WordEdge®

A Career Mobility Guide to
High Speed Dictionary-Based
Electronic Learning and Testing

by Robert Oliphant

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ONE: ECONOMIC RECOVERY, JOB MOBILITY, AND DICTIONARY BASED LEARNING

As Thomas Kuhn taught us, misery loves innovation even more than company. Small wonder our recession worriers — and who isn’t one these days, directly or indirectly? — are desperately looking for new and practical ways to increase their job mobility. Statistically considered, since most unskilled jobs are already filled, jobseekers from shrinking fields of employment are being advised to broaden their search to include entry level jobs in new high tech fields that are either stable or expanding, e.g., health care.

Let’s grant that each high tech field has its own hands-on skills. But it’s also true that each field, e.g., plumbing, has its own high tech vocabulary which each candidate for employment is expected to know or learn, including correct pronunciation, very much like an aspiring restaurant server learning the complete menu by heart. Hence the desirability of acquiring preliminary mastery of an employment field’s high tech vocabulary well in ADVANCE of the first interview, not in a panicky last minute cram session.

Until recently, the only way we could acquire a preliminary mastery of, say, health care terms was to take a course (inconvenient and expensive) or to study a specific-field booklet (usually limited in scope). Today, however, our current partnership between print dictionaries and their electronic versions gives any job candidate quick access to an amazingly efficient learning tool for mastering a wide range of high tech vocabularies in current use. Here’s the why and how of our dictionary-based learning and testing route.

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TWO: DICTIONARY BASED LEARNING AND THE NEED FOR AUTHORITY

Practically considered, be it a game of Scrabble or a court case, the primary authority of an American dictionary stems from our language itself, which many of us today, especially overseas, call Standard Worldwide American Pronunciation English. As indicated in public sources like Time Almanac, SWAPE is right now an official or official alternate for over two billion human beings on this planet, and our high tech vocabulary stretches even further. To test the extended domain of SWAPE’s impact, log on to dictionary.reference.com/translator and request a
translation of CARDIOVASCULAR into a number of foreign languages, including Russian and Korean.

As indicated by our medical example, SWAPE could also be called “standard worldwide HIGH TECH American pronunciation English. Rather than being "borrowed" from Latin or Greek, CARDIOVASCULAR and thousands of other technical terms were coined by Renaissance scientists after 1500 using Greek and Latin roots like CARDIO- and VAS ("vessel"). Far more than its European neighbors, English was unique in borrowing these “inkhorn” coinages directly into the language (Shakespeare loved them).

The result is that SWAPE, though primarily an Ameriphone language, also comprises an international high tech component which we can call Greco Latin International Technical Terminology (GLITT, for short). Since its technical fields are clearly identified in SWAPE dictionaries (Anatomy, Economics, etc.), GLITT has a separate pick-and-choose status for aspiring technical professionals all over the planet, including those whose SWAPE competence is relatively low. For them, American full service dictionaries are just as useful and productive as they are for Americans themselves (cf., the Asian and Near Eastern names in professional buildings, especially in California).

**Standard lexicography**

Like Tolstoy’s “happy” families, good dictionaries are all “lexicographical” in the same way. What this means is that, going back to Samuel Johnson, dictionary makers have traditionally assembled many, many specific quotation-examples for specific words and then arranged them in terms of chronological sequence and frequency of use (both of which usually coincide), along with their various part-of-speech functions (noun, verb, adjective), especially in our most frequently used 5,000 words. Unabridged, college size, desk size (smaller) — these all march to the same procedural lexicographical drummer in every civilized nation today.

Unfortunately, a few instances of what might be called “rogue lexicography” now depart from traditional practice in defining groups of words, e.g., “high school” or “cardiovascular conditioning,” as words, not as “multiple word entries.” Another departure lists different part-of-speech forms as different entries, e.g., ADENOID (1) for the noun and ADENOID (2) for the adjective. Departures like these do not invalidate the use of a rogue dictionary for reference purposes. But they greatly weaken the legal authority of a dictionary (a traditional role) and its usefulness as an international high tech vocabulary learning tool.
**High tech vocabulary coverage**

For job seekers, of course, high tech vocabulary coverage is the primary consideration, be it a giant unabridged dictionary or one of the smaller desk size dictionaries being distributed by the millions each year to American third graders by dictionaryproject.com. A fuller discussion of current dictionaries is presented in “America’s Big Four Electronic Dictionaries and Their Looming Competition,” which can be quickly accessed, read, and downloaded via pilambda.org/horizons/v86-4/oliphant.pdf.

**Vocabulary testing and measurable standards**

As far as authority goes, the importance of standard lexicography, especially today, can be summed up in one phrase: MEASURABLE STANDARDS. Like many states, California has officially replaced its former Division of Weights and Measures with a Division of Measurement Standards, along with a commitment to the science of metrology, which would certainly encompass lexicology, lexicography, and vocabulary testing.

Going further, since the international status of Standard Worldwide American Pronunciation English already requires a pronunciation standard backed up with dictionary authority, the growing use of international high tech terminology (e.g., WHO) invites the use of a specific full service dictionary like Random House Unabridged (1.2 million word-definition combinations) as an international measurement standard in the construction of special-field vocabulary tests.

