level students/groups barely got beyond the 3,000 word level test and they spent a significantly higher proportion of their test time on the receptive as opposed to the productive questions.

On completion the tests would then be peer-marked to allow the experiment's recipients immediate feedback regarding their performance. The marking involved giving students an overall mark and a percentage grade for assess their receptive accuracy at 1000 word, 2,000 word, 3,000 word, 5,000 word,

Academic Word List, and 10,000 word levels; and their productive accuracy at 2,000, 3,000 word, 5,000 word, University Word List, and 10,000 word levels.

The receptive and productive test results were then analysed by the researcher with a view to measuring:

- Overall receptive and productive vocabulary levels for each student, overall average receptive and controlled productive vocabulary levels for each linguistic/nationality group on a particular course, and overall receptive and productive vocabulary levels for each course. On his website Tom Cobb states that the test candidates must score a minimum of 83% to regards themselves as competent at a particular word level and ready to move on to the next text. To estimate the vocabulary level a candidate's percentage performance comes to the following calculations were made:

<u>Word Level</u>	<u>Score</u>	<u>Percentage (%)</u>	
1,000a	33 (out of 40)	82.5	1,000 level average 86%
1,000b	36 (out of 40)	90	
2,000	26 (out of 30)	87%	
3,000	22 (out of 30)	74%	
5,000	8 (out of 30)	27%	
Academic	14 (out of 36)	35%	
10,000	2 (out of 36)	7%	

This candidate gets percentage scores which are highly than Cobb's 83% pass level for both the 1,000 word and the 2,000 word level. The 3,000 word level percentage score of 74% is too low for their vocabulary to be considered to at that level the candidate is allocated a pro-rate receptive word level between 2,000 and 3,000 words based on this percentage figure:-

$$(3,000 - 2,000) \times 74\% = \mathbf{740 \text{ words.}}$$

Therefore this candidate's receptive word level has been assessed as being approximately **2,740 words**.

<u>Word Level</u>	<u>Score (out of 18)</u>	<u>Percentage (%)</u>
2,000	16	<b>Error! No sequence specified.</b>
3,000	11	61.11
5,000	4	22.22
Academic	7	38.89
10,000	2	11.11

Based on the same 83% pass grade this test shows that the candidate's controlled productive vocabulary is greater than 2,000 words but has not reached the 3,000 word level. Therefore, as with the receptive test, to ascertain a level for this candidate the score their percentage score

for the 3,000 word test is used to assess a pro rate word level score between the 2,000 and 3,000 word marks:

$$(3,000 - 2,000) \times 61\% = \mathbf{610 \text{ words.}}$$

This candidate's controlled productive rate has been calculated at **2,610 words**.

Consideration was also given to the fact that some level test scores narrowly failed to reach Cobb's 83% pass level. Yet these candidates went on to take, and obtain a reasonable grade, at a higher word level test. It would be unreasonable to exclude a candidate's score at the higher level so for the purpose of this paper it has been decided to 'pro rata' scores candidates obtained according to the example (taken from the productive level test) below:

		2000	3000	5000	UWL	10,000	Total Productive word rate
a.	Chinese	28	22	0	0	0	446

This candidate is estimated to have a knowledge of **560 words** ( $28/100 * 2000$ ) at the 2,000 word level and **220 words** ( $22/100 * 1000$ ). These two scores are proportioned according to number of level tests that the candidate has attempted (see **Table 3**) so the productive word level score of the candidate highlighted would be based on them taking the two tests up to the 3,000 word level. There 2,000 word test score of 560 words would make up 'two thirds' of their overall calculation while the 220 word score for the 3,000 word test score would make up the final third. Therefore this candidate's overall productive word level would be:

$$(560 * 2/3) + (220 * 1/3) = \mathbf{446 \text{ words}}$$

**Table 3: Overall word level pro-rate proportional levels**

**Receptive:**

	Word level test completed						
	1000-a	1000-b	2000	3000	5000	Academic	10,000
Pro-rata Proportioning to calculate total rate	No pro-rata						
	$\frac{1}{2}$		$\frac{1}{2}$				
	$\frac{1}{3}$		$\frac{1}{3}$	$\frac{1}{3}$			
	$\frac{1}{5}$		$\frac{1}{5}$	$\frac{1}{5}$	$\frac{2}{5}$		
	$\frac{1}{10}$		$\frac{1}{10}$	$\frac{1}{10}$	$\frac{2}{10}$		$\frac{5}{10}$
	<i>(NB: The academic word level test has been ignored when calculating the candidates overall word level score.)</i>						

**Productive:**

	Test word level									
	2000		3000		5000		UWL	10,000		
Pro-rata Proportioning to calculate total rate	No pro-rata									
	$\frac{2}{3}$	+	$\frac{1}{3}$	+	$\frac{2}{5}$	+				
	$\frac{2}{5}$		$\frac{1}{5}$		$\frac{2}{5}$					
	$\frac{2}{10}$		$\frac{1}{10}$		$\frac{2}{10}$					$\frac{5}{10}$

Analysis would then compare and correlate students' performances in the receptive and productive tests. Laufer (1998) in her study of the receptive and vocabulary sizes of non-native speakers found that passive vocabulary was significantly larger than controlled active or free active vocabulary and the size differences between the categories increased with age with 16 year olds and 17 year olds having passive/active ratios of 0.67 and 0.78 respectively. In the same study she found similar correlations between the receptive and productive vocabulary sizes of ESL (0.72) and EFL (0.89) learners. (In her experiment she used the receptive and productive level tests I used in this experiment to measure 'passive' and 'controlled active' vocabulary, and a review of the students' *Lexical Frequency Profiles* to measure their 'free active' vocabulary.) Waring (1997) used the same level test tools to find that receptive scores of his Japanese students were always higher than their controlled productive scores and, which is more interesting when one reviews the results from my experiment. The difference in the scores increasing at the lower-frequency levels.

We could conclude from both these experiments that for high-frequency vocabulary items there should be a strong correlation between the receptive and controlled productive scores, and if this does not exist then a learner's need has been identified which should be addressed by incorporating activities into a syllabus plan that focus on the accurate productive use of higher frequency vocabulary.

The final assessment would be a quick grouping and comparison/contract of vocabulary level results according to the candidates' nationality, linguistic or cultural background. In recent years, enrolment of academic courses in the UK has been dominated by learners from particular ethnic backgrounds. It may be helpful for course administrators and syllabus designers if an assessment could be made of the lexical abilities and needs of learners according to their L1 background. An assessment can then be made of the particular vocabulary learning needs these students may have so that adjustments could be made to these students' syllabi to allow them to focus on perceived vocabulary weakness.

To summarise experiment one was very much focused on the students' perceived vocabulary level at the end of their academic courses. The passive and controlled active lexis a learner possessed could

then be cross-checked with the perceived aims of the course assessor and this could be used to adapt syllabus programmes to target lexical development if it is regarded as a significant reason for student under-performance.

#### **4.1.2 Experiment Two:**

This experiment has a separate rationale from the first experiment but could be seen as a natural follow on from the goal of experiment one which was the assessment of learners' vocabulary abilities at the end of their courses. Its focus was on the vocabulary acquisition rate of students on their '6 week' vocabulary SIG programme in September/October 2011. This experiment was to test the hypothesis that short-term intensive vocabulary skills development tasks could have an impact on learners' vocabulary acquisition rates. If this hypothesis was proven then it give evidence to allow course administrators to argue that intensive meaning-based high-frequency vocabulary acquisition should have a place on academic skills development programmes like a university foundation course.

This group of 10 students on the vocabulary SIG (Special Interest Group) course was chosen because it was possible to closely measure and test their performance over this period and to make an assessment of any level of lexical acquisition. However, it has to be remember that these students were studying on a general EFL course and may not have had an extensive academic background, or intended to go on to study on English-language academic programmes after completing this course. In addition, the general English programme on which these students were studying had a 'roll-on/roll-off' arrival/departure policy which meant some of the course participants were unable to commit themselves to the full '6 week' duration of the course. Only 8 of the students (2 Swiss, 2 Kazakhs, 2 Koreans, 1 Taiwanese, and 1 Italian) were available through the 8 weeks of the experiment and although two of these 8 were unable to do all three tests the experiment data is based on all the statistical data obtained.

An initial interview of these pre-intermediate to intermediate students were showed that most of them had limited knowledge of what vocabulary learning involved as they hadn't studied on an intensive vocabulary skills course in their English language learning history. They also had limited knowledge of what learning a 'new word' involved (learning its form, pragmatic function, pronunciation, spelling, construction, part of speech, collocations, contextual usage), which words to prioritise to improve their English level, and/or the learning skills they would need to acquire this vocabulary.

The main assessment component of the experiment consisted of giving the students the same Laufer and Nation vocabulary level test that was used in experiment one. An identical test was used at the beginning of week 1, the beginning of week 4, and at the end of week 6 of their '6 week' course to enable any improvement in student performance over the '6 week' period to be measured. Using the same test does present the risk that the data might be influenced by learners memorising questions and as a result performing proportionately better in the 'week 4' and 'week 6' tests resulting in test results not reflecting learners' general vocabulary knowledge. This argument was considered and rejected on

the grounds that using the same test would improve the reliability and validity of the test score comparison and any improvement in tests scores themselves could be taken as face value proof of vocabulary development.

This skills development programme focused students' learning on the four key strands which have been identified by Nation which contribute to the acquisition of vocabulary knowledge, and should therefore focus the basis of any lexical development course:

1. Meaning-focused input – appropriate listening and reading tasks. (The use of graded readers and dictation activities to provide form-based vocabulary learning based on high-frequency lexical items.)
2. Language-focused learning – the direct study and teaching of vocabulary. (Using word lists and gap-fill puzzles and activities focus on form and specific meaning of vocabulary items.)
3. Meaning-focused output – speaking and writing activities like the drilled practise of key words during spelling tests and summary drafting to allow students to engage in controlled active practise of targeted lexis.
4. Fluency development – giving the students specific productive tasks like writing essay or giving a presentation on a particular topic area which could incorporate target vocabulary from the course.

