The Graded Reader is Dead, Long Live the Electronic Reader

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ABSTRACT

Many course books for learners of English as a second or foreign language now claim to contain a strong lexical component. Other practitioners meanwhile continue to advocate the use of graded readers to augment vocabulary development. This article reports the findings of vocabulary profiling and analysis of both course books and graded readers and reveals that in neither case do the approaches taken to vocabulary development fully account for recent research into vocabulary acquisition and vocabulary pedagogy. The results of this study establish principles that are used to revisit the graded reader concept and develop a series of 'eReaders' within a framework of corpus-based studies and Web 2.0 applications. Initial results in piloting these eReaders suggest that a principled corpus-informed approach to text construction and exploitation has strong potential to help learners develop both an in-depth and productive knowledge of the most frequently used words in English, and thereby fill the void left by traditional methods of dealing with vocabulary development.
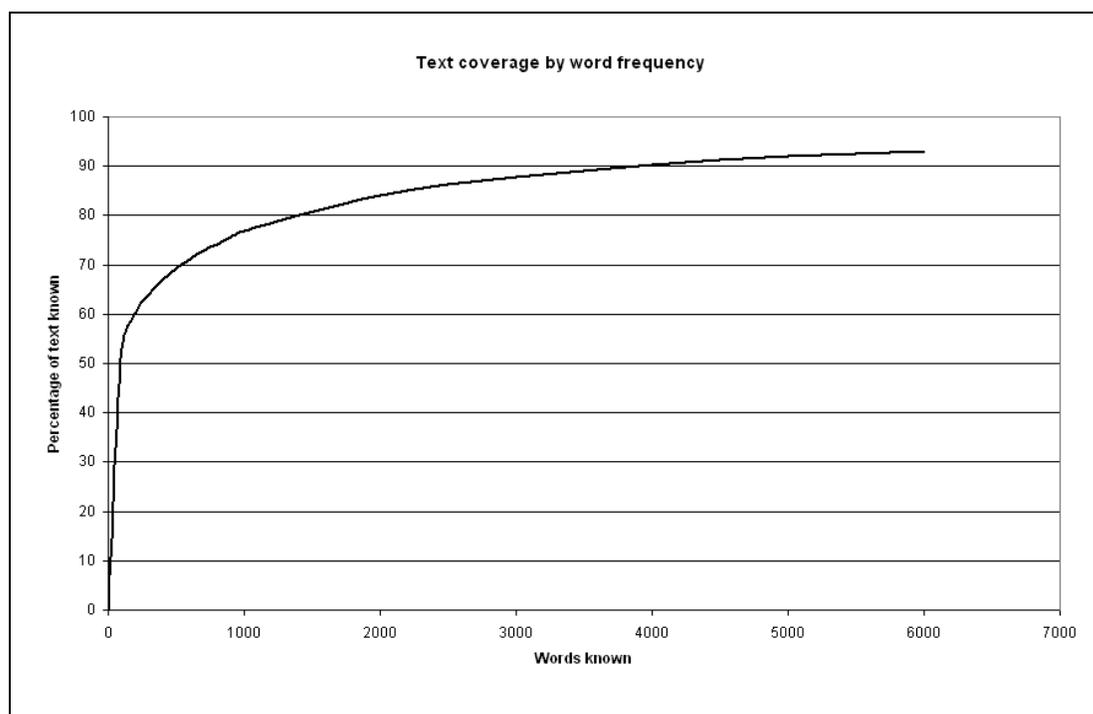
INTRODUCTION

It has become almost commonplace over recent years to emphasize the importance of lexis in language teaching and learning. As McCarthy (1990) points out, communicative competence relies heavily on the depth and breadth of vocabulary knowledge, and without a rich vocabulary, no real meaningful communication can take place. Lewis (1997) remarks, similarly, that whilst an utterance with grammar errors is likely to be understood, errors in lexis can cause complete misunderstandings. Laufer (1997), meanwhile, shows that even for learners with a good grasp of reading comprehension strategies, full comprehension of a text cannot take place without a thorough understanding of its vocabulary. Along with such commentators as Qian (2002) and Tozcu and Coady (2004), Laufer concludes finally that vocabulary knowledge is simply the best predictor of how well a learner will understand a text, not least because the more lexis a learner acquires, the easier it becomes to guess unknown words in context (Chall, 1987).

Along with this renewed enthusiasm for lexis, the development of affordable desktop computer tools has enabled widespread use of corpora and concordances in language teaching. Vocabulary profiling and the derivation and use of statistical information about texts, including the development of word and phrase frequency lists, is now simple, at least compared to West's (1953) painstaking compilation of the General Service List. The concepts of collocation and colligation are in common reference, and the idea that language is acquired in chunks no longer requires explication. In short, a proper balance between the teaching and learning of grammar and skills and the teaching and learning of lexis and lexico-grammar would seem to have been restored. But has it?

THE STRANGE AND WONDERFUL WORLD OF WORDLISTS

Wordlists have a long and distinguished pedigree in ELT and are based on the unremarkable proposition that most text is made up of a relatively limited number of frequently used words, as illustrated from frequency data of the British National Corpus by Chujo and Utiyama (2005).

Figure 1. The Percentage of a Text Coverage According to Words Known

Common sense would thus indicate that a wise strategy would be to acquire the most frequent lexis early in the learning process, although it is also clear that a law of diminishing returns comes into operation very quickly with learners getting progressively less back in return for their effort as they proceed down the lists. How much vocabulary then does a proficient user of English need to know? Commentators such as Nation and Waring (2004) posit a minimum

lexical proficiency level of around 6000 word families. According to some commentators, (Laufer, 1989, 1992; Hirsh & Nation, 1992), efficient reading in a second language requires knowledge of approximately 95% of the tokens in a given text, and critically, it is only when readers have reached this level that they are able to reliably infer meaning, and use reading as a means of extending vocabulary knowledge. Even then, as Cobb (n.d.) notes, acquiring vocabulary through reading has been shown to need around 10 encounters with a particular item. And the problem here is that in a natural extensive reading approach, the further one travels down the lists, the longer it takes for those encounters to occur.

On the other hand, most learners obviously do not acquire vocabulary purely from lists. Research, for example, into students who successfully achieve at least band 5.5 in IELTS shows that they know at least 1,650 out of the 2,000 most commonly used words in English (Neufeld, 2008). At this threshold, a 'fast mapping' principle illustrated mathematically by McMurray (2007) seems to take effect. This is reflected in an extended study of the same students which shows that they actually know over 6,000 out of the 10,000 most common words. If, however, students fall even 100 words short of the 1,650 word threshold, the McMurray model shows that fast mapping is disabled and the chance of significant incidental language development minimal.

