SCAFFOLDING AND IMPROVING ONLINE READING

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INTRODUCTION

While many, including the Republic of South Korea, are predicting and preparing to phase out print texts, before doing so it seems advisable to do much more in-depth research about online and E-reading, so as to make them both maximally effective educationally in terms of general E-Learning, and even more specifically, in terms of language learning or C.A.L.L., the particular topic of this study. What does research so far tell us about these fields, and how can teachers use these findings and online tools to help improve language teaching and learning?

To Read or Not to Read Print or Digital Reading?

Print and digital reading will likely remain complementary tools for a long time. Many, especially in developing countries simply cannot afford or do not have access to digital texts, despite the noble humanitarian goals of Negroponte and others’ “One Laptop Per Child” program. (http://www.laptop.org/en/laptop/).

Some of the problems hindering the spread of e-learning in such places include brownouts, piracy, and high expenses, as mentioned in an online article entitled “Digital Publishing in West Africa: What Works, What Doesn’t, and Why” (Cornfield, 2012).

Only rarely do schools and even e-reader owners seem willing to completely give up their use of paper books, so publishers will likely continue developing texts for both, but in a complementary manner, producing more hybrid-texts of many textbooks and pleasure reading books. In a blog entitled “E-readers: your questions answered,” the anonymous blogger reaches the reasonable conclusion that “The best way to think of e-books is [as] just another format [for reading]. The paperback format did not kill the hardcover, the ebook is not going to kill the paperback. It’s just another way of reading books.” (p. 2) Besides ebook readers and mobile devices that can access the Web, all kinds of digital or e-reading need to be compared. In fact, Scott Thornbury [Online at http://scottthornbury.wordpress.com/2010/04/04/s-is-for-scaffolding/] suggests that readily available Internet tools
could be better for English Language Learners than e-Coursebooks, with these words: “In short, anything (e)-textbooks can do, the internet can do better.” Since many such e-texts are now being built for devices like iPads, Thornbury seems to be right in asserting that free, Open Source use of the Web can provide more than enough menu for language learners of any type.

Though enthusiasm for digital publishing is widespread, these and other problems must be overcome, especially for online users from non-European/non-English backgrounds, to be able to maximally benefit from the plethora of digital resources and e-readers that do exist. To begin to bridge some of these huge gaps in accessibility, this study examines some recent research about how to enhance digital reading for all learners in various ways, since skill in reading English as the most international and academic language is so critical for full participation in our global knowledge economy and information society. Yet, despite this great need, “many countries, such as Japan, find the English reading ability of their citizenry lacking,” as Warschauer, Park, and Walker (2011) recently noted. Even in English-majority countries, students from non-English backgrounds face increasing literacy problems as they enter middle and secondary schools. This is often due in part to the following factors:

The widening gap between actual and targeted reading proficiency during middle and high school years also creates a dual dilemma for students and educators: (i) the curriculum must cover increasing amounts of specific content, leaving less time for targeted reading intervention; and (ii) the content itself is presented in larger and more complex texts to be read. (Retrieved 3/28/2012 from http://center.uoregon.edu/conferences/ISTE/uploads/N E C C 2 0 0 5 / K E Y _ 7 0 4 2 6 4 7 / Walker_LiveInkResearchSynopsis.pdf, p. 3).

To help such non-native readers, ESL/EFL learners and others with limited or lower English reading proficiency in particular this study was proposed. It suggested using a new method of formatting electronic text known as “Live Ink®”, which applies recent advances in Cognitive Science, and harnesses the digital attributes of electronic text to help solve this important educational and economic challenge. The visual and syntactic principles of this method have been explained in detail in a recent separate publication, (Walker, Schloss, Fletcher, Vogel & Walker, 2005) summarized below.

REVIEW OF LITERATURE

Review of Studies of Technology-Enhanced Reading

Not only language teachers and researchers, but also publishers are asking, “Should publishers simply be transferring the printed page, unaltered, to the screen? NO, especially when there is so much more you can do,” by creating digital 3-D Narratives on screens for today’s learners to enjoy, writes Bowe (2012). In his view we need to discover how to best transform traditional, long-form reading from the page to the screen, using as many digital enhancements as we can—search, links, still and moving pictures, video and audio media, magnifying and formatting of fonts and text, etc. His reasoning is simple and cogent—because modern readers will demand these new features of electronic representations of books, and so many newer devices are fully capable of creating and displaying them.