Electronic or print, the American dictionary today has always been an efficient and authoritative learning tool. At a recession-driven time when job seekers are seeking new fields and new challenges, dictionary-based high tech vocabulary learning and testing is well worth exploring — even on the high school and pre-high school levels.

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**THREE: DICTIONARY BASED LEARNING AND THE NEED FOR COMPREHENSIVENESS**

A dictionary is much more than a glossary, which is fundamentally just an alphabetized list of words and definitions. In addition to ordinary words, the bold-faced entries of a full service dictionary include word elements like cardio- and proper names, along with phonetic
transcriptions, multi-word entries, spelling variants, etc. Since the term “entries" can be misleading, many dictionaries now list their number of word-definition combinations, e.g., 1.2 million for the unabridged Random House, which can be accessed free of charge at dictionary.com, and downloaded via wordgenius.com. Paralleling dictionaryproject.com, the Big Dictionary Project offers a free download to schools via eis-usa.com/pub/wgrubdp.exe.

For learners, what a dictionary entry covers is just as important as its word-definition combinations. Simply put, since we all have slightly different personal Velcro pads to help knowledge “stick,” a full service dictionary entry, much like a large display case, is bound to give our memory more potential Velcro “hooks" than a simple glossary presentation of headword and definition.

**Pre-definition entry items**

After its boldfaced headword, a full service dictionary customarily presents a phonetic transcription of its standard pronunciation, sometimes followed by variant forms. After this may come click-access to an audio version (very helpful), followed by derivative forms (e.g., singable) “irregular” forms (sang, sung), pronunciation variants, and primary part-of-speech membership (verb, noun, or adjective).

**Definitions**

The number of definitions will vary from one to over a hundred (e.g., 179 numbered definitions for RUN). As set forth by G.K. Zipf, this feature gives us a quick formula for measuring a SWAPE word’s frequency of use, namely its number of listed definitions divided by its number of letters. Via this formula RUN (179/3) comes out as very high frequency, while CARDIOVASCULAR (1/14) comes out as quite low.

As also set forth by Zipf (inverse squares), the frequency of specific definitions diminishes according to their “long tail” position. This means that the difficulty level of a definition-based crossword style question can be determined via its definition position number (the higher, the more difficult) and its number of letters. Via this formula a crossword-style RUN question using definition 20, “to empty contents," would come as more difficult (20+3) than one based on the first (and only) definition of CARDIOVASCULAR (1+14).

For American jobseekers, the listing of a subject field in italics after a definition’s ID number can be very useful, e.g., the listing of Accounting after Def. 11 (“profitable, busy”) for the entry word (also called “headword”) ACTIVE. Using the electronic version of an unabridged dictionary like
Random House, we can input our subject field in the definition slot and produce a study list of over a hundred basic accounting terms, along with reducing its difficulty level by specifying the number of letters via the dictionary’s “wild card” feature.

NOTE . . . American dictionaries, even Random House, routinely omit information regarding field labels. Unit Eight therefore presents a complete field-label access resource for aspiring jobseekers, vocabulary students, and makers of tests.

Another attractive feature of dictionary definitions is their use of illustrative phrases and sentences, as in Def. 11 for HEAT: warmth or intensity of feeling; vehemence; passion: He spoke with much heat and at great length. As we’ll see later on, we can use this feature to construct tests that measure our ability to recognize non-literal, figurative meanings in what we hear and read.

**Post-definition entry items**

This section may include the date for which the use of the entry word is first documented, usually in the sense represented by its first definition. Its etymology (word history) may also appear here, along with suggestions regarding usage. Various cross references, e.g., CARDIO- and VASCULAR, the latter of which will produce VASCULUM and -AR, which will lead to VAS and -CULE. These cross references, it should be emphasized, can be accessed very, very rapidly via click or drag-and-drop.

No matter what age we are, learning vocabulary words can be a dreary business, far more than learning to appreciate great painting. To put it bluntly, what’s called for is “sticky” in-your-head learning — call it memorization if you wish — rather than the non-sticky in-your-face partial, forgettable learning that characterizes listening to lectures and class discussion. Since each of us is different, with a different brain and different experiences to draw upon, what we remember and how we remember it is bound to vary — much as though we each had different pieces of Velcro in our heads.

An electronic dictionary gives each specific word-definition target many high speed opportunities to “stick” in the minds of those who scan-read a particular entry. To some the pronunciation (rhythm, rhyme) may stick; to others it may be the etymology or an illustrative passage. Given over fifteen different non-definition memory clues in many entries, every learner has a far better chance with these Velcro entries than with a bare bones word list, glossary, or even a set of Viz Ed cards.
FOUR: DICTIONARY BASED LEARNING AND THE NEED FOR TESTING AND TEST TAKING

To separate learning from testing is like separating a game of golf from its scorecard. As learners, even working on our own, we need to know the results of our efforts, ideally using a measurement standard that holds true year after year, e.g., the scales in a physician’s office.

