

Resources for Second Language Learners

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ABSTRACT

Here we describe a fifteen-year, ongoing research and development programme at the HKUST Language Center that has resulted in a suite of software tools, resources, online tutorials and materials that assist speakers of Chinese to speak and write fluent and accurate English. We also demonstrate how this principled, resource-rich approach helps teachers monitor and guide their students' language acquisition and proficiency so as to encourage them to become independent learners. We discuss the relative success in integrating these materials and resources into the English language curriculum.

Keywords

Education, eLearning, CALL, ICT, discovery-based learning, language learning

INTRODUCTION

At the HKUST Language Center, we have developed a suite of software tools and resources to assist speakers of Chinese write and speak fluent and accurate English. These cover a variety of skills: vocabulary acquisition, listening and pronunciation, as well as proofreading written documents for grammatical accuracy, fluency, logic and organization, proper citation, and other important academic skills. We have also developed tools that help teachers give effective feedback on spoken and written English, and an assignment management system that facilitates the handling of written assignments and automatically checks for plagiarism. The incorporation of these resources into an academic curriculum has encouraged students to take an autonomous, discovery-based approach to their learning and to adopt lifelong learning habits.

This development, partly funded through CLI grants, consists of an integrated suite of tools:

- 'My Words' (an online vocabulary profiling program),
- 'Speak My Words' (a text-to-speech engine for generating natural sounding human speech in real time),
- 'Check My Words' (a Microsoft Word add-on toolbar that provides resources for proofreading),
- 'Mark My Words' (commenting software that enables teachers to give resource-rich feedback to their students),
- 'Word Neighbors' (a pattern matching website that allows students to check the accuracy of their English phrases),

- an ‘English Grammar Guide’ (a 2000-word interactive grammar guide), and
- an ‘Assignment Management System’ that enables seamless exchange of written assignments between students and teachers, and which automatically detects plagiarism

RESOURCES FOR VOCABULARY ACQUISITION

The main portal for this suite is the ‘My Words’ site, through which students can create and maintain individual vocabulary portfolios by constructing personalized glossaries and assessing their learning progress. Our database automatically supplies full lexical information (e.g. definitions, synonyms and antonyms, spoken pronunciation, frequency, common collocational patterns, sample sentences, usage tips, etc.). Games and the comprehensive resources on this site encourage students to maintain and enhance their glossaries, which they can access anytime and from anywhere. Users can identify their vocabulary level through a number of assessment methods; for example, via an ‘Academic Word List’¹ test (illustrated in Figure 1). Students can practice their vocabulary through a variety of entertaining, competitive games.

Teachers can use the ‘My Words’ site to monitor, comment on and grade their students’ vocabulary acquisition. They can also create and assign vocabulary lists suitable for the curriculum and assign ‘formal’ tests to assess students’ learning progress.