In this way digital tools can work together to promote reader-generated reconstruction of the text and better interaction with the author’s intended meaning as well, supporting both self-access learning, self-discovery as heralded by Social Constructivism, but also discovery of the much wider world of others and their transcribed experiences. As Bowe writes,

The result, then, is a real revolution in the reading “event”, one with significant semantic depth. The reader learns that the book is still an essential aspect of the experience, but
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that it now acquires additional vitality with meaningful links to background detail and other contexts. . . while the printed book may be a largely linear experience for the reader, the semantic profile of the BeyondTheStory app can bring the reader closer to the manner in which the author conceived the work. . . [at times even] encompassing themes that pervade the whole history of the monarchy. . . supplementary materials [may include such things as] video of the author, hand-drawn maps, early drafts, and photographs. However this is not simply a DVD with “extras”. People, places, time, pictures, video, and maps are all linked together in a way which supports self-directed discovery. (Bowe, p. 4)

As educators we do need to be asking practical and pedagogical questions, such as, “Just because educational technologists and even users themselves can create digital media, should they?” Since many will and even more will want to read the exploding menu of new media-rich options, even creating their own applications at times, the pedagogical question to be asking ourselves is now whether to use, but HOW to use these tools most effectively for e-learning in general, and for language learning in particular, to increase “semantic depth” of understanding, and to broaden cross-cultural insights, for example. Grindstaff (2010, 2011) compiled massive amounts of free E-books links.

In this new digital age, where is the electronic stage for authors of educational material, and how can they work with publishers of digital media to create the most effective learning environments for their students? Just how will classroom reading experiences evolve, as it moves from traditional long, form, block text through the digital revolution? Broadaway (2011) sought to answer this question partially by creating a website to mirror and enhance a print textbook by using a Moodle learning environment. Despite his success in doing so, he admits that traditional books are still the academic symbol of education, believing that,

Even as eBooks become more widely used . . . the availability of eReaders will not spread equitably around the world. The print textbook will remain a mainstay of education in many parts of the world for a long time to come. Moodle . . . can play a useful role in modernizing education in these places in a way that does not require a complete reliance on technology.” [due to its being a free, Open Source medium] (pp. 3443-344).

Broadaway designed a content-based instructional (CBI) Moodle site that mirrors and enhances a print book about American English and culture. His purpose was to see how such a site could serve to enhance the effectiveness of CBI. Both Broadaway and Bowe’s work leads us to ask with them, if a teacher or publisher’s response to technology should simply be to just transfer any unaltered printed page to the screen? Clearly the implied answer to this question is “No way!”—because modern wired users increasingly demand media-rich applications. Thus Broadaway’s combination of both print text along with a website version extends the language learning activities made available. This helps to show us how one may render common CBI textbook activities into corresponding online digital Moodle modules, to effectively introduce “CALL teaching technology gradually into a traditional institutional setting.” (p. 335)

Most language learners, however, have no clear idea of the best way to learn a language, nor have many lower proficiency FL learners developed a systematic way to use effective reading and vocabulary development strategies for reading print text, much less for reading digital text. Not can most teachers guide them in how to maximize their online language learning. This study hopes to guide them both to more effective methods and to more enjoyable and fruitful online tools and programs to help enhance their online vocabulary learning and retention, thereby improving learners’ L2 confidence, motivation and reading skills, as measured by speed and level of comprehension.
Providing Maximum Clues via LexTutor.ca’s Hypertext Engine

This writer has transferred text using LexTutor.ca’s Hypertext Builder program, which enables any uploaded text to have several language learning functions added to it—namely, L2 definitions, Concordancing examples, and single word pronunciation. But which features do language learners most need and benefit from having at their disposal? This S.A.L.T. Workshop held in Perlis, Malaysia’s Universiti Technologi Mara examined this question, while looking at several digital enhancements and the rationale and advantages or affordances they offer for improving learning, especially of foreign languages. While doing so it will be helpful to ask, “Does this new digital battle require different strategies altogether from those used when reading traditional block text?” In turn, how can advantages or affordances offered by such new Web tools be used to powerfully strengthen a content-based course as well as language learning? An author-created hypertext from a true story of what happened at Pearl Harbor with 1) Text-to-Speech Audio, 2) Concordancer and 3) Dictionary Lookups is an example of this approach (at http://www.lextutor.ca/hypertext/eng/users/pearl_to_calvary.html).