Another key assessment area mentioned above and which was made possible to assess because of the duration of the Vocabulary SIG was that of the learners' freer active level. Over the '6 week' course a corpus of student work has been collected which allowed for Laufer's *Lexical Frequency Profile* (1998) to be carried out both individually and in the group. The learners' corpuses could be measured using Cobb's *Vocab Profile* website tool (2011) to break down the learners' productive language into: *1,000 word*, *2,000 word*, *Academic wordlist*, and *off list* categories. This information was then used during the experiment to highlight the higher frequency (1,000 and 2,000) word items that the learners were not using with a view to highlighting these items for future intensive vocabulary input sessions. Similarly learners were shown to use this tool to assess their own lexis to get them to identify the high frequency items they were not using for them to include in their future freer productive writing.

### **4.1.3 Summary of the key questions:**

#### **In Experiment 1:**

- a. To measure the receptive and productive vocabulary levels of students at the end of the two key academic courses being assessed (EAP and UFY) and a general English IELTS exam preparation class.
- b. To make a comparison of these receptive and productive levels with a view to comparing these coefficient ratios with academic research carried out to establish a link between this ration and student performance.

**In Experiment 2:**

- c. An investigation into how much an intensive vocabulary skills programme can impact on receptive and productive word rates.

## 5 Analysis

### 5.1 Experiment One:

The two academic and the general English IELTS exam preparation class mentioned above were level checked at the end of their courses to assess the linguistic level of the students and obtain an estimated lexical benchmark to reflect the level that students should reach for their course.

#### 5.1.1 EAS tests

The vocabulary level test of the EAS students conducted on 15<sup>th</sup> August 2011 displayed the results shown in Tables 4a+4b+4c below. A key observation that the results displayed was the correlation rate between the learners' average receptive and productive test scores. These indicated that for this group that there was a significant correlation between their average receptive and productive vocabulary test scores at the 2,000 word level (**0.52**) and this figure dropped off quite markedly at the 3,000 word level test (**0.151**). This may be a clear indication that the word levels of the learners in this group are considerably short of the 3,000 word level and the in class they would need to focus on meaning-focus output and fluency activities to reduce the reductive and productive difference before they focus on expanding their lexis by studying lower-frequency items beyond the 3,000 word level. Another key observation is that those students who scored significantly better with regards to overall receptive and productive word level totals had significantly higher correlation percentages than their peers who achieve lower word level grades. *(Please note that candidate A's scores could be ignored with regards to correlation analysis because his late arrival for the test meant he was not given an opportunity to sit the lower level receptive tests.)*

**Table 4a – EAS Vocabulary Level Tests: Receptive Tests**

Student	Nationality	Word level							Receptive Word level
		1000-a	1000-b	2000	3000	5000	Academic	10,000	
1.	Chinese	0	0	0	47	0	0	0	157
2.	Chinese	85	83	87	50	0	0	0	2500
3.	Kazak	98	85	83	67	0	0	0	2670
4.	Chinese	78	95	80	63	0	0	0	2430
5.	Chinese	75	85	67	50	0	0	0	1970
6.	Chinese	60	88	63	30	0	0	0	1670
Av. Receptive score (%)		79.2	87.2	76	51.17	0	0	0	Av. receptive level: <b><u>2248</u></b>

**Table 4b - EAS Vocabulary Level Tests: Productive Test**

Student	Nationality	Word level (%)					Productive word level	Receptive/Productive correlation
		2000	3000	5000	UWL	10,000		
1.	Chinese	28	22	0	0	0	780	4.96
2.	Chinese	66	17	0	0	0	1490	0.59
3.	Kazak	61	17	0	0	0	1390	0.52
4.	Chinese	33	6	0	0	0	720	0.30
5.	Chinese	33	11	0	0	0	770	0.40
6.	Chinese	28	6	0	0	0	620	0.37
Av. productive score (%):		41.5	13.17	0	0	0	Av. Productive level: <u>962</u>	

**Table 4c - EAS Vocabulary Level Tests: Productive/receptive ratio:**

	Word level productive/receptive ratios				
	2000	3000	5000	UWL	10000
	0.52	0.151	0	0	0
Average productive/receptive ratio (%):	0.336				
Linear correlation coefficient (r)	0.5145				
Coefficient of determination (r <sup>2</sup> )	0.2647				

The linear correlation coefficient (r) for the EAS data of **0.5145** indicates a positive correlation between the receptive and productive test scores is verging on the weak side. The coefficient of determination (r<sup>2</sup>) of **0.2647** shows that only **26%** of the variation of the productive test scores can be explained by this a linear relationship with the receptive test. Out of interest if the distorting impact of Student 1's late arrival for the receptive test are removed then the linear correlation coefficient (r) would rise to **0.7692** indicating a much strong positive correlation between receptive and productive scores and the coefficient of determination (r<sup>2</sup>) would increase to a more statistically significant **0.5917**

### **5.1.2 UFY tests**

The vocabulary level tests conducted on students on the completion of the intensive University Foundation Year (UFY) programme in August 2001 show that the students at this level possessed significantly vocabulary knowledge levels: the receptive average of **5,137** words and a productive average of **3,802**. The data also shows stronger coefficients between receptive and productive

vocabulary levels than one can find at the EAS level with an average productive/receptive coefficient of **0.77**. The fact that UFY students are more advanced in their learning and as a result one would expect them to possess more advanced academic study skills to contribute to this improvement. However, one must also consider the national make-up of the group as 3 members of the population were Nigerian nationals whose English skills could be compared with native speakers. Indeed, a comparative analysis of group members shows that these student scored significantly higher than other group members (receptively an average of **6,070** compared to an average of **4,764** for the other students and perhaps more significantly a productive average of **5,989** compared to **2,490** for the non-Nigerian students).

Despite this possible distortion to the finding it is clear from the overall averages, and the averages form the non-Nigerian students, that students on completion of their UFY course have a receptive knowledge which covers enough high-frequency vocabulary to give them a reading text coverage of **95%** (Hu and Nation) which Laufer, Hu and Nation amongst others stated was required for 'minimally acceptable comprehension'. These students should therefore possess the passive comprehension skills they would need to process most of the academic and general texts they will encounter.

An interesting anomaly that appeared concerned one of the Nigerian students who obtained a significantly higher productive word level score than her receptive score. If this was to be taken literally it would mean she has the ability to use more words that she understands which is clearly a dubious observation. Looking at her individual test scores once can see that her results may be distorted by particularly low scores in her 5,000 and 10,000 level receptive tests and this may have been due to her racing through these sections to give her more time to complete the productive component of the test.

All of the students tested passed their foundation programme in the same month they took the vocabulary level tests and obtained the IELTS academic module scores they required to move to their selected universities. From this assumption it can be assumed that the receptive and productive scores may be considered as being of an appropriate enough level to allow students to UK-based university studies.

**Table 5a – University Foundation Year (UFY) Vocabulary Level Tests: Receptive**

Student	Nationality	Word Level							Receptive Word Level
		1000-a	1000-b	2000	3000	5000	Academic	10,000	
1.	Kazak	90	75	73	67	60	89	20	4600
2.	Emirati	87.5	80	87	70	37	44	0	3340
3.	Nigerian	97.5	80	100	100	37	42	20	4640
4.	Korean	67.5	80	90	77	83	86	33	5730
5.	Nigerian	97.5	95	100	100	100	94	50	7500
6.	Korean	75	72.5	93	80	43	0	0	3400
7.	Korean	90	85	90	100	80	89	43	6750
8.	Nigerian	-	-	-	-	-	-	-	-
<b>Average receptive score (%):</b>		86.43	81.07	90.43	84.86	62.86	63.43	23.71	Av. receptive level: <b>5,137</b>

**Table 5b - University Foundation Year (UFY) Vocabulary Level Tests: Productive Test**

Student	Nationality	Word Level					Productive word level	Receptive/Productive correlation
		2000	3000	5000	UWL	10,000		
1.	Kazak	67	28	17	17	17	2810	0.61
2.	Emirati	72	0	0	0	0	1440	(0.43)
3.	Nigerian	100	72	78	72	33	5946	1.28
4.	Korean	72	33	17	56	6	2410	0.42
5.	Nigerian	94	89	67	78	44	6540	0.87
6.	Korean	39	22	22	28	6	1740	0.51
7.	Korean	89	50	50	61	11	4050	0.6
8.	Nigerian	94	61	61	83	33	5480	---
<b>Average Productive Scores (%):</b>		78.38	50.71	44.57	56.43	21.43	<b>Av. Productive level: 3802</b>	

**Table 5c - University Foundation Year (UFY) Vocabulary Level Tests: Productive/receptive ratio:**

	Word level productive/receptive ratios				
	2000	3000	5000	UWL	10,000
	0.87	0.60	0.71	0.89	0.90
<b>Average productive/receptive ratio(%):</b>	0.77				
<b>Linear correlation coefficient (r)</b>	0.6884				
<b>Coefficient of determination (r<sup>2</sup>)</b>	0.4739				
<b>Standard Error</b>	1605.7532				

When calculating the correlation of the data for the UFY students the productive score for student 8 has been ignored because this individual missed their receptive test. Taking this into consideration the linear correlation coefficient (r) for the UFY group is **0.6884** which indicates a much stronger positive correlation between the receptive and productive test scores for the UFY group than with the EAS group ( where r = **0.5145**). This would indicate that the dependent variable (the productive vocabulary level test) is more likely to be influenced by the independent variable (the receptive vocabulary level test) for the UFY sample than was the case with the EAS sample. The coefficient of determination (r<sup>2</sup>) for the UFY vocabulary level test of **0.4739** indicates that a significantly higher percentage of the variation of the productive test scores can be explained by this tests linear relationship with the receptive test than was the case with the EAS group. Also of interest would be the observation that if the distorting impact of Student A's late arrival for the receptive test are removed then the linear correlation coefficient (r) would rise to **0.7692** indicating a much strong positive correlation between receptive and productive scores and the coefficient of determination (r<sup>2</sup>) would increase to are more statistically significant **0.5917**.