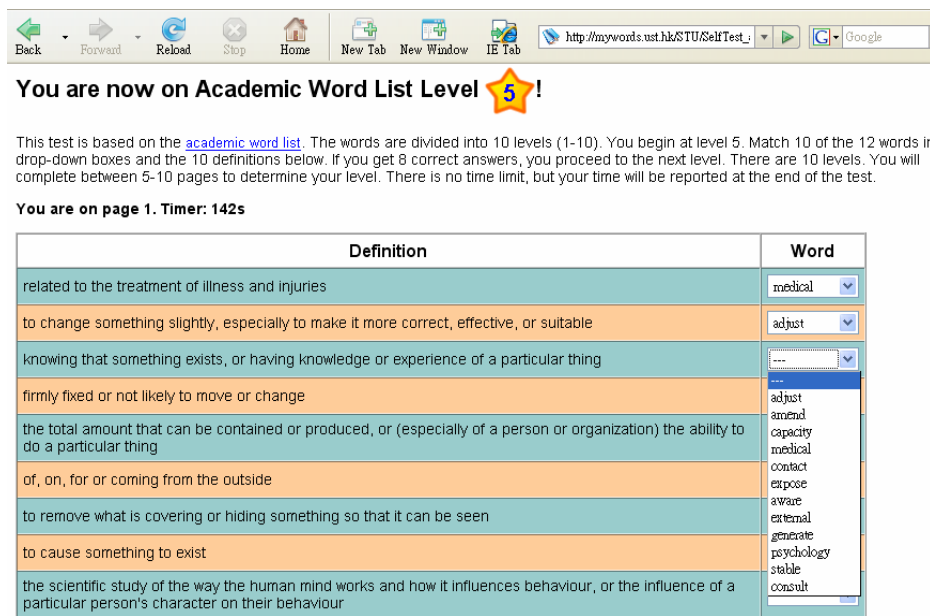


Figure 1. The Academic Word List test in ‘My Words’

We have also developed a browser toolbar (Figure 2) that enables users to save words and phrases from any web site they visit and to see the words they have stored (and that their teachers have identified) highlighted on any web page. They can also test their vocabulary knowledge by gapping words from their personal word lists profile on any web page.

¹ The Academic Word List (AWL) is a list of words which appear with high frequency in English-language academic texts, not including words that are among the most frequent 2000 words of English. It contains 570 word families divided into 10 levels (starting from the most frequent word families in level 1).

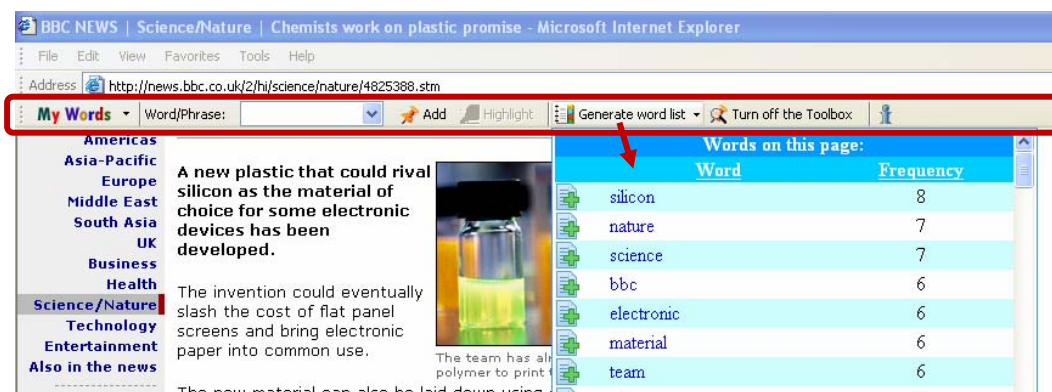


Figure 2 The My Words tool bar

RESOURCES FOR LISTENING & PRONUNCIATION

Several resources have been integrated into the 'My Words' site to enable students to practice listening and pronunciation. For example, we have just developed 'Speak My Words', a program which uses state-of-the-art text-to-speech (TTS) technology to convert English text into human sounding speech. Students can use this to slow down (or speed up) the spoken text, and can see a real-time display of the corresponding mouth movements for all sounds and words (see Figure 3).



Figure 3 Speak My Words Viseme

Another program, 'Gong' (developed in collaboration with colleagues from the HKUST Department of Computer Science and Engineering), enables students and teachers to post spoken discussions online and communicate with each other in real time. Many other features of this program assist language learners to improve their speaking and listening skills.²

RESOURCES FOR WRITING

We developed 'Check My Words', an add-on toolbar for Microsoft Word, to assist users to

² For more details on Gong, please refer to the paper 'Gong - A Voice for the Web World' (Rossiter & Lam) in these proceedings.

proofread their writing for accuracy, fluency and style. This program provides interactive access to resources that display the contexts of any word or phrase in authentic English texts. It does this by generating appropriate search syntax for popular sites, such as Google (web search, news and scholar), as well as our own lookup engine, ‘Word Neighbors’, which enables users to look up the way in which words and phrases occur in professionally written documents. ‘Check My Words’ also provides guided access to other useful language reference sites (dictionaries, thesauruses, encyclopedias, etc.). It also directs the user (via an AI algorithm that automatically parses written text) to an ‘English Grammar Guide’ (the ‘EGG’), where the user receives interactive explanations of common errors made by Chinese speakers in written and spoken English.