What blended combination or systematic set of reading and vocabulary learning strategies can best help language learners? The author examined some of the most beneficial ones in Author, (2003). Holster and de Lint (2012) look at some output tasks that may help to bring about vocabulary gains. They simply found that mechanical output tasks (MO) were not effective to use with lower level Japanese students of English, and they did not induce greater gains than creative output (CO) tasks either. In fact they state that both teachers and students “found them dull, consistent with Folse (2004).” (p. 8), as might be expected.

Digital Gaming and Importance of First Encounters for Learning

New digital media combines the fun of digital gaming, which builds upon the fact that we learn best when having fun, just as children learn language mostly through play and socializing with others, as Crystal’s (1998) works reveal. Hemakes the rather obvious and simple argument that since playing with language comes so naturally to most natives, a natural way to learn a new language is to play games with it.The use of Gaming in digital pedagogy is an ongoing topic at MLA electronic roundtables (e.g. MLA Gaming CFP, 2012), which generate discussions about the use of games in the teaching of literature, languages, and/or writing. These include the topic of using games for language acquisition.

This naturalistic insight is further developed in recent research findings by Medina, Snedeker, Trueswell, and Gleitman (2011). Their work examined how words can and cannot be learned by observation. It studied children’s language development when meeting new words in their own language for the first time. They found that contrary to much prior research, word learning did not seem to take place so much from repeated encounters, but rather from the insight they gained from first encounters with new words in social settings, as these seem to be where strongest episodic memory associations are built up and retained. Episodic memory was first studied in word-learning by Craik and Tulving (1975). The latter first coined the term ‘episodic memory’ in 1972, meaning our ability to recall specific past events. Such past memories seem to be stronger, since they are associated with how we felt at the time certain personally meaningful events occurred to us, so they include what might be called a more ‘personalized pastness.’

Meskill (2011) refers to this Medina et al.’s finding as an insight that it could be a “game-changer,” as it is so ground-breaking, smashing some previous traditional icons in terms of
vocabulary learning. She clarifies the significance of this insight about word-learning, noting that insight is socially motivated through conversations with others with and about the new word. What is even more startling and relevant for language education is that if there is no insight on the first encounter with the word, the word gets immediately forgotten on all subsequent, all-be-they multiple encounters. This is due to our brain’s built-in efficiency. . . to reserve mental real estate for what the brain sorts as more pressing, more important [i.e. more salient information to remember]. . . what works for word learning is clearly initial insight through social relational encounter, not decontextualized repetition. In short, automated online teaching of language may be plainly counterproductive whereas humanated encounters with new language may provide the insight required for word learning. . . rich interactions with others are what matters. . . (p. 250)

Since we all like to play games and have fun when learning, especially when learning a foreign language, perceived by most as a hard task requiring lots of hard work and effort, this finding is welcome news indeed. Many teachers have also observed that the modern wired generation has become almost programmed to yearn for almost constant connectivity, perhaps an over-dependency developed by having the benefit of staying connected by an ever-widening variety of cell phones and mobile devices. In support of these feelings are the ongoing observations of Turkle (2011), who writes that we tend to expect ever more from technology and less from each other. Nevertheless, we do seem to stay in closest digital contact with those we care the most about. This is why parents feel upset when their children living apart fail to use such easy tools to keep in touch, as this sends a hidden message that they are no longer as important as their peers.

Meskill notes that Turkle’s main observation is that modern digital natives seem to become more confused about what constitutes being alone versus being with others, due to their over-dependence on continual digital connectivity, resulting in ‘relational retreat’, or rather shallow, empty messages that tend to trigger transient feelings versus deeper thought and relationships. In addition, in this process “the main attraction of being online is connectivity, not automation. [because] We prefer to play games with others versus solo, for example.” (Meskill, 251)