**Definition-focus tests**

Most of us are familiar with definition-focus formats via Jeopardy, crossword puzzles, and the challenging Scripps National Spelling Bee, e.g., “Please spell the word which Random House Unabridged defines as “of, pertaining to, or affecting the heart and blood vessels.” We can make the question easier by adding a number-of-letters clue, or even a phonetic transcription, e.g., /kahr'dee oh vas"kyeuh leuhr/. By way of increasing practicality, we can require our one-word answer to be represented by a request for its second vowel letter based on five alternatives: A, E, I, O or U, “none of these.” If we do this, we have a test that can be machine scored without calling for costly abcd e arrays of “foils” or “distractors” masking a guessing-game challenge.

The important consideration here is that our definition-focus question format has only ONE correct answer which itself is only one word — spoken, spelled, written out, or designated via multiple choice options. Overall, a full service dictionary like Random House Unabridged offers 1.2 million such questions, each of which can be rated and ranked for word frequency, question difficulty, and even spelling difficulty.

**Headword-focus question formats**

Headword-focus questions like “What does HEAD mean?” are usually confusing and unproductive. But they can work surprisingly well as specific-feature questions, e.g. “Which syllable in CARDIOVASCULAR gets the principal emphasis (i.e., “stress”). Other headword questions can focus upon etymological source, phonetic transcription, spoken pronunciation, entry date, etc. Consequently, they can function as memory jogging study questions. Headword focus for learning, definition-focus for challenge and achievement — this combination works especially well with high tech vocabulary learning.
The most ambitious use of dictionary based learning and testing focuses upon our ability to understand which meaning of a word fits its occurrence in a specific context, spoken or written. Certainly a 7-year-old worries just as much about PLUTO in “Mickey Mouse became an astronaut because he wanted to find Pluto” as a 70-year-old worries about heads in the Alzheimer’s diagnostic question, “What does the proverb, ‘two heads are better than one’ mean to you?” Hence the desirability of using a dictionary’s illustrative phrases and sentences as elements in questions like the following.

**A dictionary-based meaning-in-context test**

Dear test taker . . . . Each of the following questions begins with a 4-letter headword (in caps) accompanied by an illustrative example (in italics). After this appear three definitions, only one of which actually contains our illustrative example. Would you please indicate (a, b, or c) which of these three definitions actually contains our example. (By way of an additional clue, each definition is followed by its entry-sequence number in parentheses.)

**Q1 HEAD:** wise heads; crowned heads....(a) the upper part of the body in humans joined to the trunk by the neck, containing the brain, eyes, ears, nose, and mouth (d1).... (b) a person considered with reference to his or her mind, disposition, attributes, status, etc.(d6).... (c) froth or foam at the top of a liquid (d13).

**Q2 HEAP:** to heap a plate with food.... (a) to accumulate or amass (d6).... (b) to give, assign, or bestow in great quantity (d7).... (c) to load, supply, or fill abundantly (d8).

**Q3 HEAR:** to hear a case.... (a) to listen to; give or pay attention to (d3).... (b) to be among the audience at or of (something) (d4).... (c) to give a formal, official, or judicial hearing to (d5). . . . [correct answers: b; d; d].

**COMMENT. . . .** As indicated by their entry-sequence numbers, dictionary definitions are presented in an ascending familiar-unfamiliar (concrete-to-abstract pattern). This means that for practical purposes the difficulty level for each question can be objectively linked to two target-features: its number of letters and the position-sequence number of the correct definition-answer, e.g., a ranking of 10 (4+6) for our HEAD question as opposed to 12 (4+8) for the one targeting HEAP. Consequently a dictionary based vocabulary program can clearly distinguish between tests and lists intended for 3rd graders students and those intended for pre-professional students. It can make more efficient use of test-taking time by emphasizing the “definitional logic” in each entry, as in the following.
**A time-saving dictionary-based meaning-in-context test**

Dear test taker. . . . Each of the following questions begins with a 4-letter headword (in caps) accompanied by an illustrative example (in italics). After this appear the definition-sequence numbers of three definitions, only one of which actually contains our illustrative example. Would you please indicate (a, b, or c) which of these three definitions actually contains our illustrative example. There’s no doubt that some guessing is involved. But your growing familiarity with how multiple-meaning words work will help you a great deal.

Q1 HEAT: *He spoke with much heat and at great length*.... (a) d1 . . . (b)  d2 . . . (c)  d11

Q2 HEEL: *a heel of bread*.... (a) d1 . . . (b)  d3 . . . (c)  d8

Q3 HELP: *Help me, I’m falling!*... (a) d1 . . . (d8) . . . . d18

**COMMENT. . . .** As they stand these timesaver format meaning-in-context questions probably come across as confusing. But I’ve tried them out with nine-year-olds, and the results are very, very gratifying. Given the 70,000 phrase-sentence examples in RH Unabridged, I have high hopes that dictionary-based meaning-in-context study and testing will soon play a larger role in both K-12 education and anti-Alzheimer’s achievement programs.