Other studies have reached similar conclusions. Cobb (1995) cites a threshold of 1,500 words, below which Arabic students in a university preparatory program failed the PET exit level. This threshold was confirmed for remedial Turkish students in an unpublished study by Billuroğlu (2007), which showed that they knew about 1,300 of the 2,000 most commonly used words and only about 3,500 of the 10,000 most commonly used words. In other words, a deficit in knowledge of 300 of the most commonly used words meant that fast-mapping could not take effect and as a result these students were 2,500 words short of the 6,000 word threshold, and condemned either to repeat foundation courses, or to struggle in academic environments, often falling back on L1.

The implications of such research are profound. For learners with limited time, the suggestion that extensive reading will raise lexical proficiency to acceptable levels may prove to be misplaced. The idea too that learners should grapple with 'authentic' text early in the learning process, and be trained to 'infer' the meaning of unknown vocabulary may also be misguided. For learners to develop their vocabulary at speed, what they would seem to need is an approach that maximizes exposure to the most frequent vocabulary items, and increases the likelihood of incidental learning of vocabulary from a much earlier stage.

Lexis in Commercial ELT Text Books

Cobb (1995) analyzed three major course books and despite purporting to have a 'lexical manifesto'; all fell short of covering 1,500 of the most common 2,000 words. Thirteen years later, little has changed. Table 1 below gives an analysis of the SUCCESS EFL course book series (Longman) according to the Billuroğlu-Neufeld list of the 2709 most frequent words in English. The BNL2709 is compiled from a study of a number of different wordlists, and banded according to actual frequency counts. BNL coverage of text in general tends to be *higher* than the classic General Service List + Academic Word List formula that is often used. The rationale meanwhile for not conducting artificial divisions of lexis into 'general' and 'academic' is given in Hancioğlu et al (2008).

Table 1. Vocabulary Profile of the SUCCESS EFL Course Book Series

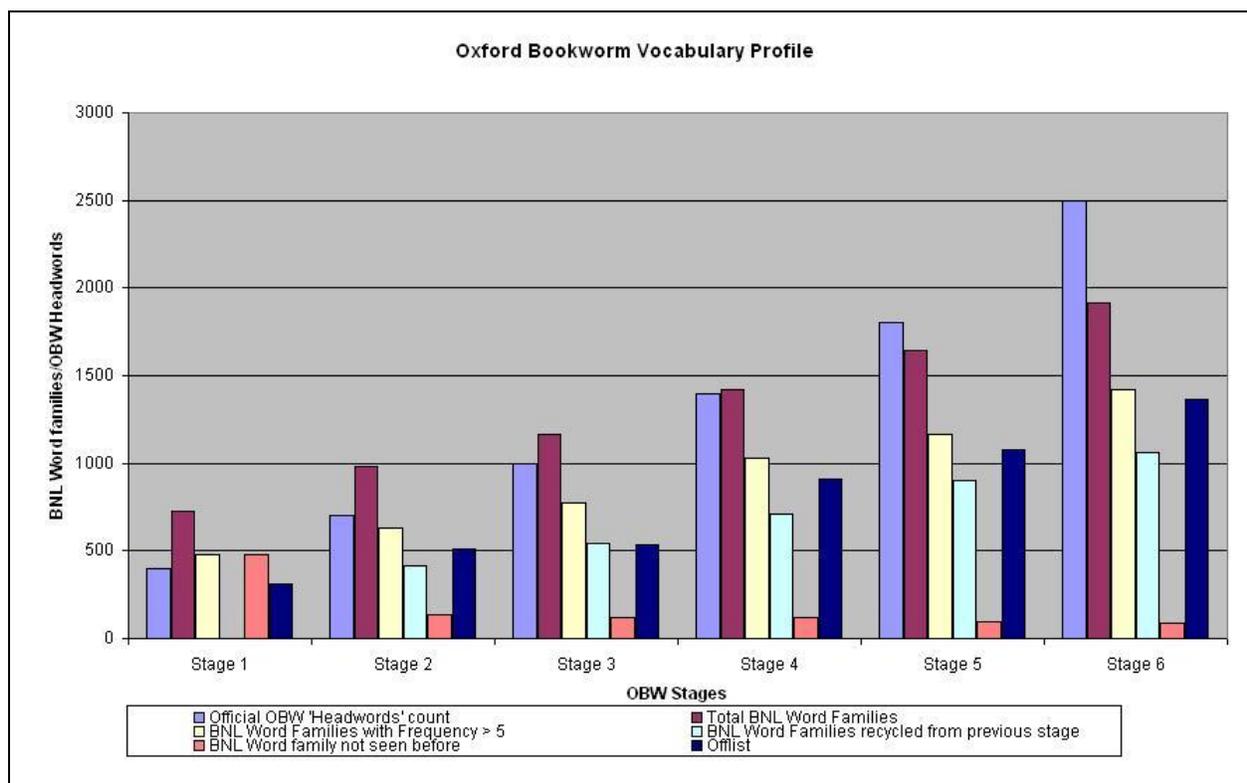|	Beginner	Elementary	Pre-intermediate	Inttermediate	Total common words in the course book word lists	Common words **missing** from course book word lists
BNL0	36	20	5	1	62	**31**
BNL1	194	255	102	36	587	**79**
BNL2	73	149	98	43	363	**141**
BNL3	46	87	66	55	254	**186**
BNL4	26	55	52	65	198	**233**

These statistics indicate that of the 2,000 most commonly used words of English, only 1,400 appear in the word lists in the SUCCESS series. These findings are similar to the unpublished research conducted on lexical coverage in Headway (Oxford University Press) by Arkin (2005), and by Billuroğlu (2007) on the Pathfinder series (Longman). What is confirmed is that lexical deprivation in EFL course books is not limited to one publisher or coursebook, and has not been eliminated in the current era, for all the lip-service paid to the importance of lexis. It is clear that most students will therefore continue to need considerable supplementary vocabulary work, and that the claims of many course books to provide comprehensive lexical coverage must continue to be treated with scepticism.

Graded Readers

One much-discussed method of improving language has been through graded readers (Hill, 2008). The original intent of graded readers (West, 1955) was not to teach unknown vocabulary, but to help practice reading skills, consolidate already learned words and provide language learners with the opportunity to enjoy texts containing vocabulary they were largely familiar with. Therefore, any suggestion that graded readers will plug the gaps left by textbooks needs to be approached with caution. Furthermore, as Nation and Wang (1999) demonstrate, most reader schemes are not well designed in terms of vocabulary size and coverage. As previously discussed, and as Cobb (2008) points out in his discussion of McQuillan and Krashen's (2008) submission that extended reading remains the best method of vocabulary acquisition, standard graded reader schemes simply do not have the coverage to enable this acquisition to take place. Cobb reports that analysis of over 375,000 words of a graded reader series demonstrated that "reading these texts in their entirety cannot provide enough repeated exposures to enough 3,000-level vocabulary to support the acquisition of a minimal functional lexicon" (2008, p. 109), this based on the conservative proposition that acquisition requires only six encounters with a word. Wan-a-rom (2008) further cautions that direct study of common words is necessary for language learners to benefit from readers, as writers use the publishers' word lists as guidelines only, which are naturally modified according to the story. Therefore, the premise that words will be recycled from title to title, and from level to level, can only ever be partially observed.