Meskill’s cogent pedagogical conclusion, carrying crucial significance to anyone involved in word teaching and learning, is that the most important factor leading to acquisition and mastery seems to be “engaging learners in active, authentic, productive use of the target language” (p. 250). Her final conclusion is that “all the bells and whistles, the visuals, animations, and sounds in the world are not as powerful as that first novel encounter and [flash of] insight with target language items.” (p.252-253, this writer’s emphasis) This finding mirrors what the author also concluded many years ago, namely that it is WHAT learners actually DO with new words that matters most in their learning process. As this writer stated earlier in his recent study:

Maximize Use of CALL: Raise Learners’ Awareness of Various Useful Functions

Teachers and students need to become more familiar with the various features and functions available on each type of CALL software or dictionary to make maximum use of them for enhancing all four communication skills, including comprehension as well as receptive and productive vocabulary skills to support more effective and enjoyable foreign language learning. Teachers should also aim to help raise learners’ awareness of various useful functions within their EDs so as to better use them. Most helpful research could be done by examining if such learner and strategy training is beneficial for subsequent use, as well as for more systematic and effective vocabulary acquisition, comparing portable with online lexicons and learning programs.
We may naturally predict that more systematic and consistent use of a greater variety of ED functions and vocabulary learning strategies (VLSs), such as those outlined above, should lead to more rapid and effective vocabulary acquisition. More important than the number of multimedia or technological functions being used, we may likewise expect that it is the type, order and consistency of vocabulary learning tasks, or what learners actually DO with new target words, that will prove to be most crucial in the learning process. In light of these and earlier (Loucky, 2006) research findings, recommendations and conclusions from the ED studies, lexical software and websites examined above, a specific plan can now be proposed both to advance research and to help maximize foreign language vocabulary development (Loucky & Tuzi, 2010).

Indeed it does appear that our emotive memory is strongest when we are involved in collaborative or cooperative learning. Today digital media can tap into this naturally strongest network of memory associations by encouraging socially networked learning that is clearly focused as well as content- or task-based. Insights from social co-constructive learning and collaborative meaning-building and negotiation can indeed provide us with a helpful “recipe for online teaching: orchestrated asynchronous and synchronous moments online whereby learners comprehend and use new target structures and vocabulary productively.” (Meskill, 2011, p. 253) In a similar vein, Broadaway (2011) provides a flowchart (in his Appendix, pp. 346-349) of how to render typical textbook activities into Moodle activities on Internet, mentioning typical areas like Pre- vs. Post-Reading Activities, and then Extension and Production Activities. For each, one must consider not only what factual content to present, how and in what sequence, but also how to move corresponding textbook content and language activities into Moodle activities that can develop the same skills and knowledge or more than corresponding textbook content and language activities in areas like comprehension, vocabulary and skills development.

**Defining a Scaffolded Learning Process**

According to Graves and Braaten (1996), scaffolding is defined as the process by which an expert provides temporary support to learners to “help bridge the gap between what [the learner] know[s] and can do and what [he or she] need[s] to accomplish in order to succeed at a particular learning task” (p. 169). Upon completion of this task, a learner is better able make the connection between prior knowledge and new information. Scaffolding helps this happen by allowing the teacher to interact with the student by asking leading questions and providing information to help students discover the information they need to successfully complete a task (1996). Scaffolding is important because the “temporary and adjustable structure” provided by the expert allows a student to complete a task that would have been impossible to complete without the scaffold’s temporary and timely support (1996), removed once skills are acquired (Pennill, 2002, p. 2).

Supported e-reading uses various media and means to gradually scaffold authentic texts for learners with limited reading proficiency in L1 or L2. This step-by-step process may be improved in many ways, such as those suggested by the National Center for the Study of e-Text (NCSeT) Typology and site, but also by those included in the following systematic paradigm, designed to be the core of this study. Ramonda (2012), in his recent poster presentation, noted four major strands needed in vocabulary teaching, taken from Nation (2001), namely: (1) Meaning-focused INPUT, (2) Meaning-focused OUTPUT, (3) (Teacher-directed) Language/Grammar-focused learning, and (4) Fluency development.
In his overview of research on vocabulary learning, Ramonda summarized insights from various researchers including Nation (2001), Schmitt (2008), Craik and Lockhart’s (1972) “Depth/Levels of Processing Hypothesis,” noting that the more levels and ways in which vocabulary is manipulated, the better for enhancing its retention. Based upon this principle, Hulstijn and Laufer (2001) began to measure the strength of a learner’s “need, search, and evaluation,” as components important in word acquisition.