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**FIVE: DICTIONARY-BASED ELECTRONIC LEARNING — WHAT’S NEW ABOUT IT?**

Much of what’s here will work with print dictionaries, including “desk” size (40,000 entries) and “college” size (70,000 entries), some of which have electronic versions. But for mastering Greco Latin international technical terminology (GLITT), it’s essential to have access to the electronic version of a full service dictionary like Random House Unabridged Word Genius. From a lexico-electronic perspective, here’s what’s new in this user’s guide.

**Measurement-standards**

As presented here, the RHUWG as an authoritative source equips the user to assemble lists of words and word-definitions combinations in many subject fields, which can then be rated and
ranked according to word frequency, question difficulty, and even spelling difficulty (assuming, as with RHUWG, that the phonetics transcriptions employ key board characters).

The innovation level of these measurement standard features is very, very high. To put it bluntly, this country is drowning in alphabetical vocabulary lists, along with “grade level” lists whose sources are mysterious (e.g., Dolch and Dr. Seuss). Even worse, the “standards” of our “standardized” tests are changed from year to year according to the whim of educational bureaucrats and warring psychometrists. The result, as pointed out by Richard Phelps and others, is a Lake Wobegon Effect via which every school system can legitimately claim its students are “above average.”

As we’ve seen, dictionary authority opens the door to transparent measurement standards, which then open the door to learner-friendly study lists with explicitly replicable difficulty ratings and rankings. For all ages, not just PhD candidates, this feature is bound to come across as “fair” and “better.”

**Access to high tech fields and abbreviations**

From the third grade on, most Americans acquire a search perspective regarding how their home computers can handle documents, e.g., a search for the name ZIPF in this document. Electronic dictionaries simply extend this capability to include searches for word categories, e.g. 15-letter words, words that share the same field label, e.g., “anatomy,” and special lists like “all the 15-letter words in the field of Anatomy.”

Unit Seven, by way of illustration, presents a study list of 375 anatomy terms broken down into 11 sub lists of single definition anatomy terms ranging in length from 15-letter terms down to 4-letter terms. On a personal best basis, this list-construction feature equips students to expand their vocabulary in any direction they choose in roughly 200 separate fields, ranging from Anatomy to Geology, and including exotica like Numismatics, Petrography, and Golf (240 terms).

It’s worth noting here that dictionaryproject.com, with the help of service organizations like Kiwanis and Rotary, is now distributing free of charge two million desk size dictionaries to American third graders, and has been doing so for over ten years. For practical purposes this means that nearly every K-12 student today has a dictionary that can be used as a low cost learning and testing resource, especially in connection with preliminary lists produced via a full service dictionary like Random House Unabridged WordGenius (wordgenius.com).
By way of illustration, let's consider an RHUWG list for Zoology (874 terms). In general we can expect to find half of these in a college-size dictionary and a fourth of them in a desk-size one. To identify and list the actual terms themselves will require some crosschecking time. But once constructed, a derivative list like this will work beautifully as a complete time-on-task assignment tool, e.g., "Using your dictionaries, please be prepared to take a spelling-bee style written test covering the first 20 target words on the accompanying technical-field list."

As far as abbreviations go, since an American dictionary's authority is based upon the past, many of the etymologies and examples in today's dictionaries go back to the 18th century. The same is true of their abbreviations for many subject fields, e.g. anat. for Anatomy (fairly obvious), ophthalm. for Ophthalmology (a bit strange) and vet. path. for Veterinary Pathology (stranger still). In searches and list production — and this is an important point — one must often input the CORRECT ABBREVIATION, not the fully spelled out term itself.

What's truly new about this user's guide is the accuracy of the field abbreviations in Unit Eight. As might be expected, I started by checking the abbreviation lists in our major American dictionaries (Merriam Webster, New World, American Heritage, and Random House), and was greatly disappointed. So the listings here, including their flaws, have been built one by one from the ground up — just like a corrected and expanded version of an old address book. To be frank, I feel the abbreviations here comprise a major empowerment tool for all American dictionary users, and I hope they will be recognized as such by all of those who take standard worldwide American pronunciation English and Greco Latin international technical terminology seriously.

**High speed electronic learning**

Print dictionaries still work beautifully as turn-the-page reference sources, especially in the browsing that can takes place when we look at our target's same-page neighborhood, e.g., NEIGHBORHOOD, NEMATODE, NEMESIS, etc. But memory-friendly linking requires plenty of time-consuming page-turning in a print dictionary, e.g., the linking of NEIGHBORHOOD with NEIGHBOR, BOER, BOOR, HOOD, and HAT — all of these potentially helpful VELCRO-learning clues.

To put it simplistically, an electronic dictionary is fundamentally a high-speed dictionary page turner that opens the door to high speed personal best learning, as opposed to the single-stimulus rote-repetition learning required by word lists and glossaries (has anyone ever learned medical terms from a conventional glossary?). Search options, click access, drag-and-drop — a high speed electronic adaptation usually takes up a minimum amount of disk space, e.g., only 14.7
megabytes for the RHUWG. Half the time-on-task and 30% more retention — this is a fair estimate of the efficiency of dictionary based electronic learning.