Our analysis of a 741,504 word corpus of 56 graded readers from stage 1 to 6 of Oxford Bookworms shows that the notion of 'headwords' for a stage does not seem to mesh with the actual number of common word families (Billuroğlu & Neufeld, 2007) present in all of the titles in that stage. And while recycling does take place, it is more by accident than design, as the total number of common word families that appear in one form or another at least 5 times throughout the entire series is less than 1,500. The number of words meanwhile outside the most commonly used frequency bands still makes up less than 5% of the entire corpus, the majority being proper names. Of the actual content words in this category, only 54 are actually used more than 5 times suggesting that the rest are merely incidental to each particular title.

Figure 1. Vocabulary Profile of Stages of the Oxford Bookworm Graded Readers

The very strength of the graded reader approach is also its most significant weakness. In the pursuit of a homogeneous set of texts, the depth and range of meanings of words is diminished. The concordance extracts below illustrate the difference between the nature of exposure to words in a reader corpus to the breadth and depth of meaning in real English, approximated by a corpus of articles from Wikipedia, drawn from a range of topics, of comparable size (608,466 words).

In the graded readers corpus, DRAW is almost exclusively present in the sense of drawing a picture, with single occurrences of "draw a knife," "draw the curtains," "draw a breath," and "draw [lots]."

Figure 2. KWIC Extract for DRAW in the Graded Reader Corpus

```
  Causton's notebook and began to draw pictures to show them. 'Higher up, 03_wyatt_hurricane
  Wyatt said. With a black pen he drew a big circle round St   Pierre. 'T 03_wyatt_hurricane
e narrow stairs to Miss Barker's drawing-room. Kind, gentle Mrs Forrestee 04_cranford
Jamieson's party. Mrs Jamieson's drawing-room was not a comfortable room 04_cranford
ldren, but she could not sing or draw or sew. Perhaps she could teach re 04_cranford
It's used to print drawings. The drawing disappears   under a bright a   04_reflex
it into light. The lines of the  drawing will appear. Not too much lighti 04_reflex
w the answers, so they agreed to draw lots to decide what had happened.   04_silas_marner
 he would never discover why the drawing of the lots had seemed to provet 04_silas_marner
ied them in silence. The largest drawing showed the Wall, with a great so 04_songs_distant_earth
rayle looked more closely at the drawing.  Why have you stopped short oft 04_songs_distant_earth
rs.   Luba Luft was looking at a drawing of a young girl sitting on the   05_android
s were uninteresting, but he had drawn a circle round some of the dates. 05_deadlock
 of 1981 and 1982. Boom Boom had drawn circles round twenty three days i 05_deadlock
y and August which   had circles drawn around them. Thirteen shipments o 05_deadlock
ing for the police,' I gasped. I drew the knife across the table and the 05_deadlock
t. There was always something to draw. If any kind woman had been able t 05_garden_party
he stuck one finger in her ear. 'Draw.' 'What do you draw? Leave your ea 05_garden_party
in her ear. 'Draw.' 'What do you draw? Leave your ear alone!' 'Pictures. 05_garden_party
ws and sheep?' 'Everything. I'll draw you when you're gone, and your hor 05_garden_party
d the whisky bottle. The kid was drawing on a piece of wrapping paper. Tu 05_garden_party
ay long.' 'Ma,' said the kid, 'I drew a picture of them on the hill, and 05_garden_party
 she screamed. 'Now I'm going to draw what you told me I must never draw 05_garden_party
aw what you told me I must never draw - now I'm going to!' The woman rus 05_garden_party
' 'Go to sleep, Miss, or do some drawing,' said Jim. 'Look, here's a penp 05_garden_party
 thing she said I never ought to draw. I drew the one she said she'd sho 05_garden_party
he said I never ought to draw. I drew the one she said she'd shoot me if 05_garden_party
care! I don't care!' The kid had drawn a picture of the woman shooting a 05_garden_party
im and I sat until dawn with the drawing beside us. The rain stopped, anf 05_garden_party
    with his dog beside him. He  drew this map. He always carried a copy 05_ghost
curtains behind the windows were drawn completely so that the house seem 06_American_crime_stories
oor behind me. The curtains were drawn, but the ceiling light showed me  06_American_crime_stories
ther pause. `No good at all.' He drew a long breath, then suddenly shout 06_cold_comfort
children's mouths, and make them draw the shapes they can feel. Have  yo 06_decline_fall
limbed on to the window seat and drew the curtains, so that I was  compl 06_jane_eyre
bad animal she is!' 'How lucky I drew the curtain,' I thought.  He would 06_jane_eyre
cause you aren't good  enough at drawing or painting, but the ideas, whef 06_jane_eyre
ey come from? Who taught you to  draw wind, and space,  and feeling?  Bu 06_jane_eyre
I  decided that next day I would draw an honest sketch of myself, and th 06_jane_eyre
 in on me, as I had forgotten to draw my curtains.  Suddenly, a wild, te 06_jane_eyre
nd I  helped Mary to improve her drawing.  We three shared the same intes 06_jane_eyre
Let's start,' he said. 'We shall draw for it, like this . . . Each of us 06_meteor
your plan is that the person who draws the X dies.'    'Yes,' said the  06_meteor
nately necessary.'     'But if I draw it, two must die. Me and my baby.  06_meteor
 she should not take part in the draw, or should she take her chance wit 06_meteor
```

On the other hand, in the Wikipedia sample, draw only occurs a limited number of times in the sense of drawing a picture, and has a much richer set of **collocations**: draw conclusions|inferences|inspiration|attention|criticism; **senses**: attract (attraction), pull; **phrasal verbs**: "draw upon/on/from", "draw up," and ESP: a draw in a game in sports.