‘Check My Words’ encourages the active use of vocabulary by enabling the retrieval of personalized glossaries and other key word lists and phrases from the ‘My Words’ site. For more details on how ‘Check My Words’ enables non-native speakers to attain fluency and to proofread for accuracy, and how it enables teachers to give effective feedback, see Milton, 2006.

RESOURCES FOR ASSIGNMENT MANAGEMENT

We have recently released an ‘Assignment Management System’ (AMS) that enables seamless exchange of assignments between students and teachers. This program further encourages students to use the resources described here by assisting teachers to hold students accountable for making significant progress in their written accuracy and fluency, as well as in their academic integrity (i.e. the care they take to cite properly).

When students have completed an assignment, they submit it directly through the ‘Check My Words’ toolbar (in MSWord). The file is stored on the AMS server, from which their teacher downloads it via ‘Mark My Words’ (described in more detail below). The AMS makes use of an AI algorithm to alert teachers to suspected plagiarism: they can check the degree of similarity between all submitted documents as well as check for copying from the web (via a Google API). Figure 4 displays a comparison report of two files which share 25% of the text in common.

Plagiarism Detection Result					
Similarity	Student	Assignment / Class	Submit Date	Status	Action
25.0%	01234568 FONG, Yat Sun lcsan@ust.hk	Sample Assignment 2 LANG999/01 AMS Demonstration MyWords Admin mywords	2007-11-17 19:00	Submitted	View submitted assignment Web comparison View details
	01234567 CHENG, Vivying vivying@ust.hk	Sample Assignment 2 LANG999/01 AMS Demonstration MyWords Admin mywords	2007-11-17 18:58	Submitted	View submitted assignment Web comparison View details

Figure 4 A plagiarism detection report in the AMS

RESOURCES FOR TEACHERS’ FEEDBACK

We developed ‘Mark My Words’ to enable teachers to insert comments into students’ written assignments. Teachers retrieve the assignments inside MSWord from the AMS server and use ‘Mark My Words’ to insert boilerplate ‘resource-rich’ comments as feedback, without having to rewrite the students’ texts. These comments automatically direct students to detailed online explanations, lookup tools, etc. This encourages students to proofread and to

write multiple drafts before submitting work, and to take an independent discovery-based approach to learning: the students, rather than their teachers, are made responsible for identifying problems and finding resources appropriate for specific language problems.

USAGE IN THE 2007-08 ACADEMIC YEAR

Currently, we have more than 7000 registrants for the various software programs. In the 2007-08 academic year, the main components were downloaded and used by more than 2400 HKUST students alone.

At the end of the spring semester, we invited about 700 undergraduate students to complete an evaluation of the system described here: about 500 found the programs 'very useful'. Most indicated that they would continue independently to use the software to help them enhance their writing, reading, listening and speaking in English. Students reported that this suite provides the most useful language learning support available on the Internet. We have significantly enhanced the performance and features of the system based on user feedback, and in the fall semester, it was introduced to postgraduate students. Again, most found the resources very useful, and many found it 'indispensable'.

EVALUATION

Our approach takes advantage of online resources to help students and teachers shift from a teacher-centered pedagogy to one that equips the student as a confident, independent and fully accountable learner.

The components of this software suite continue to be integrated into the Language Center's core course syllabuses to enable students to become familiar with discovery-based learning. The software and materials dovetail in operation with other educational technology initiatives of the Language Center and other HKUST departments, with the aim of encouraging students to monitor and review their progress and to help teachers guide their students in language enhancement.

These components are freely distributed through the 'My Words' web site, and have also been integrated into the 'Online Course System' (a learning management system) developed in collaboration with the College of Lifelong Learning.

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