This writer’s R&D site at www.scan2read.us aims to show HOW to scan and upload any text online, following a gradual and systematic scaffolded approach to developing L2 reading, and testing this recommended approach by helping students learn to systematically process new words using this model to help guide them. In his classic tome, Learning Vocabulary in Another Language, Nation (2001) gives clear examples of how to develop each of 18 aspects of vocabulary knowledge, half being receptive and half productive aspects (See his Table 10.1 for questions to test these 18 aspects.)

While language teachers lack time to teach all eighteen of these aspects of word knowledge, students do need some simplified method or system to learn major aspects of word knowledge needed to acquire and remember new words. In Slide #3 of the author’s online SLVA Presentation at http://www.wiziq.com/tutorial/30502-Successful-Vocabulary-Learning-Online, one can see an overview of basic principles of “Successful Vocabulary Learning Online. This Online Slideshare Presentation provides a systematic roadmap to successful online second language vocabulary acquisition that can be especially beneficial for non-native readers of English. It covers aspects like how to learn new words in any language more effectively, and how to more effectively use the Internet to help enhance online L2 vocabulary and reading development.

**DISCUSSION**

**10 Steps to Mastering Language and Vocabulary Using Computers**

Here’s a brief overview of what we’d like to be able to offer to anyone for ANY scanned text, for any English text, and later perhaps from or into ANY language. The aim is to provide Scaled (or Scaffolded) Reading of ANY English text, then upload to a site where it can be enhanced by giving Language Learners ACCESS to various other functions, including TTS, Phrased Reading, and Glossing at least. The following acronym helps to summarize our approach: Scaled (or Scaffolded) Reading.

**S** - Scan target text, from 1 or more pages, single or both sides, ID card to A-3 size text.

**C** - Clip for auto-realigning to improve ‘phrase reading chunking’ and comprehension.

**A** - Annotate and Archive with WordChamp.com or other auto-glossing tool.

**L** - Lex your brain muscles with Lextutor.ca’s Hypertext Tool (to add Listening, Monolingual Dictionary and Concordancing (multiple LL) supportive tools.

**E** - Elaborate (via Creative Voc. Story/Reaction Paper/Digital or Picture Story using PicScan, Glogster, etc. Evaluate after doing E-Reading Online or on mobile device.

**D** - Deeply Process (Using Systematic Scale and VKS Taxonomy, Loucky, 2006).

**R** - Review, Re-Encounter, Re-Cycle target terms in other online readings (Such as ReadEnglish.net or any site using http://www.wordchamp.com/lingua2/Reader.do)

**E** - Evaluate your word learning—by making up example ?s or sentences to interview others with them. Evaluate your learning after doing Word Study and E-Readings Online or on mobile devices.

**A** - Archive or record new meanings in your WordChamp Account using its E-Flashcards

**D** - Deepen your word knowledge by Daily Use—by Active Production in your writing and speaking! (POP Method)


Grammar-Activation Plan

First, the author's simple and practical VKS was used to assess each learner's degree of knowledge of about 40 target terms—20 adjectives and 20 verbs. This VKS tool is freely available from the author's site at: http://www.call4all.us///home/_all.php?fi=../misc/forms. Terms may be read and their parts of speech guessed by students from pages A and V of this writer's site: http://call4all.us///misc/jpl-vocab-adjvrb.php.

Second, lower level non-English majors at a women's junior college in Japan read and guessed from context whether these target terms were acting as adjectives or verbs in example sentences. They each printed out their papers, and results were later tallied and compared after hearing same the text read by TTS orally in our school's PC Lab. Their averages for this online test of grammar (POS) knowledge are shown in Table 1. More advanced graduate Engineering students instead used a computerized Semantic Field Keyword Approach to produce 5 writing exchanges for a Distance Learning Project between Japanese and Taiwanese students. They both most often remarked how useful it was to have these target words pre-organized for them, also supported with bilingual glosses along with English meanings (See Loucky, 2010).

Third, learners again guessed from context whether these target terms were acting as adjectives or verbs in example sentences. They each printed out their papers, and results were later tallied and compared with their first, individual results. This aspect of our study sought to determine if helping them focus on form and parts of speech would improve their learning and retention of these target terms, as well as their grammatical knowledge about them.