Figure 3. KWIC Extract for DRAW in the Wikipedia Corpus

```
and early 20th  centuries, horse-drawn carriages (motor vehicles are not  ARCH_Istanbul
 bridge  that doesn't need to be drawn, a 2824 m long Big Obukhovsky Bri  ARCH_St_Petersburg
ourists flock to see the bridges drawn and  lowered again at night to al  ARCH_St_Petersburg
 across Neva and main canals are drawn to let ships pass in and out of    ARCH_St_Petersburg
omplex infrastructure. Water was drawn from  the river by a series of pu  ARCH_Taj_Mahal
ghout the city. Major  festivals draw people from all over the city incl  ARCH_Tokyo
al) International Freedom Center Drawing Center Transit Transportation Hh  ARCH_World_Trade_Center
joy some of her childhood. Again drawing  parallels to Anne Frank's lifeT ARTS_Audrey_Hepburn
y Hepburn passed the time was by drawing. Some of her childhood  artworky ARTS_Audrey_Hepburn
egend and humanitarian. It has a drawing of her which is based on  a pub  ARTS_Audrey_Hepburn
ainting  of a dugong, apparently drawn by neolithic peoples, found in Ta  BIO_Dugong
ording to nutritional principles drawn up by Elsie  Widdowson and others  BIO_Nutrition
epictions of tigers in China are drawn with ? on their forehead.  In a p  BIO_tiger
used to propel aircraft. Air is  drawn into the rotating compressor via   ENGINEER_Jet_engine
ich remain stationary. As air is drawn deeper through the  compressor, i  ENGINEER_Jet_engine
 name is spelled Karata on a map drawn before 1708. [citation needed]  P  GEO_Krakatoa
x scares that followed, the film drew widespread  criticism in the press  GEO_Smallpox
 Potter symposiums. These events draw people from around the world to at  LIT_Harry_Potter
f other items when customers are drawn to bookstores. Other small, indep  LIT_Harry_Potter
one-volume UK paperback edition, drawn by Pauline Baynes Cover of the 19  LIT_Lord_of_the_Rings
one-volume UK paperback edition, drawn by Pauline Baynes  The books were  LIT_Lord_of_the_Rings
 'nuclear' weapons are sometimes drawn, Tolkien had  developed the natur  LIT_Lord_of_the_Rings
 elements as a marketing move to draw on  the popularity the work enjoye  LIT_Lord_of_the_Rings
y Northern European) metal bands drew inspiration from  Tolkien, often w  LIT_Lord_of_the_Rings
appears to consist primarily of  drawing inferences based on either strai LIT_Sherlock_Holmes
 hat', although Sidney Paget had drawn Holmes donning it on two occasion  LIT_Sherlock_Holmes
k Holmes. Dr. Joseph Bell could  draw large conclusions (like Holmes) fr  LIT_Sherlock_Holmes
art,[18] although he insisted on drawing the face of every Superman the   LIT_Superman
teel #1 (July 1986), written and drawn by John Byrne. The Man of Steel #  LIT_Superman
teel #1 (July 1986), written and drawn by John Byrne.  In 1945 Superboy   LIT_Superman
lir (Light Rises From the East), drawing both on western classical and  mMUSIC_Aksu&Erener
style,[9] her funeral procession drew tens of thousands[1] of mourners o  MUSIC_Edith_Piaf
N. mission took her to Bosnia to draw attention to the plight of children MUSIC_Nana_Mouskouri
aid "we are like a cotton thread drawn across their  path."[20]  Mustafa  POL_Ataturk
 future, political leaders would draw upon dormant forces of religion in  POL_Ataturk
 his campaign was  successful in drawing attention to the grievances of A POL_Mahatma_Gandhi
 inner peace. This influence was drawn from the Hindu principles of maun  POL_Mahatma_Gandhi
ited States, Martin Luther King, drew from the writings of Gandhi  in th  POL_Mahatma_Gandhi
King wrote and spoke frequently, drawing on his long  experience as a pre POL_Martin_Luther_King
ween both groups, but this would draw more criticism towards him.[3]  Th  POL_Mikhail_Gorbachev
[9]  Gorbachev thus continued to draw up a new treaty of union which wou  POL_Mikhail_Gorbachev
chev's or promoted by him, which drew fresh criticism.[3]    Aftermath o  POL_Mikhail_Gorbachev
 CF, and the game ended in a 3-3 draw, where he scored the second goal    SPORTS_Zidane
 and scored two  goals for a 2-2 draw.   European Footballer of the Yea   SPORTS_Zidane
pion in the Los Angeles area who drew thousands of fans. Often  referred  SPORTS_muhammad_ali
oost in  shareholder returns, it drew widespread criticism from employee  TOURISM_Disneyland
rcades, double-decker bus, horse-drawn streetcar, jitneys and other bits  TOURISM_Disneyland
  other customs. Today, the main draw of the area is Splash Mountain, a   TOURISM_Disneyland
ing a double-decker bus, a horse-drawn streetcar, a fire engine, and an   TOURISM_Disneyland
d on maps in about 1570 in those drawn by Abraham Ortelius and  Mercator  TOURISM_Galápagos
g in the Pacific Ocean. He also  drew the first accurate navigation char  TOURISM_Galápagos
the opposite shore, effectively  drawing an acoustic 'net' across the wigTOURISM_Loch_Ness
es touched on the sonar data and drew to a close the  1968 effort: "      ThTOURISM_Loch_Ness
ndependent republic by  captains drawn from its guilds and elected by th  TOURISM_Saint-Tropez
e bay of Saint-Tropez. This is a draw for a  great many classic yachts,   TOURISM_Saint-Tropez
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In another example, the word VOLUME appears only once in the entire graded reader series, yet it is a high frequency word in general English and in the Wikipedia corpus:

Figure 4. KWIC Extract for VOLUME in the Graded Reader and Wikipedia Corpora

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A single occurrence in the Graded Reader corpus:

he plastic bag would increase in volume, making the bag swell up. As the  06_meteor

But multiple occurrences and meanings in the Wikipedia corpus:

ted at 5.9 million tonnes with a volume (including an  internal hillock) ARCH_Great_Pyramid
er in height, occupies a greater volume.  At completion, the Great Pyram ARCH_Great_Pyramid
 their edges, high daily traffic volumes between the commuter boroughs ae ARCH_St_Petersburg
iscover the secret to their high-volume  burger-and-shake operation. Kro BIO_Fast_food
iscover the secret to their high-volume  burger-and-shake operation. Kro BIO_McDonald's
 the exhaust.  Owing to a larger volume flow (i.e. lower density) at exi ENGINEER_Jet_engine
o accommodate the  extra exhaust volume flow, so that the turbomachinery ENGINEER_Jet_engine
, Poland, 1957 1. power switch / volume 2. brightness 3. pitch 4. vertic ENGINEER_Television
 and tsunami. Inside, the 70 000-volume royal library as well as hundred GEO_Great_Lisbon_Earthquake
 sea, displacing an equally huge volume of seawater. Some of the pyrocla GEO_Krakatoa
he earthquake displaced massive  volumes of water, resulting in a tsunam GEO_Sumatra-Andaman_earthquake
 Welsh and Vietnamese. The first volume has been  translated into Latin  LIT_Harry_Potter
 Upon its publication, the first volume, Harry Potter and  the Philosoph LIT_Harry_Potter
time of the release of the fifth volume, Harry Potter and the Order of t LIT_Harry_Potter
 Tower and Harry Potter. In this volume, Amanda Cockrell  concludes, "Ha LIT_Harry_Potter
1] Although intended as a single-volume  work, it was originally publish LIT_Lord_of_the_Rings
as originally published in three volumes in 1954 and 1955, and it is in e LIT_Lord_of_the_Rings
d 1955, and it is in this three- volume form that it is popularly known.  LIT_Lord_of_the_Rings
ngs was first published in three volumes - The Fellowship of the Ring, Td LIT_Lord_of_the_Rings
obbits had the Ring.  The second volume, The Two Towers, deals with two   LIT_Lord_of_the_Rings
 Minas Morgul. At the end of the volume, Gollum  betrayed Frodo to the g LIT_Lord_of_the_Rings
ir most trivial actions may mean volumes... their  most extraordinary cou LIT_Sherlock_Holmes
Adventures of Superman. A second volume of Superman was launched in 1987 LIT_Superman
(as a President) under  multiple volumes, titled Atatürk'ün Bütün EserleA POL_Ataturk