### **5.1.3 IELTS tests**

The results for the IELTS group were included because it was felt they would make an interesting comparison with the test scores of the UFY students. These students were predominantly studying on general English courses and didn't have the background in academic skills or meaning-based output that the UFY students had received. This may explain why IELTS students may obtain higher overall receptive word scores than UFY students (**5483** compared to **5137**) yet their productive word scores were considerably lower (**2341** against **3802**). As a result of this the average productive/receptive coefficient for the IELTS group of **0.44** is way below the figure of **0.77** obtained by the foundation group. This gives rise to the question why the IELTS preparation students are less able to apply their vocabulary knowledge productively.

Laufer partly covered this point when she noted that the productive/receptive coefficient of EFL users was higher than that of ESL users which she put down to the greater exposure that ESL learners had to native speakers and wider lexical range; an exposure that is not being matched by an improvement in their productive skills maybe because these learners do not possess the learner skills to appropriately recognise the forms of the new lexical tokens they were encountering so they were unable to utilise this lexis which they were recognising.

Due to the intensive training they have received the UFY students were more likely to put into productive use the vocabulary they had acquired therefore develop both their receptive and productive skills simultaneously. In addition the focus on academic study skills, the development of vocabulary acquisition skills to enable UFY students to more effectively acquire lower frequency lexis which they would need for their specialist university subjects, and the fact that they encounter and used this lower frequency vocabulary in context during the content subject studies on their foundation course, means that it should not come as a surprise to observers to see that the UFY students attained much higher productive scores in the 5,000, UWL, and 10,000 tests. As one of the prescribed aims of the UFY course is to encourage the rounded skills development of course participants it must be encouraging to course administrators to see that based on this section of the experiment Foundation students are more adapt at utilising their vocabulary than general English IELTS students of a similar receptive level.

**Table 6a – IELTS preparation class Vocabulary Level Tests: Receptive Test**

Student	Nationality	Word level							Receptive Word Level
		1000-a	1000-b	2000	3000	5000	Academic	10,000	
a.	Italian	95	97.5	90	67	70	89	40	6070
b.	Korean	88	88	90	70	50	56	23	4850
c.	Bulgarian	93	93	94	87	60	64	30	5700
d.	Bulgarian	95	98	87	84	50	86	43	6150
e.	Bulgarian	58	83	84	80	53	63	30	5080
f.	German	78	75	84	60	54	56	17	4560
g.	Swiss	93	93	97	94	60	72	27	5550
h.	Nepali	88	78	100	100	84	86	50	7500
i.	Kazak	75	68	87	57	30	47	20	3890
<b>Average receptive score (%)</b>		84.78	85.94	90.33	77.67	56.78	68.78	31.11	Av. receptive level: <b>5483</b>

**Table 6b – IELTS preparation class Vocabulary Level Tests: Productive Test**

Student	Nationality	Word Level					Productive word level	Receptive/Productive correlation
		2000	3000	5000	UWL	10,000		
a.	Italian	72	17	28	44	17	3020	0.50
b.	Korean	83	22	17	28	6	1860	0.38
c.	Bulgarian	61	22	22	39	11	2430	0.43
d.	Bulgarian	67	39	39	50	22	3610	0.59
e.	Bulgarian	67	27	22	11	17	2900	0.57
f.	German	50	11	17	22	6	1750	0.38
g.	Swiss	83	39	6	50	11	2060	0.37
h.	Nepali	72	27	17	44	0	2050	0.27
i.	Kazak	44	17	17	17	0	1390	0.36
<b>Av. Productive Scores(%)</b>		<b>67</b>	<b>25</b>	<b>21</b>	<b>34</b>	<b>10</b>	<b>2341</b>	

**Table 6c – IELTS preparation class Vocabulary Level Tests: Productive/Receptive coefficients**

	Word level productive/receptive ratios				
	2000	3000	5000	UWL	10,000
	73.68	31.62	36.2	0	0
<b>Average productive/receptive ratio (%):</b>	47.17				
<b>Linear correlation coefficient (r)</b>	0.4676				
<b>Coefficient of determination (r<sup>2</sup>)</b>	0.2186				
<b>Standard Error</b>	671.5907				

As we can see for Table 6c the linear correlation coefficient (r) for the IELTS group of **0.4676** displays the weakest positive correlation between the receptive and productive vocabulary levels of the three groups tested. In addition, the coefficient of determination (r<sup>2</sup>) of **0.2186** shows that just over a fifth of the variation of the productive test scores can be explained by these tests' linear relationship with the receptive test. It must be taken into consideration that all three experiments were conducted on relatively small population sizes so in all three cases the standard of the mean (standard deviation) is a significantly high figure.

However, it could be argued that for two of the three groups, the EAS group and the IELTS group, that the Null hypothesis is not proven and that the impact of receptive knowledge on the students' production of English is weak. In contrast, for the UFY group the link is stronger and there is evidence of correlation between the two distinct skills. It was beyond the scope of this experiment to analyse why this difference should occur but one could speculate that the higher exposure that the UFY students had to freer productive practice, both in their English skills and content classes, meant they were more comfortable with word form and its accurate reproduction. This could be taken as showing the importance of having a range of skills activities in a language course which allows learners to incorporate the receptive vocabulary they acquired into controlled and freer productive activities.

This leads us on to experiment 2 which tested whether receptive and productive vocabularies of students on an intensive vocabulary development course could develop at the same rate of progress.

## ***5.2 Experiment Two:***

After investigating the vocabulary capabilities of general IELTS students and two distinct levels of academic students at the end of their courses the second experiment was set up to investigate the hypotheses that:

1. A course based on intensive vocabulary training to improve a learner's awareness of higher frequency vocabulary over a six week period, could have a significant impact on the learners' receptive and productive vocabulary levels.
2. A strong correlation exists between the acquisition of receptive and productive lexis which would enable course designers, teachers and learners to identify a significant cross-over between the learning of receptive + productive vocabulary skills.

You will see from the series of tables below that the assessment element of the experiment involved testing the students, using Laufer and Nation's receptive + productive Vocabulary Levels tests, on three separate occasions:

1. Week 1 (Tables 7a, 7b, and 7c): the first lesson of the course.
2. Week 4 (Tables 8a, 9b, and 8c): halfway through the course.
3. Week 6 (Tables 9a, 9b and 9c): on completion of the course.

For each of the three test periods the 'a' tables display score for each word level test in percentages, the average receptive vocabulary score for each word level (%), a receptive word level for each learner, and the average receptive word level for the class, and an overall average receptive score (%). The 'b' tables show similar scores and percentages but showing the learner's productive scores. And the 'c' tables display the productive/receptive coefficient to enable us to make a comparison of the active and passive vocabularies.

**Table 7a: Vocabulary SIG Group Vocabulary Level Tests: Receptive - Week 1:**

	Name:	1,000a (%)	1,000b (%)	2,000 (%)	3,000 (%)	5,000 (%)	Academic (%)	10,000 (%)	Word Level
1	Chinese	76	69	63	37	0	8	0	<b>1730</b>
2	Swiss	97	87	90	30	60	77	50	<b>5920</b>
3	Swiss	84	77	83	60	67	94	20	<b>4610</b>
4	Korean	97	87	90	80	70	61	26	<b>5220</b>
5	Kazak	89	84	80	37	43	58	7	<b>3240</b>
6	Korean	86	92	83	60	27	61	0	<b>2860</b>
7	Italian	62	56	53	30	30	58	10	<b>2520</b>
8	Kazak	70	79	70	36	33	58	0	<b>2470</b>
Average receptive (%):		<b>82.63</b>	<b>78.88</b>	<b>76.50</b>	<b>46.25</b>	<b>41.25</b>	<b>59.38</b>	<b>14.13</b>	<b>3571</b>
Average receptive scores (%):		<b>56.59</b>							

**Table 7b: Vocabulary SIG Group Vocabulary Level Tests: Productive - Week 1:**

	Name:	2,000 (%)	3,000 (%)	5,000 (%)	UWL (%)	10,000 (%)	Word Level	Productive/receptive
1	Chinese	17	0	0	0	0	<b>340</b>	<b>0.2</b>
2	Swiss	67	56	28	22	0	<b>2460</b>	<b>0.42</b>
3	Swiss	44	22	22	0	0	<b>1540</b>	<b>0.33</b>
4	Korean	66	27	22	27	0	<b>2030</b>	<b>0.39</b>
5	Kazak	67	56	28	22	0	<b>1070</b>	<b>0.33</b>
6	Korean	44	6	0	0	0	<b>940</b>	<b>0.33</b>
7	Italian	39	17	6	22	0	<b>400</b>	<b>0.16</b>
8	Kazak	44	6	0	0	0	<b>1130</b>	<b>0.46</b>
Average productive (%):		<b>48.5</b>	<b>23.75</b>	<b>13.25</b>	<b>11.63</b>	<b>0.0</b>	<b>1239</b>	
Average productive scores (%):		<b>19.43</b>						

**Table 7c: Productive/Receptive ratio -Week 1:**

	<b>Word level productive/receptive ratios</b>				
	<b>2000</b>	<b>3000</b>	<b>5000</b>	<b>UWL</b>	<b>10,000</b>
	0.63	0.51	0.32	0.20	---
<b>Average productive/receptive ratio:</b>	0.42				
<b>Linear correlation coefficient (r)</b>	0.9671				
<b>Coefficient of determination (r<sup>2</sup>)</b>	0.9353				
<b>Standard Error</b>	231.6251				

The first factor to note from the week 1 test is the group contained learners from a wide level range. Although the students in this class should have been at least pre-intermediate level the scores indicate that Student 1 could be classified as high elementary at best and students 7 and 8 were only just at pre-intermediate level. In contrast students 2, 3, and 4 could be classified from their vocabulary scores as being at a strong intermediate level. Looking at the receptive and productive skills separately if we were to take Cobb's **83%** figure as proof of competency at a particular level then we could say that the group on average would be receptively just under the 2,000 word level (the groups average receptive 2,000 word level score being **76.50%**) while on the productive side the **48.5%** score in the 2,000 word level productive test would indicate that the students' productive vocabulary would be around the 1,000 word level.