Fourth, though lower level students did not do so, higher level Engineering majors were asked to write their own brief Summary Reaction paragraphs to both the Adjective and Verb sections of the author's so-called "Creative Vocabulary Story for Learning Adjectives and Verbs." In this exercise we were asking if pushed output in the form of required elaboration using target terms and grammar might enhance their learning and retention as well.

Fifth and finally, we tried to compare students' level of speaking or speech-giving confidence when required to read either the Adjectives or Verbs section of the Creative Vocabulary Story. Ideally they would be video-taped both before and after being taught these words orally in class using a 'Parsed TTS Method.' These could be recorded using Skype or Voice Thread, but this researcher does not have full permission to download such software onto all computers as needed to research each of these aspects optimally. Perhaps only the higher level schools would be able to do so.

In short, our pedagogical and technological aims as a language teacher-researcher were to help these Japanese English students to improve their English Reading, as measured by both 1) Reading speed and accuracy of comprehension; 2) Listening fluency and accuracy of comprehension; 3) L2 Grammar (as assessed by improved knowledge of grammar (POS) of the same 40 terms, or of targeted SFKA Unit terms); and 4) L2 Vocabulary Development. As shown by improvement on post-test Vocabulary Knowledge Scale of five major areas of vocabulary knowledge, and 5) Oral Development, as evidenced by two measures: a) better writing of summaries of aural or read texts, and b) more confidence and fluency doing oral readings or speeches, after practicing with TTS-Enhanced Clip-Read texts. Such measurable improvements can be taken as evidence that regular use of such integrated programs boosts ESL/EFL learners' confidence and fluency, as well as their L2 vocabulary and reading proficiency, comprehension, learning and retention. As Gee and Hayes (2011) contend, though collaboration is fostered by digital age tools and seems inherent in many of them, educational reform is not
CONCLUSION

Conclusions about E-Readers: Essential versus Ideal Applications

This article has overviewed many of the common functions found in online reading programs and modern E-Readers, aiming to better categorize and compare functions that most users deem to be essential versus those seen as being ideal or preferred by some users for special applications, such as for language learning use in particular.

One of the best blogs keeping abreast of the rapid developments in digital readers/reading (DR for short) is Dr. Miriam Schkolnik’s Scoop at http://www.scoop.it/t/ebooks-for-reading-and-learning/. There one may follow along with her the many amazing developments in ebooks or e-textbooks, as it is her “Scoop it page”, where she collects scoops on the subject. Among the many yet unanswered questions in need of more detailed research studies is this simple, basic inquiry: “Do E-Books Make It Harder to Remember What You Just Read?” As Maia Szalavitz (2013, Online post) notes, “Although digital books are lighter and more convenient to tote around than paper books, there may be advantages to old technology.”

Future Research Recommendations

Since better understanding of where language education has succeeded in the past is a key to its improvement in the future, important developments in L2 Strategy Research listed by Anderson will first be summarized here. Five important developments have contributed to the success of L2 learning strategy research: 1) the identification, classification, and measurement of language learning strategies; 2) the distinction between language use and language learning strategies, 3) the relationship between strategies and L2 proficiency, 4) the transferability of strategies from first language (L1) tasks to L2 tasks, and 5) the explicit instruction of language learning strategies. (Anderson, p. 759)

Most useful for nations wishing to become more bilingual is a plan to collaborate on programs to help the youth of one’s nation to rapidly acquire international English, using more productive English and the Semantic Field Keyword Approach described herein. With this article the author offers help to any teacher willing to collaborate on a Bahasa Indonesian or Malaysian version of its 27 Quizzes for 9 academic fields to help raise the entire nation’s average English level high much faster.

Before looking at current directions in L2 strategy research with the four major skills, Anderson notes briefly how three major tools were developed for identifying, classifying and measuring them—namely standardized inventories, think-aloud protocols, and reflective journals. The author also developed this PowerPoint online at http://www.wiziq.com/tutorial/30502-Successful-Vocabulary-Learning-Online. It summarizes his findings and recommendations for “Using CALL and computerized dictionaries to maximize vocabulary and language learning online.” This presentation provides a systematic roadmap to successful online second language vocabulary acquisition, especially beneficial if you are a non-native speaker of English looking to learn English. The presentation touches on aspects like how to learn new words in any language more effectively using the Internet and online world.

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