**Meaning-in-context reading comprehension**

Among educators and parents, vocabulary learning is rarely a subject of discussion, much less spirited debate. But reading as a topic of debate can bring many civilized Americans to the brink of physical violence, far more than traditionally explosive subjects like religion and sex education. What our dictionary-based reading-comprehension questions do is to desensitize our reading debates by offering a wide range of potential tests at many levels of difficulty — all of them focusing upon our ability to comprehend what is “meant,” as opposed to what is said literally.

This non-literal ability of ours takes time to develop (many children remain literal-minded until middle school). Nor can it be taken for granted, cf. the use of meaning-in-context tests in connection with the diagnosis of senile dementia. Given the current disarray of American testing (e.g., recent criticisms of NAEP and other assessment programs), I believe this use of dictionary based testing could greatly improve reading speed and reading comprehension for millions of K-12 Americans, along with lowering current costs of instruction.

To sum up: Measurement standards, Access to high tech fields and abbreviations, High speed electronic learning, Meaning-in-context reading comprehension — these four features represent what’s new and important about dictionary based electronic learning. Mnemonically considered their initial letters form the acronym M.A.H.M. Though not a word, it’s pronounceable as /mahm/, enough so to make it “stick” for readers whose friends want to know what they’ve been reading. If this “what’s new” section rings true to individual readers, I hope they will share the gist of it with their friends.

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**SIX: DICTIONARY BASED ELECTRONIC LEARNING — WHO NEEDS IT?**

The basic energy behind this user’s guide comes from our recovering economy and the personal challenge it presents to jobseekers of all ages. Broadly considered, though, a full service electronic dictionary opens many doors to many kinds of learners, including the following.
**Personal best learners**

Going back to Noah Webster and Abraham Lincoln, the American dictionary has always opened doors of learning opportunity to those of us who want to study and grow on our own, very much like solitary runners and bikers preparing for marathons, biathlons, and Iron Man events later on. Unit Eight presents a wide range of fields: not just Anatomy and Accounting, but also Astrology, Heraldry, Sports, and Television. Simply put, what’s here transcends conventional notions of “education,” enough so to offer interesting vocabulary targets to any American who wants to grow on his or her own.

**Educators strapped for cash**

Our economic recovery has already required budget cutbacks for public and private education in America, thereby inviting consideration of learning programs that will meet traditional educational goals at a lower cost and still fit into our traditional T5 accountability framework of Time, Targets, Tests, Talent, and Transfer Impact.

As far as learning time goes, a reasonable starting estimate for dictionary based electronic learning is that of between five and ten words per minute of seat time, at home or using a classroom computer. Allowing additional time for review and multi-stage testing, a mid level time estimate for the 375 word targets in Unit Seven would be 45 hours, the traditional time called for a “one unit” course on the college level (1 classroom hour per week backed up by 2 study hours per week in an 18-week semester). Given a normal distribution of academic talent, a teacher might expect an overall test performance score of 70%, but the explicit nature of the learning task will encourage less talented students (less precocious?) to spend more study time and earn higher performance standings.

The transfer impact of this time/ talent investment can be inferred by subsequent performance on a number of high status vocabulary-emphasis standardized tests. The GRE, the GMAT, the LSAT, and the MCAT as a group devote at least half of their attention to vocabulary and vocabulary-related skills. On the high school level the same transfer impact can be inferred from SAT and ACT tests. On the K-8 level impact can be inferred from academic performance in high tech vocabulary courses like biology, chemistry, physics, and mathematics.
**Consensus builders**

Any nation in deep economic trouble will produce new leaders trying to build a new national consensus, ideally a mega-majority wave that will overflow conventional divisions of class, religion, ethnicity, and language. For the early days of our republic it was Noah Webster's concept of the American Language, along with Theodore Roosevelt's "American" spellings that helped us break our cultural ties to England. So it is not surprising that many activists today are calling for more consensus regarding the importance of “Cultural Literacy” and so-called “English” language skills as instruments for achieving job mobility and geographical mobility in a society where Israel Zangwill’s healing concept of the Melting Pot has been neglected for many years.

As set forth here, the concept of dictionary based electronic learning offers very strong intellectual support to consensus builders via its replacement of “English” with “standard worldwide American pronunciation English” and “Greco Latin international technical technology.” Even more important, it offers strong practical support via its identification of the Random House Unabridged WordGenius Dictionary as the ONLY available full service dictionary capable of achieving consensual-linguistic goals. Finally, via Appendices One and Two, it offers ready-to-use consensual learning tools for widespread use throughout the nation.

Why shouldn’t American school children be just as proficient in SWAPE as pre-professional schoolchildren in Hong Kong, Mumbai, and Kiev? — surely a slogan like this will pull us together linguistically far better than leaky sound bites like Head Start and No Child Left Behind.