The average productive/receptive coefficient of **0.42** is well below the average figures Laufer produced for ESL and EFL students. This may be explained by looking at the coefficients for each individual word level. As previous research has shown at the lower 2,000 level the productive/ receptive ratio is noticeably higher (**0.63**) meaning that students are more competent at putting vocabulary at this level into productive use. The ratio widens at higher levels until we reach the 10,000 word level where the inability any of the learners to either attempt the test, or get a single answer correct if some questions were attempted, meant that it was not even possible to produce a productive/receptive ratio figure. The time limit may be a factor for explaining the lower scores in the productive tests and the low scores in the higher level productive tests.

This may have been due to the learners' inexperience in dealing with this type of test before and, as a result, they used up too much time completing the receptive test and didn't give themselves enough time for the productive test. However, it could also be argued looking at the week 4 and week 6 test results the skills that the learners have acquired on the course could be leading to a quicker mental processing of lexical items providing evidence to support the hypothesis that intensive vocabulary tuition has a significant impact on lexical acquisition rates.

Table 7c shows that at the beginning of their course the vocabulary SIG group recorded a very strong linear correlation coefficient ( $r$ ) of **0.9671** and an equally strong Coefficient of determination ( $r^2$ ) of 0.9353. both of these stats demonstrate that for this group there is a very strong correlation between their receptive and productive scores and 93% of this correlation can be justified by the link between the the independent and dependent variables. These statistics may point to the fact that for this group the productive scores produced is highly dependent on their independent receptive knowledge of the learners.

The week 4 results (Tables 8a, 8b, and 8c) show an improvement in both receptive and productive word level scores. The receptive and productive word level rates both saw significant rises; the receptive rate

rose by 36% since week 1, from **3571** to **4857** words, while the productive word level went up by **35.5%** from **1239** to **1681**. Perhaps the most noticeable change was the fall in the productive/receptive coefficient from **0.42** in week 1 to **0.32** in week 4. This distortion can be explained by the learners managed to achieve more in the week 4 test and 5 of them attempted the 10,000 word level productive test and at this level the difference between learners' receptive and productive skills is more marked than at lower levels. Another factor to note in the Week 4 productive test is the better performance by learners in the UWL and 10,000 word level tests has to be contrasted with worse scores in the lower level 3,000 and 5,000 level tests. This may have been due to learners adopting an exam strategy of ignoring these words in the lower level tests that they found difficult to give themselves more time to answer questions in the higher level tests.

**Table 8a: Vocabulary SIG Group Vocabulary Level Tests: Receptive Week 4**

	Nationality	Word level							
		1000-a (%)	1000-b (%)	2000 (%)	3000 (%)	5000 (%)	Academic (%)	10,000 (%)	Word
1	Chinese	85	88	80	40	23	83	0	<b>2530</b>
2	Swiss	90	100	93	90	57	78	67	<b>7270</b>
3	Swiss	93	90	27	67	70	86	40	<b>5260</b>
4	Korean	93	95	97	87	80	81	40	<b>6380</b>
5	Kazak	90	93	87	57	53	64	33	<b>5070</b>
6	Korean	-	-	-	-	-	-	-	-
7	Italian	73	63	63	53	47	69	33	<b>4410</b>
8	Kazak	70	93	93	47	43	58	17	<b>3080</b>
Average receptive scores (%):		<b>84.86</b>	<b>88.86</b>	<b>77.14</b>	<b>63.00</b>	<b>53.29</b>	<b>74.14</b>	<b>32.86</b>	<b>4857</b>
Average receptive scores (%):		<b>67.73</b>							

**Table 8b: Vocabulary SIG Group Vocabulary Level Tests: Productive Week**

	Nationality	Word Level						Productive/receptive
		2000 (%)	3000 (%)	5000 (%)	UWL (%)	10,000 (%)	Word (%)	
1	Chinese	17	6	0	0	0	<b>400</b>	<b>0.16</b>
2	Swiss	78	28	28	22	22	<b>3500</b>	<b>0.48</b>
3	Swiss	72	33	33	33	11	<b>2430</b>	<b>0.46</b>
4	Korean	72	22	17	22	0	<b>2000</b>	<b>0.31</b>
5	Kazak	61	11	6	33	6	<b>1750</b>	<b>0.35</b>
6	Korean	-	-	-	-	-	-	-
7	Italian	28	6	6	17	11	<b>1290</b>	<b>0.29</b>
8	Kazak	17	6	0	0	0	<b>400</b>	<b>0.13</b>
Average productive scores:		<b>49.29</b>	<b>16.00</b>	<b>12.86</b>	<b>18.14</b>	<b>7.14</b>	<b>1681</b>	
Overall productive scores:		<b>20.69</b>						

**Table 8c – Vocabulary SIG Group Vocabulary Level Tests: Productive/Receptive Ratios Week 4**

	2000	3000	5000	UWL	10,000
	0.64	0.25	0.24	0.24	0.22
<b>Average productive/receptive ratio (%):</b>	0.32				
<b>Linear correlation coefficient (r)</b>	0.9197				
<b>Coefficient of determination (r<sup>2</sup>)</b>	0.8458				
<b>Standard Error</b>	504.0254				

As we saw in the Table 7c results for week1, the Table 8c results for week 4 display very strong correlations (Linear correlation coefficient of **0.9197**) between the independent receptive and the dependent productive vocabulary scores. This figure, and the Coefficient of Determination (r<sup>2</sup>) figure of **0.8458**, indicates that the vocabulary SIG learners productive test score is closely linked to their receptive performance.

The week 6 test showed that the learners’ average receptive word level increased by another **14%** between week 4 and week 6 (from **4857** words to **5551** words), and by **55%** over the 6 week experimental period (**3571** to **5551**). On the productive side there was a more significant **81%** increase in the learners’ average word level (from **1239** words to **2239** words). The productive/receptive ratio correlation also returns to a level (**0.44**) which is more similar to the level achieved in Week 1. Any evaluation as to why this is would have to be based on subjective opinion rather than an analysis of the statistical data; however, one can see that the Week 6 tests show a marked improvement in the higher level (5,000 and 10,000 word level) productive scores, an improvement that far exceeds the improvement of receptive scores, and one could speculate that this may be due to the learners’ familiarity with the tests allowing them to complete the receptive component of the test quicker allowing themselves to dedicate more time to attempting the more complex (higher level) sections of the productive test.

**Table 9a: Vocabulary SIG Group Vocabulary Level Tests: Receptive – Week 6:**

	Nationality	Word Level							
		1000-a	1000-b	2000	3000	5000	Academic	10000	Word
1	Chinese	85	90	83	40	0	8	0	<b>2100</b>
2	Swiss	100	93	90	60	60	78	73	<b>7310</b>
3	Swiss	95	95	90	70	80	86	50	<b>6650</b>
4	Korean	100	95	90	93	93	92	53	<b>7310</b>
5	Kazak	90	93	90	60	60	64	30	<b>5120</b>
6	Korean	95	98	90	77	40	64	10	<b>3940</b>
7	Italian	83	88	83	70	77	78	50	<b>6430</b>
8	Kazak								<b>0</b>
<b>Average receptive scores:</b>		<b>92.50</b>	<b>92.86</b>	<b>88.10</b>	<b>67.14</b>	<b>58.57</b>	<b>67.06</b>	<b>38.10</b>	<b>5551</b>
<b>Average receptive scores:</b>		<b>63.63</b>							

**Table 9b – Vocabulary SIG Group Vocabulary Level Tests: Productive - Week 6:**

	Nationality	Word Level						Productive/receptive
		2000 (%)	3000 (%)	5000 (%)	UWL (%)	10,000 (%)	Word (%)	
1	Chinese	11	17	0	0	0	390	0.18
2	Swiss	83	44	17	50	17	3290	0.45
3	Swiss	61	39	33	56	22	3370	0.51
4	Korean	72	33	33	50	11	2980	0.41
5	Kazak	56	28	17	33	6	2040	0.40
6	Korean	50	22	0	17	0	1220	0.31
7	Italian	17	50	28	33	28	2800	0.44
8	Kazak						0	0
<b>Average productive scores:</b>		<b>50.00</b>	<b>33.33</b>	<b>18.25</b>	<b>34.13</b>	<b>11.90</b>	<b>2299</b>	
<b>Overall productive scores:</b>		<b>29.52</b>						

**Table 9c: Productive/Receptive ratio – Week 6:**

	2000	3000	5000	Ac	10000
	0.57	0.50	0.31	0.51	0.31
<b>Average productive/receptive ratio:</b>	0.44				
<b>Linear correlation coefficient (r)</b>	0.9743				
<b>Coefficient of determination (r<sup>2</sup>)</b>	0.9493				
<b>Standard Error</b>	322.9458				

When assessing whether the experiment’s null hypotheses have been proved a key question that must be addressed is how much of this development in vocabulary can be put down to an improvement in the learners’ lexical levels and how much to familiarity with the test’s content. Although it would be difficult for learners to memorise significant answers it would be fair to presume that some questions, receptive test questions in particular, could be recalled in the subsequent tests.