ges published in about a hundred volumes. In 2000, a revised edition of k POL_Mahatma_Gandhi
Mohandas Karamchand Gandhi  in 8 volumes, and Pyarelal and Sushila Nayarm POL_Mahatma_Gandhi
 with their Mahatma Gandhi in 10 volumes.   Followers and influence Gando POL_Mahatma_Gandhi
ts great depth is the largest by volume. It contains more fresh water th TOURISM_Loch_Ness
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This does not mean that the general approach of graded readers is unhelpful. Indeed, wide reading in a second language and the cultivation of a reading culture has much to offer. Most reading series however have not been designed to maximise coverage of lexis to the levels required, and nor have they ensured sufficient exposure to selected lexis to provide the foundation for its long-term acquisition. We should note here that this is an issue of application, not of potential, and we hope to show that readers in fact offer an ideal basis for vocabulary acquisition.

Summary of Discussion

An interesting point of departure has been reached in terms of vocabulary pedagogy. On the positive side, the importance of building an in-depth vocabulary as a prerequisite for communicative competence and second language comprehension is not disputed. Ongoing research clearly challenges previously held views that suggested that what students mostly required in terms of reading were certain defined skills and strategies, and that these were best acquired by immersing students into the world of 'authentic' text as early as possible.

The over-reliance on skills training, and the somewhat inconclusive debates that emerged concerning the nature of textual authenticity may perhaps now be taken as given. What is of more concern is the need for practitioners to apply the research findings and produce materials that are fundamentally designed on a lexically orientated approach to language acquisition.

Summary of Project Aims

In the ongoing project reported here, the authors have set out to address what have been identified as both the shortcomings and the potential of the reader as a vehicle for vocabulary acquisition. In particular, the project systematically aims to provide users with:

1. Repeated (10-12 encounters) with all of the 2709 most common word families in English as identified in the BNL2709 list.

2. Opportunities and encouragement to explore word families in depth, along with controlled and freer practice activities to encourage productive use.

3. Use of data-driven techniques to expose students to common collocations and more idiomatic uses.

4. The use of a Web 2.0 platform (MOODLE) and a social constructivist methodology to encourage peer learning and sharing of lexical product in order to generate further encounters with target lexis.

The project thus aims to take learners past the boundary identified in which fast-mapping will occur by evolving the graded reader concept into a new form of vocabulary development programme known as the *eReader Series.*

WHAT THE eReader SERIES COMPRISES

Sixteen 'eReaders' have been compiled, each containing five different texts of around 1000 words each in a defined topic area of general interest, such as sports, music, famous scientists, etc. The series thus comprises some 80,000 words of text. The original texts were taken from Wikipedia, and then edited to the 1000 word target length, whilst continually frequency profiling the texts to ensure not only complete coverage of the BNL2709 but sufficient number of repetitions of each item. The rule of thumb adopted was that students should meet each word at least twelve times in receptive mode. The words were distributed more or less equally between the 16 eReaders meaning that each reader would focus on around 170 BNL words, and each of the five texts in each reader would introduce around 30-35 BNL words.

In a departure from the graded reader tradition, the eReaders assume a certain level of English at the outset, the aim being not only to introduce new words, but enrich knowledge of words already known. The series thus commences at a post-elementary level. Whilst editing the texts, attention was paid not only to ensuring lexical coverage, but also to reducing sentence length, and simplifying clause structure. On completion of the series the eReaders were profiled according to the Flesch-Kincaid Reading Ease scale, and checked for average sentence length, and passive usage, and ranked from 'easiest' to 'most difficult.' It should be noted however that the ordering is one of convenience in many respects, and there is no real reason why a user should not jump between the readers as interest takes them. The original Wikipedia texts, along with the simplified readers were then used to create a corpus of 608,466 words which would be used as a foundation for data-driven learning activities.

MOODLE

The texts and activities were mounted on a custom-designed eReader Moodle. Based on an explicit social constructivist methodology, Moodle is a virtual learning environment that offers a powerful solution to issues of systematic and multiple exposure to particular lexis. Of particular significance in this regard are:

The MOODLE Glossary Feature

The Moodle Glossary feature enables the automatic linking of selected lexis into an interface that can provide further resources and activities concerning the given item. Thus, as users read a text, the key BNL items are highlighted and hyperlinked into the glossary feature.

Figure 5. Excerpt from E-Reader Text About 'The Cheetah'

The cheetah is a member of the cat family. It is a poor climber that hunts by speed. It is the fastest of all land animals and can reach speeds of up to 105 kilometres per hour.

Figure 6. Moodle Glossary Entry for 'climb'

CLIMB
FAMILY WORDS: climbed, climber, climbers, climbing, climbs, unclimbed
Learning the Word

1. First, read the entry for **CLIMB** in the Longman Dictionary of Contemporary English. Do this very carefully, and try and understand as much as you can from the entry.
2. Look at the way **CLIMB** is used in sentences by clicking CLIMB, climbed, climber, climbers, climbing, climbs, unclimbed,
3. (**Advanced**) Find words with similar meanings to **CLIMB** by using the thesaurus.

Reviewing the Word

Now complete the following cloze activity related to CLIMB.

Practising the Word

- Watch this video about Rex Pemberton, the youngest Australian to climb Mount Everest
- In your BLOG write about either another remarkable achievement of this kind, or describe a special ambition of your own.
- For more practice with *CLIMB*, don't forget to visit the Great Animals Vocabulary WIKI.

As can be seen, the glossary provides a portal for further in-depth study, including an introduction to different word forms, a controlled gap-filled activity designed using the popular *Hot Potatoes* software, and an invitation not only to use the language but share it with peers. In this way the multiple, repeated exposures to lexis that extant research suggests are required are provided within the social-constructivist medium.

MOODLE BLOG feature

As already mentioned, it was fundamental that learners would not only improve their receptive knowledge but also their productive knowledge. Individual items therefore became the basis of short 'BLOG' activities that students could publish on the MOODLE and share with their peers.

Figure 7. *Example of a student BLOG entry for the word family 'tradition'.*

PROMPT: In your BLOG,share with us a recipe for a traditional meal from your country.