**Alzheimer’s worries**

Call it Alzheimer’s or senile dementia, our informal diagnoses of “second childhood” are dictionary-centered. Going blank on proper names begins to appear in the late forties, going blank on ordinary words and technical terms shows up in our fifties and sixties. Going blank on meaning-in-context (jokes, proverbs etc.) represents the gerontological end of the line for many seventy- and eighty-year olds, judging from the diagnostic use of questions like How do you interpret the proverb “Misery loves company”?

Traditionally foreign language study, especially the vocabulary element, has been respected as an effective anti-Alzheimer step (the biographies of famous Americans and Europeans make for fascinating reading). Given the foreign language component in the reality-orientation programs developed by Joseph Folsom and his Veterans Administration hospital colleagues, dictionary
based electronic vocabulary learning clearly deserves serious attention by American
gerontologists and service organizations, including retirement living “memory care” facilities.

**National Dictionaries**

As indicated by over seven million hits a day the subject of international technical terminology gets plenty of attention these days, much of it stemming from a perceived need for international standards regarding the formation of new technical terms and the definitions attached to them by scientists worldwide. Practically considered, though, a student’s national dictionary — Chinese or Russian, British English or Canadian English — still remains his or her primary hold-in-the-hand learning tool. Hence the desirability of a productive partnership between each national dictionary and the full service Random House Unabridged dictionary of standard worldwide American pronunciation English and Greco Latin international technical terminology.

One key element in that partnership can be summed up in the phrase Greco Latin. Russian or British English, a term like CARDIOVASCULAR, though pronounced differently, is going to show up with pretty much the same spelling and the same definition. The second key element might be called “hold in the hand screening,” which is to say that national dictionaries prepared for widespread national use save space by including only the more frequently used terms. For a college-size hold-in-the-hand dictionary (1,000 pp.) this usually means half of what’s in RHUW G. For a desk size (600 pp.) only a fourth are usually covered. For beginning students, though, this reduced coverage feature offers a sharper focus upon what’s important, as opposed to an overwhelming assembly of study targets.

What a full service electronic dictionary brings to the partnership can be summed up in the phrase “information processing.” This means producing preliminary field lists, ranking question difficulty, and even offering high speed study alternatives (etymologies, derivative forms, cross references). From the national dictionary (non-English or English dialect) the partnership gets hold-in-the-hand convenience and practical scope; from the full service electronic dictionary the partnership gets scope, speed, and international authority. Almost like the United Nations, some might say.

NOTE... Our survey of what's new about dictionary based electronic learning employed the acronym M.A.H.M as a way of identifying (and remembering) our four most important innovations, namely, Measurement standards, Access to subject field lists, High speed learning, and Meaning-in-context reading comprehension. By way of answering our who-needs-it question, we can use
the five-letter acronym P.E.C.A.N to represent Personal-best learners, Educators strapped for cash, Consensus builders, Alzheimer’s worriers, and National dictionaries.

To tell the truth, I myself was suspicious of acronyms, slogans, and catchy titles for a number of years. Recently, though, I’ve found that the effort spent in devising one is a wholesome exercise, along with protecting a speaker from going blank on what comes next in his or her spoken presentation. Since I hope some readers will go public with what’s here, I’ve used a few of these memory-friendly devices along the way.

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A MACHO-MIND HEALTH LITERACY 375-SEVEN:

WORD SPELLING BEE

What follows can fairly be described as a social-consensus version of the perennial Scripps National Spelling Bee. The social consensus element is set forth in a short section dealing with the Health Literacy Foundation and its goal of improving the overall health literacy of Americans. That section is followed by a ready-to-fly subordinate health literacy program, namely, mastery of a mini-vocabulary of 375 single definition anatomy terms, as demonstrated by spelling-bee style test questions.

**Health Literacy, Michelle Obama, and Dictionary Based Electronic Learning**

Call it change or reform, will our new health care system actually have an impact upon how Americans think about their bodies? By way of a yes we can cite Michelle Obama’s current involvement with the Health Literacy Foundation, along with the Obama administration’s praise of the Kaiser Permanente HMO, whose web site offers its 10 million members a health literacy glossary comprising 2,000 largely Greco Latin medical terms and over 6,000 separate word-definition combinations.

But does the Health Literacy Foundation actually expect American health care consumers to learn medical jawbreakers like “cardiovascular” from wildly variable glossaries like those of Kaiser, University of Maryland, and others? By way of a practical alternative, let’s look at how this goal can be reached via the online Random House Unabridged Dictionary at dictionary.com.
As far as testing formats go, our Scripps national spelling definition-based format is ideal, e.g. “Please spell the 14-letter medical term defined as '/kahr'dee oh vas"kyeuuh leuhrl/, adj. Anat. of, pertaining to, or affecting the heart and blood vessels. As a practical step, this question format can also be translated into a multiple-choice “A-E-I-O-none of these” format asking for the target’s second vowel letter.

This testing format fits beautifully with full service dictionaries like RHU, which can produce study lists for different medical fields of different sizes with different levels of difficulty. Using the WordGenius download of RHU, anyone, repeat anyone, searching for single-definition 14-letter terms in the subject field of “anatomy” (anat.) will quickly produce a 12-term study list as a first stage introduction to how our medical vocabulary works as a system.