However, the results for the vocabulary SIG show that over the 6 week trial period there as a greater increase in the grades for the spelling based productive test (**81%**) than for the receptive (**55%**). It can be assumed that part of this productive performance improvement could be put down to the improved exam skills and testing strategies of the candidates in being able to answer more questions in the productive test the higher, and therefore the reader should question whether the results obtained from

the limited number of lexical items used in this test could have validity when used to calculate a learners' overall size. However, the improved scores may also indicate that knowledge of the vocabulary tokens used for the test had been improved and therefore the intensive learning of these items had the result of improving the learners' automated production and vocabulary level.

Based on these increases in grades and the almost perfect Linear correlation coefficient ( $r$ ) of **0.9961** and the Coefficient of determination ( $r^2$ ) of **0.9922** when comparing the total word level scores in weeks 1,4, and 6 we can assume that the first null hypothesis that there is a strong link between the productive and receptive ratios is proven.

Regarding the second hypothesis regarding the link between receptive and productive word levels the linear correlation coefficient ( $r$ ) and the coefficient of determination ( $r^2$ ) ratios show, as they did in Weeks 1 and 4, that there was in week 6 a strong correlation between the learners receptive and productive scores ( $r=$  **0.9743**) and that most of the coefficient can be determined by the relationship between the independent receptive scores and their dependent productive scores ( $r^2=$ **0.9493**). Based on these correlation statistics the presumption can be made that there is a very strong correlation between a learners' receptive and productive vocabulary capabilities and this correlation doesn't alter significantly as the learners' vocabulary level improves.

## 6 Discussion

In her research Laufer (1998) had discovered productive/receptive efficiency rates of 0.72 for ESL learners and 0.89 for EFL learners; rates, these figures were subsequently supported by Waring and other researchers who showed that receptive word knowledge rates were higher than productive and that for lower level EFL learners whose instruction is based on form-recognition the correlation should be significantly higher. This is because these learners are more likely to be productively using their vocabulary input and therefore they have a greater propensity to memorize it than ESL L<sub>2</sub> users who are subject to a far greater range of lexical input but are given limited opportunities to produce this input. The strict time limit was a significant factor during this test because despite being advised prior to commencing the test an equal amount of time should be allocated to both the perceptive and productive tests the candidates were observed spending a greater proportion of their time on completing the receptive test thereby not allowing themselves sufficient time to deal with the 3,000 productive word test.

It has to be stated that the findings of our experiment were at odds with those of Laufer, Waring (ibid) in many regards:

- None of our population groups achieved anything like the same productive/receptive correlation ratios as Laufer and Waring suggested were achievable. This would indicate that a far greater gap between the productive and receptive vocabulary word levels of the population

groups in our experiments. There are various reasons why this could be: the first is that Laufer carried out her research on a group of students who were preparing for the Cambridge FCE, it could be argued that these students were being taught very specific vocabulary for that exam and vocabulary that they were often expected to reproduce in controlled and freer productive practise activities. The population groups for our experiment did not have such a clear cut vocabulary target and their course consisted on them acquiring a far wider range of functional and content vocabulary through the use of receptive tools like extensive reading which they were less likely to put into productive practise.

- Another observation both Laufer and Waring made was that there was a far stronger productive/receptive correlation among lower level learners than higher level learners. Once again our experiments produced results which did not agree with these findings. The productive/receptive correlation ratio of the lower level (pre-intermediate) EAS group of **0.336** was significantly lower than the ratio of **0.4676** produced by the intermediate-level IELTS group, or the **0.77** produced by the upper-intermediate level UFY group. Part of this differential could be explained by the various group dynamics. The EAS group consisted predominantly of Asian students who had were having issues with their written accuracy while the more European-based IELTS group, and the UFY group which had some students of native speaker level, could be said to contain learners with far more advanced writing skills.

It could be argued from the strong correlations that exist between productive and receptive skills development and the improvement in productive/receptive vocabulary levels made by students on the Vocabulary SIG course the experiment shows that syllabus designers on academic and university foundation programmes could give greater consideration to intensive vocabulary development as an integral part of a learner's development.

The present course's integrated skills development, focusing on the specific listening, reading, speaking, and writing skills learners will need for academic students, are an important part of any tertiary studies preparatory course but unless the learners have the basic building blocks of a sound grammatical knowledge of the functional and content-based vocabulary that appear in the first 1,000 words of West's GSL world list they will struggle to possess an appropriate linguistic level to utilise the academic and content subject skills they are being taught.

Grammar provision at all levels appears to be adequately provided for by the range of academic and general English coursebooks and materials on the markets. The experiment's findings seem to indicate that the question of vocabulary regarding the needs of academic learners is more complex and needs greater consideration by course providers and syllabus designers. One finding is the importance of students getting high scores at the lower/higher-frequency vocabulary levels (1,000; 2,000; 3,000; and AWL) in enabling those learners to obtain the word level they would need for their academic studies.

Academic courses must put this key lexis first and use a range of testing tools to ensure that the learner is aware of their lexical levels and some of the tools that are available to improve their knowledge of this key high-frequency lexis.

There are various steps that could be taken to achieve this goal:

- A greater emphasis on vocabulary testing.

The use of Laufer and Nation's Productive Level Tests before learners start their academic programme starts so that they are aware of their lexical level and to help them ascertain their vocabulary needs. This should be followed by regular diagnostic vocabulary tests throughout the course to allow learners to measure and ascertain the progress they are making with their vocabulary acquisition and to re-evaluate their vocabulary learning needs.

- Assess the vocabulary content of EAP courses.

Courses being taught should be assessed for their vocabulary content. Courses at pre-intermediate level should aim to cover the 2000 high-frequency items on West's GSL list and introduce the first 200 items on the AWL (the first 3 sublists). If the materials currently in use are not covering these times the course will need supplementing to intensive support in the learning of high-frequency vocabulary.

- Encourage greater learner autonomy on EAP courses.

Smith (2008) argued that allowing students the decision making powers to take charge of their own learning will allow them to target their course objectives, content materials, learning speed, learning methodology and technique, and self-evaluation process to allow them to focus their vocabulary learning skills to not just the needs of their foundation programme but also their subsequent learning and vocational goals.

To enable this to take place courses should put in place a range of tools and teacher support mechanisms to support the more autonomous learner. These tools may include a Moodle or WebCT based Learning Management System (LMS) which would offer the students flexibility with regards to the reading, vocabulary content input so that the student would be left with a needs-based choice on which input they would like to be study and be assessed on. This type of product could encourage the learner to engage in more targeted self-study and offer lexical products that would allow all learners to intensively focus on automating higher-frequency lexis, while at the same time giving them a wider range of extensive input sources for them to be more specialised in their study of subject-based lower-frequency lexis.

One particular way of developing self-directed learning that has been researched recently has been the establishment learner-centred lexical databases using the web. This approach has been explored by Friedman (2009) who monitored an experiment being performed with Japanese university students of English which focused on getting self-directed learners to use an online database and concordancer, similar to the Lexical Tutor tool discussed earlier (Cobb 2011), to create a course-based communal corpus based dictionary to facilitate the peer teaching of lexis. Learners could be directed through their LMS to find examples of web text reading related to their proposed field of study.

They would then use the concordancer/vocabulary profiler tool to analyse the lexical structure of the text and find out the percentage of high-frequency words the text possessed. The texts could be uploaded to a class database together with a short summary outlining the key lexical content. This would take the form of analysing the key content and meaning vocabulary tokens used and adding words of particular interest to the computerised vocabulary dictionary and concordancer. These items could be analysed using a concordancer, defined, translated, and utilised in subsequent extension activities where the rest of the class would be expected to draft a story or article summary including this vocabulary.

- Monitor learners' lexical record keeping

Vocabulary teaching literature often advocates that the keeping of adequate records helps in the promotion of lexical acquisition and develops learners' autonomy. The vocabulary training component of an EAP course must therefore look at how students respond to the lexical input they receive and then interact with it. Learners on the courses which were studied as part of this paper recognised the importance of note taking and used personal notebooks primarily to record new vocabulary that they encountered. Of the three students whose notebooks were inspected two used just one notebook for all notation purposes: completing gap-fill activities, in-class writing, and recording new vocabulary items, only the third student kept a separate notebook solely for recording new vocabulary.

All the students recording new vocabulary in list format and over 90% of the vocabulary tokens were translated into the students L1. Only on a few occasions were the vocabulary items recorded with an English language definition and very rarely, in less than 10% of the observed examples, were the new items recorded with a contextualising sentence, information about parts of speech added, or the words were recorded with synonyms or antonyms. There were no examples of additional note-taking to indicate reasons behind word selection or note taking strategies, or attempts to group words into categories according to either subject, meaning, or grammatical function. In other words the learners were adopting a bi-lingual approach to vocabulary recording which when asked about they informed the researcher mirrored the approach they had utilised on previous language courses they had attended in their home countries.

Most significantly further questioning revealed that the concept of word frequency, if known, was not important when deciding which words to record or how to record them, and the learners had not developed any strategies to incorporate the frequency of a vocabulary token into their recording of new lexis. As stated above there are distinct advantages to be obtained from having a frequency-based approach to vocabulary learning so learners should be encouraged to use tools like the *frequency finder* and *concordancer* on Cobb's website to check on how important their vocabulary is.