STUDENT BLOG ENTRY: Iam going to give you a recipe of a <u>traditional</u> meal for Adana.As it is know n from its name .I am going to recipe you Adana Kebap.I think, it is the most popular and well-known meal both in Turkey and in most Euorupe so we can say for Adana Kebap that it is both <u>traditional</u> and ınternational <u>because</u> of that reason preperation is the <u>important</u>   process of it.not everybody can gril it as it needs to be mastered.what I mean is to be experienced.It includes onion,pepper ,greens and kinds of specions and corbined them together .than it is voited a day.ofter one day İt is grilled on the barbecue and served with soled,grilled ,pepper and tomato.It has also some kind of bread and it is <u>usually</u> <u>eaten</u> with <u>a</u> buttermilk that is mix of yogurt and <u>water</u>.It is very delicious that once you <u>eat</u> it. I am sure that you want to <u>eat</u> it one more time

As can be seen, the words students use from the target BNL lexis for the particular eReader automatically hyperlink back to the glossary. Thus, the students themselves provide reading material for their peers, as well as actively experimenting with the target lexis.

WIKI feature

The WIKI—which is a collaborative editing tool—was used to set up some more short but personalised response type activities to give users the opportunity to manipulate not only some of the forms of the target lexis, but to start exploring alternative meanings and uses of specified items—again within a collaborative and public space.

Figure 8. Examples of WIKI Questions and Student Response

PROMPT:
- When was the last time you felt really <u>run</u> down (i.e. very tired)?
- When was the last time you <u>ran</u> into someone you weren't really expecting to see (i.e. met by chance)?
- When was the last time you had to <u>run</u> fast for some reason?
- When was the last time you <u>ran</u> into <u>a</u> problem of some kind? What was it, and what did you do <u>about</u> it?

> STUDENT WIKI ENTRY:
> - When i have returned to Cyprus after Bayram i felt run down
> - I ran into my old teacher when i went to Istanbul for christmas last week.
> - On monday,i was late for my first class and so i had to run fast.
> - 2 weeks ago,i did not make a draft so i borrowed some money to my friend.

Again, attention should be drawn not only to the repetition of lexical items, but to the awareness-raising nature of such activity, particularly for learners from more traditional backgrounds who have been raised on rote memorisation from lists of first language equivalencies, and often restricted to one meaning in the process. The eReader approach encouraged learners to explore multiple meanings and nuances and add depth to breadth.

Discussion Forums

Discussions are another MOODLE feature that fall into the social constructivist bracket and encourage learners to respond to the texts, and hence further rehearse vocabulary whether target or incidental.

Figure 9. Example of a Moodle Discussion Forum

> Saving our Wildlife Discussion
>
> **Serap SARAC**
> If I had 10 million dollars to spend on protection of animals I wouldn't spend it all for the animals in my country. I would build animal protection centers all around the world and support some funds.
>
> **Yigit GEDIKOGLU**
> I would definitely support a national park or some kind of wild-life-environment area. Here is what I think if you set animals free the nature itself can protect them. We can't protect their species by keeping them "safe" in cages.
>
> **Basak CIK**
> If someone gave me ten million dollars, i would grant all of my money to THKD which is an association in Turkey for protecting animals.
>
> **Salih ÜZEN**
> Hi! My name is salih and If ı have got a lot of money, ı can protect animals because they are one of the part of our life. There are many animals in my country which must be protected. Many kind of animals are decreasing because of global warming and nobody doesn't protect animals. If ı have got an oppurtinity, ı can protect them and open shelter for them.
> If I have ten million dollars, I could do natural wildlife area for animals in my country. I could organize Safari Tours. I could prove reproduction areas for endangered animals.

A further point of such meaning focused activity is to motivate students to search for lexis that they require for a specific communicative purpose. What the eReaders thus attempt to promote is incidental as well as targeted vocabulary learning, exploratory as well as directed learning.

Data Driven Learning Activities

The compilation of all the texts in the series into a corpus also enabled the use of automated concordance and gap-fill activities to provide further practice and exposure. These features and others can be viewed in the pilot eReader at: http://gemoodle.emu.edu.tr/course/view.php?id=261. The development of the prototype reader and activities has been a carefully constructed response to the deficiencies identified in many textbooks and graded reader series, and to ongoing research that identifies a threshold of 6000 vocabulary items as critical to language proficiency, and multiple exposures (10-12) to lexical items as critical to acquisition. The great advantage of Web 2.0 applications is that this exposure can be provided with a strong interactive element on a scale hard to replicate through traditional paper-based media.

SETTING UP THE PILOT PROJECT

In order to test the approach, the first eReader was used with a small group of some thirty freshman students at the Eastern Mediterranean University, an English medium university located in Famagusta, Cyprus. Although all the students had passed a domestic language proficiency test, pre-testing revealed that many had serious vocabulary problems. The students were put through three vocabulary tests assessing knowledge of the first two thousand, five thousand, and ten thousand most common words in English. Although these tests again confirmed the operativeness of the fast-mapping principle, they also corroborated previous research by Cobb (1995) and others that showed that students supposedly studying English for academic purposes had not gained enough lexis from an intensive year studying conventional course books to enable them to approach the critical level of 1650 words. In terms of their ability to produce coherent English, at the lower end of the scale, even short writing samples revealed that they seemed to lack any kind of post-elementary vocabulary that would enable them to avoid the type of output illustrated below:

Figure 10. Sample of Student Work Before Vocabulary Project

EMU is beatuful and premir university in Cyprus. but All lesson don't prefer English. Because Some lesson don't understand for ex History of Turkish. I thik Emu prep school not yet. Emu is advantages of English lesson. okey. English lesson good because English is today the day, very necessary good. For example Busines life use to English All time because I believe that people use English everywhere and country.
Today, English is nesecary I prefer, Everywhere we speak English in university greenpine. Emu teacher don't speak Englis some lesson and I don't prefer this Conclusion. Emu is beatiful university in island. but The lesson used English very important, I used to work English everywhere.

Of course, there was work better than this, but nonetheless the sample is indicative of the insecurity many learners had with their vocabulary, and exemplifies how their limited repertoire led to often banal repetition. For the project itself, the students were asked to visit the site regularly and complete a limited number (usually 10-15) of entries into the BLOG, discussion and WIKI sections, as well as reading the texts, and using the vocabulary glossary as their basic reference point. Whilst the project was in progress issues arising were discussed in class, and