And it IS a system according to Steadman’s Medical Dictionary (107,000 entries), which notes that 80% of those entries draw from a construction pool of only 1,200 Greco Latin word elements.

But the most valuable feature of authoritative full-service dictionaries is the memory-friendliness of their entries for daunting entries like CARDIOVASCULAR. Pronunciation (transcription and audio), part of speech, subject field, definition, date of entry into the language, and click access to cross references — this range of memory clues offers each learner far more potential “stickiness” than skimpy learn-by-rote glossary definitions which are bound to vary from one HMO to another.

Granted the desirability of health literacy, using a full service electronic dictionary like Random House Unabridged will free individual HMOs from reinventing their own lexicographical wheels. All they need is to decide which RHU terms to list and what kind of personal best learning-testing program to offer their members (websites are cheapest).

For both HMOs and their individual members, the central advantage of dictionary based electronic learning and testing can be summed up in one phrase: Self Confidence. Although HMO physicians have for years wisely advised many of their patients to lose weight and to exercise, and although patients themselves usually promise to follow this advice, HMO records clearly indicate that overall very few pounds come off and very few bikes get ridden, largely because patients themselves lack confidence in their ability to choose a diet-exercise regimen, stick with it, and produce measurably satisfactory results.

If, as I’ve argued here, the lack of personal best self confidence plays a major role in the current persistence of low levels of patient compliance, then I believe American HMOs and medical leaders have good reason to take health literacy and Michelle Obama’s Health Literacy Foundation very seriously as a step toward transforming our present medical-services
consumption industry into an interactive health improvement partnership between patients and practitioners.

The potential success of this partnership requires us to distinguish between “in your face” information and “in your head” information. Right now the health literacy movement, like many worthy causes, is in its in-your-face “good idea” stage. Let’s hope it moves into a confidence builder in-your-head slot for many of us, especially the thousands of fiftyish Americans yearning for some personal confidence magic that will help them lose twenty pounds — without drugs. By way of illustration, here’s an in your head challenge that can work for almost any age and at every level, including the national audience that the Scripps National Spelling Bee has traditionally reached.

**A Macho-Mind Health Literacy Spelling Bee**

This spelling bee comprises 375 single definition terms that appear in the Random House Unabridged Word Genius (RHUWG) dictionary under the heading, ANATOMY. They are intended for use in a basic spelling bee definition-focus format, namely, “Please spell the 15-letter word whose RHUWG definition is “of, pertaining to, or affecting the cerebrum and its associated blood vessels.”

In specific circumstances, a multiple-choice answer may ask for vowel-letter surrogates, i.e., “Please indicate your one-word answer (e.g., *cerebrovascular* by designating its SECOND vowel letter via one of the following alternatives (a) A; (b) E; (c) I; (d) O; (e) U or “none of these,” in which case the correct multiple-choice answer would be choice (b), letter E. In one sense these multiple-choice answers will be easier, since they invite guessing. On the other hand, their economy, especially for test correctors, permits five times as many questions in the same time space.

Ideal the format of our MazdaMind Spelling Bee would call for each participant to learn all 375 target terms and face multiple-choice qualification rounds, followed by a live stand-up competition using the traditional spelling bee format. Practically considered, sponsoring organizations can adapt what’s here to their own goals and constituencies. Since the terms are grouped in their descending level of study, there’s no reason why one competition shouldn’t choose upon, say, 6-, 7-, and 8-letter targets, while another chooses its targets from the top (e.g., 15-, 14-, and 13-letter targets).
This competition focuses upon anatomy terms because they comprise a clearly defined health literacy target, as opposed to an arbitrarily constructed more general list. In this connection, though, it should be noted that the subject of anatomy was directly taught in many American elementary schools prior to the First World War (cf., final-grade reports of Missouri schools).

By way of economy, it should be emphasized that this 375-term list as it stands, especially on a computer screen, gives IMMEDIATE drag-and-drop access to the complete Random House entries for each target, including click-access cross references. In booklet form, as with the yearly Scripps events, the same study materials will take up over a hundred 8x11 pages. Quite apart from its health literacy relevance, this list represents a very, very strong argument for dictionary based electronic learning as a low-cost high productivity learning tool.

**A Macho-Mind study list of 375 single-definition difficulty-ranked anatomy terms**

Preliminary Note. . . . This list has been compiled as a study tool for becoming acquainted with high tech standard worldwide American pronunciation English as a working vocabulary system. In the interests of practicality it focuses upon single-definition terms and excludes terms whose entries present two or more definitions. It focuses upon anatomy terms because of the field’s general interest (it was taught in American elementary schools some years back).

There is no standard approach for learning these terms and the high tech vocabulary system they embody. Starting with the four-letter terms is easiest, of course. But starting at the top with the 15-letter group will build familiarity with smaller combining elements (-AR, -AL, -IC) that turn up again and again in many different technical fields — just like words in an international technical language.