- Intensive direct teaching of vocabulary

Although it is important for a language course to teach students the skills they need to improve the level of unknown lexis they encounter during their incidental reading most evidence is pointing to maximum vocabulary being more effectively acquired from a mixture of the 'explicit' tuition and the 'incidental' encountering of key vocabulary.

Sonbul and Schmitt (2010) showed the superiority of an incidental + explicit approach in an experiment they conducted on Arabic L1 speaking students to compare the effectiveness of 'Read-Only' and 'Read-Plus' approaches on lexical acquisition over a period of time. They found that direct instruction tied to reading led to greater vocabulary learning in terms of better 'form recall' (sentence completion activity) and 'meaning recall' (translation activity) of previously unknown items. A 'read only' approach only seemed to benefit learners with regards to their receptive 'meaning recognition', the ability to recognise the meaning of the lexis in a multiple choice task, so a multi-level approach of vocabulary learning involving direct learning is required to ensure a deeper understanding of unknown items (Sonbul & Schmitt 2010).

In the same experiment they highlighted the importance of reading as a tool on L<sub>2</sub> vocabulary development. Reading, they argue, consolidates and supports any vocabulary work that teachers do in the classroom. This could be applied to EAP courses by teachers and course designers incorporating a range of reading texts directly linked to vocabulary being learned. This was actually being done on the Foundation programme that was investigated for this project, however the numbers of texts were limited and the course designers may want to consider expanding the range and format of texts available to learners to increase the number of running words they are being exposed to.

So what form should a comprehensive extensive reading curriculum component take for an academic course seeking to focus on vocabulary acquisition?

- Development of a extensive reading programme based on learners' vocabulary development needs

In the EAP programmes studied extensive reading is often presented as a recommended extra-curricular activity as opposed to being an integral part of the course. The demands of EAP syllabuses and constraints on course time make course designers and teachers apprehensive about incorporating it into their programmes. The lower level EAS programme's skill focus was very much controlled by the syllabus' input materials and the linguistic level of the learners; the course teachers reported that the intensive nature of the programme's reading component was necessary to develop the student's lexical competency of high frequency items and specific reading skills. They felt an extensive reading programme would not be an effective use of the limited time and at this level (**IELTS 4.5**) students would benefit more from a more itemised approach to lexis acquisition.

When we move on the higher level Advanced Foundation course there is a greater focus on reading skills development. However, this reading does contain a significant exam backwash component as it is based on set texts which integrate with the course's theme-based approach and its assessment structure. The texts are prescribed to support lists of key vocabulary for the seven key topic areas, one of which will feature in the final exam. With the content subject focus of the course teachers may want to consider committing some of the course's time to giving students greater autonomy over their reading input. It would be an interesting future experiment to see if this approach would increase student motivation at a time of the course when extrinsic motivation may start to diminish, allow students to be more focused on their final course objectives, and most significantly for this paper allow students to spend this time to develop their knowledge of lower frequency lexical items while the rest of the course can focus on greater receptive and productive accuracy regarding the use of higher fluency lexis.

Macallister (2007) argued that extensive reading within the classroom can have a place in an four skills EAP teaching programme following his research in New Zealand on a theme-based course. He did not establish a link between extensive reading and students' language proficiency or vocabulary development but he noted that the inclusion of this course component did not impact negatively on student performance but, conversely, improved student motivation. Macalister's experiment was that the reading he was monitoring was individually-oriented and not integrated into the other components of the course and the teachers' guided the learners towards extensively reading graded readers, primarily because the Vocabulary Level Tests (Nation 1990) used indicated that the students didn't have a solid enough mastery of first 2,000 word level to tackle more academic texts. He adopted this extensive reading approach to incorporate the key features of an extensive reading approach as laid out by Day and Bamford. To paraphrase these 10 key features they state that extensive reading programmes should be easy, learner led and focused, cover a wide range of topics, be pleasurable and rewarding, and they should use the teacher as a guide and role model (Day & Bamford 1998).

The higher level students on the foundation programme may be more motivated to follow an approach based on these principles and realise the importance of reading for academic research and developing their English vocabulary range. In addition students may show more commitment to extensive reading tasks if it was incorporated into a class based project to established a corpus of texts and other input sources specifically targetting the vocabulary needs of EAP students.

- Establishment of a graded reader corpus

As Macalister stated graded readers can have a role to play in encouraging students to engage in extra-curricular skills and vocabulary development particularly when the focus is on improving the student's accurate understanding of higher frequency general lexis. However, it has also been argued by Allan (2009) that graded reader texts could be made into a corpus, using concordancing tools, which would be appropriate for lower level learners with specific vocabulary and other learning needs. She referred to this approach as Data-driven Learning (DDL). Specifically it involves the use of the concordancing software, like Cobb's *Lexical tutor* (Cobb 2011), to find answers to linguistic questions by reference to a specially prepared corpus.

This approach has been used during the vocabulary skills course the EAS course investigated. Cobb's concordancer tool has been used by students to check how they have contextualised the higher frequency vocabulary they have used. The resulting profile allowing learners to make a continual assessment of the vocabulary they use in their productive output. As a result they can target the vocabulary acquisition strategies to target the higher frequency lexis which they are not currently used.

## 7 Conclusion

The research has shown that students at all levels are aware of the integral role that vocabulary knowledge and acquisition has as part of their linguistic development. They realise that without a knowledge of words, the academic/cognitive skills to expand their vocabulary range, or the pragmatic skills to handle the vocabulary they know they would find it difficult to get the most out of their future content based studies or be able to receptively or productively contribute in academic situations.

Qualitative feedback during this experiment also showed that students were predominantly using traditional rote learning techniques to expand their vocabulary range and they had limited range as to what learning a new lexical item involved. Indeed the focus on listing and translation in their vocabulary notebooks, often focused on lower frequency lexis used in specific contexts, showed that they would benefit from guidance into how to recognise and prioritise the key vocabulary they have to learn and utilising different techniques, as recommended by Nation, to approach vocabulary development based on need.

To be more specific, the learners' awareness of the concept of frequency with regards to vocabulary usage would be a significant factor in the development of their vocabulary knowledge. The mastery of these items at both EAS and advanced foundation level could be achieved by getting learners to maintain vocabulary notebooks focusing on meaning-based context and through an appropriate topic-based chunking of language.

This should be supported by getting students through intensive vocabulary tuition activities to identify which higher frequency items they are having most difficulty with. The teacher could use an activity like L1 translation followed by retranslation back into English, or gap-fill activities, to get learners to identify the word types they have problems with and then use online tools like the *ListLearn* page on Cobb's Lextutor website to get learners to build their own corpus based notebook/dictionary focused on the contextualised use of higher-frequency lexis.

Greater lexical awareness could then be achieved by getting learners to blend the word tokens they record in their vocabulary notebooks into the other receptive and productive skills on their course. For example, on the productive side, engaging learners in *vocabulary profiling* as part of a process writing activity would allow learners to analyse their language range and encourage them to incorporate the higher-frequency items they are not already using as they build up their personal corpus. Using Cobb's *Vocabprofile* page from Lextutor would enable students to identify the types, tokens and word families they are using in their drafts and getting them to print off a results page of their profile research to keep next to their essays will allow them to statistically analyse productive usage.

To summarise it has been found that there are significant correlations between a learners' receptive and productive vocabulary development and intensive tuition of higher-frequency vocabulary could have a part to play in an academic English programme. Academic course designers could as a consequence review how much their syllabuses focus on higher-frequency lexical acquisition, and whether they offer the range of intensive and extensive vocabulary acquisition tasks which would allow learners to target the functional and content language they need.

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**Appendix 1: Levels Test (Recognition) Level 1k, Test 1**

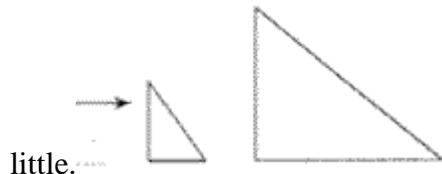
Instructions: There are 39 questions. Click "T" if a sentence is true. Click "N" if a sentence is not true. Click "X" if you do not understand the sentence. At the end of the test, click "Score" (on left).

The first one has been answered for you.

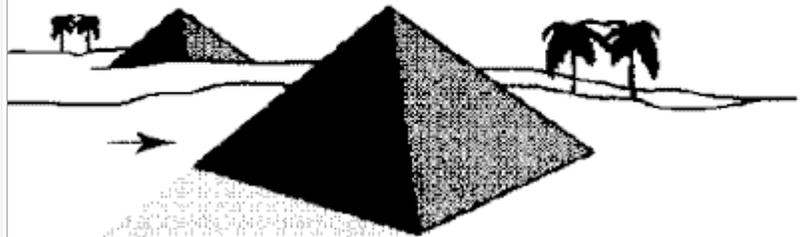
Example: We cut time into minutes, hours, and days.