various awareness raising activities conducted in terms of understanding the technology and terminology of the MOODLE itself. The project ran for around six weeks, and concluded with a questionnaire and discussion to derive some qualitative data to inform task design principles and approaches to the other readers. The students could of course have been post-tested using the same vocabulary tests used at the beginning of the project, but given that this was an initial pilot based on one reader only, it was felt that the qualitative data would be of more value.
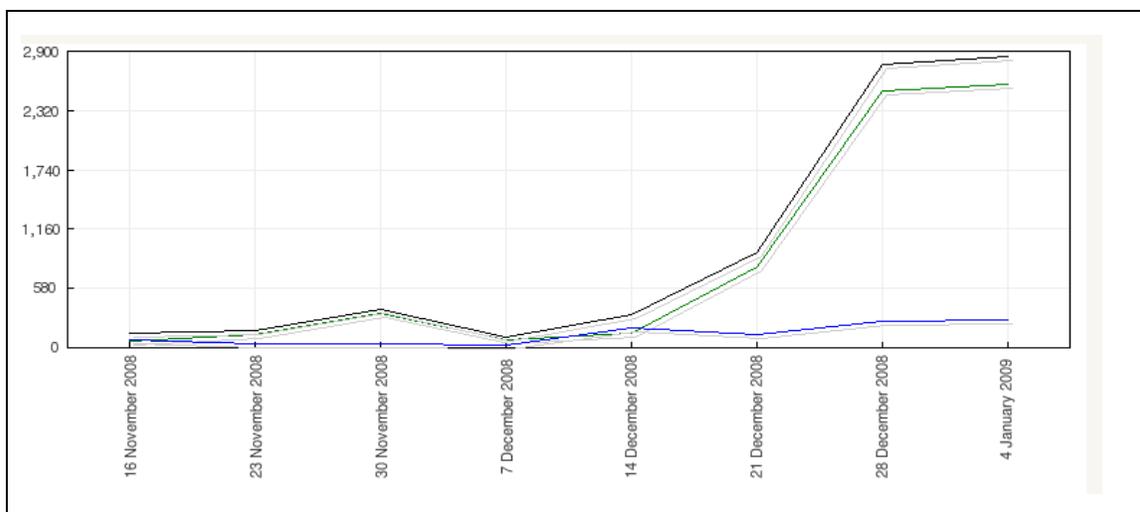
Evaluating the Cycle

In the questionnaire, the users were asked which features of the eReader they enjoyed most, how well they felt they had learned the vocabulary in the eReader, and how far they felt their English had improved in general terms during the project. The accompanying discussion asked the users to state what advice they would now give to other learners about vocabulary learning; to compare previous methods through which they had learned vocabulary with the project method; to list some examples of vocabulary items they had learned for the first time through the project; to list some examples of vocabulary items that they learned more about through the project; and to state what they now felt to be the best way of learning vocabulary. Further data about students' vocabulary use was provided by their actual output in the MOODLE, whilst their participation was tracked by the course management system. For a limited first cycle evaluation of the first reader in what is intended to be a major series, this provided ample data from which to consider aspects of the project further, as well as raising some other fascinating research questions.

Approaches to Vocabulary Learning

The materials for the project were made available well in advance of the official starting date, and on numerous occasions the importance of regular reading and vocabulary learning mentioned. The users did not dispute such received wisdom, but took a more orthodox approach to the project, deferring serious work to the last possible moment. Having noted this, one virtue of course management systems is that such strategies can be laid bare to them, not only on the collective basis illustrated below, but on an individual basis.

Figure 11. Student Work Patterns During the Course of the eReader Pilot (green line in centre)

Never have practitioners, researchers, and users alike been blessed with such rich opportunities to uncover, unfold and reflect upon learning strategies. It would be interesting to examine also how powerfully the rote-memorising techniques of learners in certain cultures work in their favour in terms of vocabulary acquisition, and intriguing to speculate upon the relatively unexamined question of what the duration between encounters of items needs to be limited to for repetition of encounter to be effective in learning terms.

Vocabulary and Assessment

This report certainly does not wish to entangle itself too greatly with assessment related issues, but it was unsurprising that the pilot group's focus was very much directed towards those elements of the project that were part of the assessment system, as the hits in the centre column of Figure 13 below indicate.

Figure 12. Sample of Student Activity (by hit) in eReader Great Animals Moodle

Remarkable Animals Discussion	695	Tuesday, 6 January 2009, 11:42 PM (4 days 16 hours)
Animals in our countries Discussion	335	Monday, 5 January 2009, 09:20 AM (6 days 7 hours)
Saving our Wildlife Discussion	227	Sunday, 11 January 2009, 02:30 PM (1 hour 49 mins)
What can we do to protect our animals Discussion	216	Tuesday, 6 January 2009, 11:41 PM (4 days 16 hours)
Key BNL2709 words	1887	Saturday, 10 January 2009, 07:24 PM (20 hours 56 mins)
Great Animals Vocabulary Wiki	1212	Sunday, 11 January 2009, 02:12 PM (2 hours 8 mins)

Topic 1

Watch a video about the cheetah	24	Sunday, 4 January 2009, 08:24 PM (6 days 19 hours)
Pre-Reading Activities	36	Monday, 5 January 2009, 06:39 PM (5 days 21 hours)
Read with glossary	303	Thursday, 8 January 2009, 10:05 PM (2 days 18 hours)
Read with concordance and WordNet	17	Sunday, 4 January 2009, 02:10 PM (7 days 2 hours)
Find the pieces to the puzzle	25	Friday, 2 January 2009, 06:38 PM (8 days 21 hours)
Fill in the gaps of this C-test	26	Monday, 5 January 2009, 10:14 PM (5 days 18 hours)
Fill in the gaps	36	Sunday, 4 January 2009, 09:33 PM (6 days 18 hours)

The experience gained in the use of BNL2709 in both Abu Dhabi and Mexico has also indicated that assessment of lexis may be of fundamental importance in some systems and cultures, and that lexis has to be continually recycled *throughout and across* levels (Villaneuva, 2008, personal correspondence) with opportunities to revise basic meanings as well as further examine meanings, collocations and lexical frames in order to provide more depth of knowledge. In this respect, having seen the limited extent to which many commercial products have adopted the insights provided by research into lexis, we merely raise the related question as to how far these insights have trickled down into testing and assessment policies. Having noted this, it is encouraging to note that use of the reading with glossary approach that was fundamental to the project strategy, but unassessed as such, seems to have taken some root in the students' approach to the material.

Words that Were Learned

One of the questions asked users to provide examples of words that they had learned, or learned more about, from participating in the eReader. It would be pertinent to remind the reader at this point that all the target lexis derived from the most frequent words, as identified in the BNL 2709 list, and that all the students had passed a proficiency test in English that supposedly categorized them as able to cope with academic study in an English medium environment. Examples of words that students say they learned, or extended their learning of during the course of the pilot scheme are given in Figure 14 below. What was revealed were numerous high frequency words that users had apparently never been exposed to, or at least not in sufficient quantity to enable meaningful acquisition to occur.

Figure 13. Examples of Words Learned or Extended

I recognize new words such as ,majority ,approximately ,species, extremely, independent, recently, haste, delightful,which very helpful in the lesson and I know how I will learn other languages in the features.
I learnt words like access and it family words, accelerate, endanger…..
Before to do project, I didn't know to meaning of the word Depend. Also I was amazing because one word has a lot of different meaning ,DEPEND, dependable, dependably, depend ant, dependents, depended, dependence, dependence, dependencies, dependency, dependent, dependents, depending, depends, independence, independent, independently, independents, interdependence, interdependence, undependable. Nowadays i know a lot of words which join with word Depend. Also i become using those.

Learner Views on Vocabulary Learning Strategies

It is certainly interesting in the light of such a project to investigate which kinds of vocabulary learning strategies learners deemed to be most appropriate subsequent to its completion, and how their awareness and consequently their views changed from the beginning of the project. Surveyed at this point, 54% of those asked stated that they felt they had 'a good vocabulary which needed some improving,' and 46% reported that they knew 'most of the words in English that they need, and could use some of them.' Admittedly, the sample who responded to this initial questionnaire was small (13) but, nonetheless, it echoed back the perception that much as the stock of lexis may have risen in research, there is still some way to go before many learners also take on board its significance. Having completed the project though, it was interesting to note that the outlook of some students had shifted considerably (Figure 15).