- T (This is **True**)
- N (This is **Not true**)
- X (I do **Not understand** the question)

1. This one is



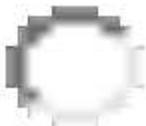
- T
- } N
- X



2. You can find these everywhere.

- T
- N
- X

**Appendix 1: Levels Test (Recognition) Level 1k, Test 1**

<p><b>3.</b> Some children call their mother Mama.</p> <p><input type="radio"/> T</p> <p><input type="radio"/> N</p> <p><input type="radio"/> X</p>	<p><b>4.</b> <i>Show me the way to do it</i> means 'show me how to do it.'</p> <p><input type="radio"/> T</p> <p><input type="radio"/> N</p> <p><input type="radio"/> X</p>
<p><b>5.</b> This country is part of the world.</p> <p><input type="radio"/> T</p> <p><input type="radio"/> N</p> <p><input type="radio"/> X</p>	<p><b>6.</b> This can keep people away from your</p>  <p>house.</p> <p><input type="radio"/> T</p> <p><input type="radio"/> N</p> <p><input type="radio"/> X</p>
<p><b>7.</b> When something falls, it goes up.</p> <p><input type="radio"/> T</p> <p><input type="radio"/> N</p> <p><input type="radio"/> X</p>	<p><b>8.</b> Most children go to school at night.</p> <p><input type="radio"/> T</p> <p><input type="radio"/> N</p> <p><input type="radio"/> X</p>
<p><b>9.</b> It is easy for children to remain still.</p> <p><input type="radio"/> T</p> <p><input type="radio"/> N</p> <p><input type="radio"/> X</p>	 <p><b>10.</b> One person can carry this.</p> <p><input type="radio"/> T</p> <p><input type="radio"/> N</p> <p><input type="radio"/> X</p>

**Appendix 1: Levels Test (Recognition) Level 1k, Test 1**

<p><b>11.</b> A scene is part of a play.</p> <p><input type="radio"/> T <input type="radio"/> N <input type="radio"/> X</p>	<p><b>12.</b> People often think of their home, when they are away from it.</p> <p><input type="radio"/> T <input type="radio"/> N <input type="radio"/> X</p>
<p><b>13.</b> There is a mountain in every city.</p> <p><input type="radio"/> T <input type="radio"/> N <input type="radio"/> X</p>	<p><b>14.</b> Every month has the same number of days.</p> <p><input type="radio"/> T <input type="radio"/> N <input type="radio"/> X</p>
<p><b>15.</b> A chief is the youngest person in a group.</p> <p><input type="radio"/> T <input type="radio"/> N <input type="radio"/> X</p>	<p><b>16.</b> Blue is a colour.</p> <p><input type="radio"/> T <input type="radio"/> N <input type="radio"/> X</p>
<p><b>17.</b> You can use a pen to make marks on paper.</p> <p><input type="radio"/> T <input type="radio"/> N <input type="radio"/> X</p>	<p><b>18.</b> A family always has at least two people.</p> <p><input type="radio"/> T <input type="radio"/> N <input type="radio"/> X</p>
<p><b>19.</b> You can go by road from London to New York.</p> <p><input type="radio"/> T <input type="radio"/> N</p>	<p><b>20.</b> Silver costs a lot of money.</p> <p><input type="radio"/> T <input type="radio"/> N</p>

**Appendix 1: Levels Test (Recognition) Level 1k, Test 1**

<p><input type="radio"/> X</p>	<p><input type="radio"/> X</p>
<p><b>21.</b> This is a hill.</p>  <p><input type="radio"/> T <input type="radio"/> N <input type="radio"/> X</p>	 <p><b>22.</b> This young person is a girl.</p> <p><input type="radio"/> T <input type="radio"/> N <input type="radio"/> X</p>
<p><b>23.</b> We can be sure that one day we will die.</p> <p><input type="radio"/> T <input type="radio"/> N <input type="radio"/> X</p>	<p><b>24.</b> A society is made up of people living together.</p> <p><input type="radio"/> T <input type="radio"/> N <input type="radio"/> X</p>
<p><b>25.</b> An example can help you understand.</p> <p><input type="radio"/> T <input type="radio"/> N <input type="radio"/> X</p>	<p><b>26.</b> Some books have pictures in them.</p> <p><input type="radio"/> T <input type="radio"/> N <input type="radio"/> X</p>
<p><b>27.</b> When some people attack other people, they try to hurt them.</p>	<p><b>28.</b> When something is ancient, it is very big.</p>

**Appendix 1: Levels Test (Recognition) Level 1k, Test 1**

<ul style="list-style-type: none"><li><input type="radio"/> T</li><li><input type="radio"/> N</li><li><input type="radio"/> X</li></ul>	<ul style="list-style-type: none"><li><input type="radio"/> T</li><li><input type="radio"/> N</li><li><input type="radio"/> X</li></ul>
<p><b>29.</b> Big ships can sail up a stream.</p> <ul style="list-style-type: none"><li><input type="radio"/> T</li><li><input type="radio"/> N</li><li><input type="radio"/> X</li></ul>	<p><b>30.</b> It is good to keep a promise.</p> <ul style="list-style-type: none"><li><input type="radio"/> T</li><li><input type="radio"/> N</li><li><input type="radio"/> X</li></ul>
<p><b>31.</b> People often dream when they are sleeping.</p> <ul style="list-style-type: none"><li><input type="radio"/> T</li><li><input type="radio"/> N</li><li><input type="radio"/> X</li></ul>	<p><b>32.</b> This is a date - 10 o'clock.</p> <ul style="list-style-type: none"><li><input type="radio"/> T</li><li><input type="radio"/> N</li><li><input type="radio"/> X</li></ul>
<p><b>33.</b> When something is impossible, it is easy to do it.</p> <ul style="list-style-type: none"><li><input type="radio"/> T</li><li><input type="radio"/> N</li><li><input type="radio"/> X</li></ul>	<p><b>34.</b> Milk is blue.</p> <ul style="list-style-type: none"><li><input type="radio"/> T</li><li><input type="radio"/> N</li><li><input type="radio"/> X</li></ul>
<p><b>35.</b> A square has five sides.</p> <ul style="list-style-type: none"><li><input type="radio"/> T</li><li><input type="radio"/> N</li><li><input type="radio"/> X</li></ul>	<p><b>36.</b> Boats are made to travel on land.</p> <ul style="list-style-type: none"><li><input type="radio"/> T</li><li><input type="radio"/> N</li><li><input type="radio"/> X</li></ul>

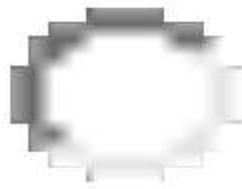
**Appendix 1: Levels Test (Recognition) Level 1k, Test 1**

**37.** Cars cannot pass each other on a wide road.

- T
- N
- X

**38.** When you look at something closely, you can see the details.

- T
- N
- X



**39.** This part is a handle.

- T
- N
- X

## Appendix 2: Levels Test of Vocabulary – Recognition (Tests)

This is a vocabulary test. You must choose the right word to go with each meaning. Write the number of that word next to its meaning. Here is an example.

### Here is an example

1. business
2. clock  part of a house
3. horse  animal with four legs
4. pencil  something used for writing
5. shoe
6. wall

### You answer it the following way.

1. business
2. clock  part of a house
3. horse  animal with four legs
4. pencil  something used for writing
5. shoe
6. wall

Some words are in the test to make it more difficult. You do not have to find a meaning for those words. In the example above, these words are: *business, clock, and shoe*.

You can do any part of the test or the complete test. Click *Score on the left at any time*.

**Appendix 2: Levels Test of Vocabulary – Recognition (Tests)**

**2000 level**

1. original			1. apply		
2. private	<input type="checkbox"/>	complete	2. elect	<input type="checkbox"/>	choose by voting
3. royal	<input type="checkbox"/>	first	3. jump	<input type="checkbox"/>	become like water
4. slow	<input type="checkbox"/>	not public	4. manufacture	<input type="checkbox"/>	make
5. sorry			5. melt		
6. total			6. threaten		
1. blame			1. accident		
2. hide	<input type="checkbox"/>	keep away from sight	2. choice	<input type="checkbox"/>	having a high opinion of yourself
3. hit	<input type="checkbox"/>	have a bad effect on something	3. debt	<input type="checkbox"/>	something you must pay
4. invite	<input type="checkbox"/>	ask	4. fortune	<input type="checkbox"/>	loud, deep sound
5. pour			5. pride		
6. spoil			6. roar		
1. basket			1. birth	<input type="checkbox"/>	
2. crop	<input type="checkbox"/>	money paid regularly for doing a job	2. dust	<input type="checkbox"/>	being born
3. flesh	<input type="checkbox"/>	heat	3. operation	<input type="checkbox"/>	game
4. salary	<input type="checkbox"/>	meat	4. row	<input type="checkbox"/>	winning
5. temperature			5. sport		
6. thread			6. victory		

**Appendix 2: Levels Test of Vocabulary – Recognition (Tests)**

**3000 Level**

1. administration					
2. angel	<input type="checkbox"/>	managing business and affairs	1. bench	<input type="checkbox"/>	part of a country
3. front	<input type="checkbox"/>	spirit who serves God	3. fort	<input type="checkbox"/>	help to the poor
4. herd	<input type="checkbox"/>	group of animals	4. jar	<input type="checkbox"/>	long seat
5. mate			5. mirror		
6. pond			6. province		
1. coach					
2. darling	<input type="checkbox"/>	a thin, flat piece cut from something	1. marble	<input type="checkbox"/>	inner surface of your hand
3. echo	<input type="checkbox"/>	person who is loved very much	3. ridge	<input type="checkbox"/>	excited feeling
4. interior	<input type="checkbox"/>	sound reflected back to you	4. scheme	<input type="checkbox"/>	plan
5. opera			5. statue		
6. slice			6. thrill		

**Appendix 2: Levels Test of Vocabulary – Recognition (Tests)**

1. discharge				
2. encounter	<input type="checkbox"/>	use pictures or examples to show the meaning	1. annual	
3. illustrate	<input type="checkbox"/>	meet	2. blank	<input type="checkbox"/> happening once a year
4. knit	<input type="checkbox"/>	throw up into the air	3. brilliant	<input type="checkbox"/> certain
5. prevail			4. concealed	<input type="checkbox"/> wild
6. toss			5. definite	
			6. savage	