Most of the students surveyed had, by the end of the project, shifted to the viewpoint that lexis was the most vital component of their learning, and, further, to the view that their own vocabulary needed considerable attention. There was less agreement about what to do about the problem, some referring to the project itself as an exemplar of a productive approach, whilst others raised various traditional strategies, such as reading newspapers and watching films. Such strategies should perhaps interest us more than they have done previously, since for all their putative benefits, their impact on vocabulary may not be nearly as great as many teachers, and judging by our research, students, seem to think. Nonetheless, what the project seemed to reveal

most markedly was the development not so much of the learners' lexis—which could hardly have been expected, given the scope of the project—but their lexical awareness, and in particular a shift towards the position that lexis is something to be used just as much as viewed. Indeed in terms of what they enjoyed most, respondents exclusively singled out the productive elements (Figure 16).

Figure 14. Student Comments on Vocabulary Learning

- I have started learnin English nine years ago. I learned vocabulary writing them which i learned at school. I think it is <u>a</u> very <u>bad</u> way to learn vocabulary. I think this 'read and write' method of learnin vocabulary is better than another method which i used to learn vocabulary in the past. I think i <u>will</u> remember <u>all</u> of the i have learned <u>because</u> it was <u>a</u> useful assignment and it wasn't boring. Of course, my ideas <u>about</u> what it means to know <u>a</u> word changed in any way during this project. I learned during this project that i don't know the real means of <u>a</u> lot of words and i have used them wrongly and i learned that my vocabulary capacity is very limitted. Now, i can use most of words correctly in <u>a</u> good sencentes.
- I believe that "read and write" method of learning vocabulary is more effective than I learned vocabulary in the past, <u>because</u> I <u>find</u> lots of similar word and lots of examples.
- I start to use these words which I have learned and I believe that I <u>will</u> always use them in my daily life.
- I learned lots of words such as <u>bad</u>. The word of "<u>bad</u>" has <u>a</u> lots of similar words. Firslt, <u>badly</u>, malignant. It is very useful project for me to learn different words.
- I would advice to give <u>a</u> student starting to learn English, she/he should should study very hard in vocabulary <u>because</u> it is the main part of the English. If she/he does not know any thing <u>about</u> it, he/she <u>will</u> be have got problems with English. If you do not know the vocabulary, you do not understand and form sentences and do not speak.

Figure 15. What the Students Enjoyed Most in the eReader

What Language the Students Learned in the Course of the Project

The students were asked at the end of the project which words they learned during the course of the project, and which words they learned more about (Figure 17). The words listed by the students as new came mostly from the lower ranking bands of the BNL2709. In some cases the words were derived forms such as 'endanger,' and in other cases such as 'rate,' it was other

meanings and uses of the item in question that were uncovered, again suggesting that very little attention had been paid in these students' prior education to promoting lexical awareness.

Finally, how far did the students feel they benefitted from the eReader in language terms? Mostly very positively, which is particularly encouraging given that this was merely the first reader in an intended series of sixteen (Figure 18).

Figure 16. Examples of Words Learned During the Course of the Project

- when I was reading information with glossary I understand that is very useful for students so I learned many new word this some of them protect**,** majority, chases , stripes, fences, throat, pinch .you by reading reading part you getting many experience how to use English learning new words
- 'Rate' is the best example for me to be given. Because i knew that rate's mean that percentage and ratio only. But there is a form such as firs-rate,second-rate and third rate. For example; first rate means that someone is the best about the action which he does. For example; when i said that i am a first-rate voleyball player, it's mean that i am very good at playing volleyball. On the other hand, third-rate is the opposite of first-rate. Third rate's mean that someone is the worst about the action which he does. When i learned it, i was very amazed.

Figure 17. Students' Learning Progress from the eReader

5. How well do you think you have learned the vocabulary in this e-reader?

Response	Average	Total
Extremely well	28%	5
Quite well	22%	4
Reasonably	50%	9
Not very well	6%	1
Hardly at all	6%	1

6. How much do you think your English has improved whilst studying this e-reader?

Response	Average	Total
A lot	44%	8
Quite a lot	17%	3
A reasonable amount	22%	4
Not much	17%	3

IMPLICATIONS OF STUDY AND CONCLUSIONS

This small case-study has explored how one particular Web 2.0 application–MOODLE– could be used to address lexical deficit. Research would seem to suggest that the problem is a common one, although variations in context and culture mean that the solutions offered here would not necessarily be appropriate in all cases. However, having established this cautionary note, and again drawn attention to the relatively small sample size, we would suggest the following as the major points deriving from our study:

1. The interactive nature of the Web 2.0 environment is an ideal forum for students to become not only readers of text, but creators, and co-creators of text. This enables a far more productive and dynamic use of wordlists than has been common in the past.

2. The recursive nature of web-based reading enables exposure to target lexis to be multiplied with ease, in ways in which textbooks cannot compete. When student input is added, users can be taken well past the critical boundaries that have been identified for vocabulary learning to take place in terms of numbers of encounters with words.

3. The depth in which lexis can be explored is effectively infinite. The use of eTexts and eReaders as corpora with which to generate data-driven exemplifications of real language use as well as activities enables exploration of lexis and awareness of lexical sophistication of a level rarely encountered in the superficial space and time-constrained worlds of the textbook and graded reader.

4. The capacity of the technology to provide a variety of activity provides an added advantage over traditional modes of delivery in that learners can work in their own time and space on activities they feel will benefit them most, whether it be a gap-fill activity, a short WIKI response, or a full-scale BLOG entry.

5. As with other Web 2.0 applications, the learning material is dynamic, unlike graded readers and textbooks which have historically tended to be static. Moodle-based eReaders can be added to, subtracted from, and changed on an ongoing basis.

6. Furthermore, the contributions of students facilitate not only the development of learner corpora as a whole, but paves the way for I-corpora in which learners develop a bank of their own language, and profile their own vocabulary development as they proceed through a course of study. This though would be a subject for another study.

Suffice it to say in concluding this brief case study that as far as lexical deprivation presents a very serious problem for many language learners, the systematic use of vocabulary-based eReaders in a Web 2.0 environment seems to offer a genuine and far-reaching alternative solution.

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