**5000 Level**

1. alcohol			1. circus	
2. apron	<input type="checkbox"/>	cloth worn in front to protect your clothes	2. jungle	<input type="checkbox"/> speech given by a priest in a church
3. lure	<input type="checkbox"/>	stage of development	3. nomination	<input type="checkbox"/> seat without a back or arms
4. mess	<input type="checkbox"/>	state of untidiness or dirtiness	4. sermon	<input type="checkbox"/> musical instrument
5. phase			5. stool	
6. plank			6. trumpet	

**Appendix 2: Levels Test of Vocabulary – Recognition (Tests)**

1. apparatus			1. bruise		
2. compliment	<input type="checkbox"/>	set of instruments or machinery	2. exile	<input type="checkbox"/>	agreement using property as security for a debt
3. revenue	<input type="checkbox"/>	money received by the government	3. ledge	<input type="checkbox"/>	narrow shelf
4. scrap	<input type="checkbox"/>	expression of admiration	4. mortgage	<input type="checkbox"/>	dark place on your body caused by hitting
5. tile			5. shovel		
6. ward			6. switch		
1. blend			1. desolate		
2. devise	<input type="checkbox"/>	hold tightly in your arms	2. fragrant	<input type="checkbox"/>	good for your health
3. embroider	<input type="checkbox"/>	plan or invent	3. gloomy	<input type="checkbox"/>	sweet-smelling
4. hug	<input type="checkbox"/>	mix	4. profound	<input type="checkbox"/>	dark or sad
5. imply			5. radical		
6. paste			6. wholesome		

**Appendix 2: Levels Test of Vocabulary – Recognition (Tests)**

**University Word List**

1. affluence

2. axis

3. episode

4. innovation

5. precision

6. tissue

introduction of a new thing

one event in a series

wealth

1. deficiency

2. magnitude

3. oscillation

4. prestige

5. sanction

6. specifying

swinging from side to side

respect

lack

1. configuration

2. discourse

3. hypothesis

4. intersection

5. partisan

6. propensity

shape

speech

theory

1. anonymous

2. indigenous

3. maternal

4. minimum

5. nutrient

6. modification

without the writer's name

least possible amount

native

**Appendix 2: Levels Test of Vocabulary – Recognition (Tests)**

1. elementary			1. coincide		
2. negative	<input type="checkbox"/>	of the beginning stage	2. coordinate	<input type="checkbox"/>	prevent people from doing something they want to do
3. static	<input type="checkbox"/>	not moving or changing	3. expel	<input type="checkbox"/>	add to
4. random	<input type="checkbox"/>	final, furthest	4. frustrate	<input type="checkbox"/>	send out by force
5. reluctant			5. supplement		
6. ultimate			6. transfer		

**10,000 Levels**

1. acquiesce			1. blaspheme		
2. contaminate	<input type="checkbox"/>	work at something without serious intentions	2. endorse	<input type="checkbox"/>	give care and food to
3. crease	<input type="checkbox"/>	accept without protest	3. nurture	<input type="checkbox"/>	speaking badly about God
4. dabble	<input type="checkbox"/>	make a fold on cloth or paper	4. overhaul	<input type="checkbox"/>	slip or slide
5. rape			5. skid		
6. squint			6. straggle		

**Appendix 2: Levels Test of Vocabulary – Recognition (Tests)**

1. auxiliary					
2. candid	<input type="checkbox"/>	full of self importance	1. anterior		
3. dubious	<input type="checkbox"/>	helping, adding support	2. concave	<input type="checkbox"/>	small and weak
4. morose	<input type="checkbox"/>	bad-tempered	3. interminable	<input type="checkbox"/>	easily changing
5. pompous			4. puny	<input type="checkbox"/>	endless
6. temporal			5. volatile		
			6. wicker		
1. dregs					
2. flurry	<input type="checkbox"/>	worst and most useless parts of anything	1. auspices		
3. hostage	<input type="checkbox"/>	natural liquid present in the mouth	2. casualty	<input type="checkbox"/>	being away from other people
4. jumble	<input type="checkbox"/>	confused mixture	3. froth	<input type="checkbox"/>	someone killed or injured
5. saliva			4. haunch	<input type="checkbox"/>	noisy and happy celebration
6. truce			5. revelry		
			6. seclusion		

## Appendix 2: Levels Test of Vocabulary – Recognition (Tests)

### Test A: 2000 level

1. I'm glad we had this opp[ ] to talk.
2. There are a doz[ ] eggs in the basket.
3. Every working person must pay income t[ ].
4. The pirates buried the trea[ ] on a desert island.
5. Her beauty and ch[ ] had a powerful effect on men.
6. La[ ] of rain led to a shortage of water in the city.
7. He takes cr[ ] and sugar in his coffee.
8. The rich man died and left all his we[ ] to his son.
9. Pup[ ] must hand in their papers by the end of the week.
10. This sweater is too tight. It needs to be stret[ ].
11. Ann intro[ ] her boyfriend to her mother.
12. Teenagers often adm[ ] and worship pop singers.
13. If you blow up that balloon any more it will bu[ ].
14. In order to be accepted into the university, he had to impr[ ] his grades.
15. The telegram was deli[ ] two hours after it had been sent.
16. The differences were so sl[ ] that they went unnoticed.
17. The dress you're wearing is lov[ ].
18. He wasn't very popu[ ] when he was a teenager, but he has many friends now.

### Appendix 3: Vocabulary Levels Test (Productive)

#### Test A: 2000-3000 level

1. He has a successful car[ ] as a lawyer.
2. The thieves threw ac[ ] in his face and made him blind.
3. To improve the country's economy, the government decided on economic ref[ ].
4. She wore a beautiful green go[ ] to the ball.
5. The government tried to protect the country's industry by reducing the imp[ ] of cheap goods.
6. The children's games were amusing at first, but finally got on the parents' ner[ ].
7. The lawyer gave some wise coun[ ] to his client.
8. Many people in England mow the la[ ] of their houses on Sunday morning.
9. The farmer sells the eggs that his he[ ] lays.
10. Sudden noises at night sca[ ] me a lot.
11. France was proc[ ] a republic in the 18th century.
12. Many people are inj[ ] in road accidents every year.
13. Suddenly he was thru[ ] into the dark room.
14. He perc[ ] a light at the end of the tunnel.
15. Children are not independent. They are att[ ] to their parents.
16. She showed off her sle[ ] figure in a long narrow dress.
17. She has been changing partners often because she cannot have a sta[ ] relationship with one person.
18. You must wear a bathing suit on a public beach. You're not allowed to bath na[ ].

### Appendix 3: Vocabulary Levels Test (Productive)

#### Test A: 3000-5000 level

1. Soldiers usually swear an oath  of loyalty to their country.
2. The voter placed the ballot  in the box.
3. They keep their valuables in a vault  at the bank.
4. A bird perched at the window ledge .
5. The kitten is playing with a ball of yarn .
6. The thieves have forced an entrance  into the building.
7. The small hill was really a burial mound .
8. We decided to celebrate New Year's Eve  together.
9. The soldier was asked to choose between infantry and cavalry .
10. This is a complex problem that is difficult to comprehend .
11. The angry crowd shouted  the prisoner as he was leaving the court.
12. Don't pay attention to this rude remark. Just ignore  it.
13. The management held a secret meeting. The issues discussed were not disclosed  to the workers.
14. We could hear the sergeant bellow  commands to the troops.
15. The boss got angry with the secretary and it took a lot of tact to soothe  him.
16. We do not have adequate  information to make a decision.
17. She is not a child, but a mature  woman. She can make her own decisions.
18. The prisoner was put in solitary  confinement.

### Appendix 3: Vocabulary Levels Test (Productive)

#### Test A: University Word List

1. There has been a recent tr[ ] among prosperous families toward a smaller number of children.
2. The ar[ ] of his office is 25 square meters.
3. Phil[ ] examines the meaning of life.
4. According to the communist doc[ ], workers should rule the world.
5. Spending many years together deepened their inti[ ].
6. He usually read the sports sec[ ] of the newspaper first.
7. Because of the doctors' strike, the cli[ ] is closed today.
8. There are several misprints on each page of this te[ ].
9. The suspect had both opportunity and mot[ ] to commit the murder.
10. They insp[ ] all products before sending them out to stores.
11. A considerable amount of evidence was accum[ ] during the investigation.
12. The victim's shirt was satu[ ] with blood.
13. He is irresponsible. You cannot re[ ] on him for help.
14. It's impossible to eva[ ] these results without knowing about the research methods that were used.
15. He finally att[ ] a position of power in the company.
16. The story tells about a crime and subs[ ] punishment.
17. In a hom[ ] class all students are of a similar proficiency.
18. The urge to survive is inh[ ] in all creatures.

### Appendix 3: Vocabulary Levels Test (Productive)

#### Test A / 5000-10,000 level

1. The baby is wet. Her dia[ ] needs changing.
2. The prisoner was released on par[ ].
3. Second year university students in the US are called soph[ ].
4. Her favourite flowers were or[ ].
5. The insect causes damage to plants by its toxic sec[ ].
6. The evacu[ ] of the building saved many lives.
7. For many people, wealth is a prospect of unimaginable felic[ ].
8. She found herself in a pred[ ] without any hope for a solution.
9. The deac[ ] helped with the care of the poor of the parish.
10. The hurricane whi[ ] along the coast.
11. Some coal was still smol[ ] among the ashes.
12. The dead bodies were mutil[ ] beyond recognition.
13. She was sitting on a balcony and bas[ ] in the sun.
14. For years waves of invaders pill[ ] towns along the coast.
15. The rescue attempt could not proceed quickly. It was imp[ ] by bad weather.
16. I wouldn't hire him. He is unmotivated and indo[ ].
17. Computers have made typewriters old-fashioned and obs[ ].
18. Watch out for his wil[ ] tricks.