By way of honest encouragement. . . . I myself still have a long way to go in mastering every one of these 375 terms. Understandably so, since I’m “disgracefully advanced in years,” as they say, which means I just can’t sponge up new words up. But quite apart from being able to pronounce and recognize them when they turn up in hospitals, it’s a marvelous feeling to have a few of these click into place in one’s head, just like shooting pool, some might say. So even if I fall short of the full 375, I feel the effort is fundamentally beneficial, especially to those who worry about their ability to learn and remember what they’ve learned.

As a memory worrier, I tried to make my spelling bee challenge easier via an extra clue, i.e.,

*Please spell the 15-letter word whose first three letters are CER- and whose definition is*
pertaining to, or affecting the cerebrum and its associated blood vessels.” I also decided to start with “first impression” questions (syllable stress, part of speech, etc.), printing up one-page lists of 20 terms with plenty of room for scribbling (“tactile learning,” some call it). Since each of us is bound to have a different memorization style (that’s what most learning is, isn’t it?), I can’t really recommend this approach for everyone, especially high school freshmen. But I feel the “you and your memory” partnership deserves serious thought by each of us, especially in light of Marcel Proust’s “Remembrance of Things Past” (the only multi-volume book which many Americans have read twice — all the way through).

Ninth grader or ninety-year-old anti-Alzheimer’s worrier, I’m sure this list of words will be interesting and provocative to many of us. Helpful, too, in strengthening our mastery of the high tech vocabulary component of Standard Worldwide American Pronunciation English (SWAPE) and its Greco Latin International Technical Terminologies (GLITT).

15 LETTERS: cerebrovascular cricopharyngea mechanoreceptor parasympathetic rhombencephalon sinorespiratory

14 LETTERS: amphiarthrosis anteroparietal cardiovascular galactophorous hepatopancreas interpupillary intervertebral laryngopharynx myelencephalon prosencephalon rhinencephalon scapulohumeral

13 LETTERS: arteriovenous aryepiglottic bulbourethral extravascular gastrocnemius gastrohepatic hemocytoblast hypochondrium interscapular maxillofacial mesencephalon neurovascular perichondrium polyarticular sustentacular telencephalon ventrolateral

12 LETTERS: buccolinguat craniosacral diencephalon diverticulum dorsiflexion epencephalon erythroblast fissipalmar governaculum hypogastrium perinephrium perionychium perivisceral reticulocyte retrolingual stereocilium sternocostal subauricular synarthrosis tricuspidate unmyelinated ventrodorsal xiphisternum zygapophysis

11 LETTERS: amphicelous anapophysis anteorbital aponeurosis canaliculus conjunctiva dentigerous diaphyseis dorsiflexor dorsispinal dorsolumbar enarthrosis endarterium endocardium endometrium enterocoele epigastrium epithalamus gallbladder gastrocolic hippocampal ipsilateral lamellation lumbosacral mediastinum mesothelium myelination nasopharynx neurofibril odontoblast olecranioid paleocortex pericardium perineurium perithelium
retrobular rhomboideus postorbital stereotaxic subcortical subscapular
syndesmosis synostosis syssarcosis

10 LETTERS... adventitia ameloblast anastomose antitragus approximal bronchiole
buccinator cancellous cerebellum colorectal encephalon endostosis epicantus
epicardium epicondyle epicranium epididymis epiglottis epineurium ganglionic
hypophysis ligamentum lymphocyte medullated mesorectum mesovarium
metacarpus metatarsus myelinated myocardium neurilemma neuroplasm
osteoblast panniculus pectoralis perimysium periosteon peritoneum prefrontal
premaxilla presternum quadriceps sarcolemma siderocyte stalk-eyed stylohyoid
subclavius submaxilla synostosis

9 LETTERS ampullula ankylosis antihelix arteriole arthrodia bronchial browridge
bursiform cerebellum choledyst clausturn endolymph endosteam endostyle
epimysium esophagus extensile genitalia ginglymus gomphosis hemoblast
hemolymph hindbrain ileocecal lemniscus lumbrical malleolar malleolus
mesentry mesocecum mesocolon myelocyte mylohyoid neuroglia normocyte
olecranon oviferous paranasal perilymph popliteal popliteus postaxial posteriad
pupillary sphincter submucosa subapical supinator trapezius vestigium

8 LETTERS acromion amniotic asternal atlantal axilemma bronchia bronchus
calcific cavitory cervical chondral choroidal cisterna clitoris cotyloid duodenum
ependyma extensor fontanel glabella gnathite gracilis habenula hemocoel
incisure inverter lipocyte masseter meninges midbrain modiolus neuraxon
pancreas peroneal peroneus phalange phleboid platysma preaxial pronator
pudendum retinula scalenus sesamoide splenius subcutis tailbone trigonum
trochlea urostyle vertebra

7 LETTERS bronchi canthus carpale cochlea dacryon dendron eardrum enteron
entopic epaxial evertor falcial fossula frontal glottis gluteal gluteus jejenum
laqueus laterad lobulus malleus mammary metopic nephron nodulus occipit
omentum oviduct parotic pharynx plantar pontine pylorus salpinx scleral
scrotum triceps urethra ventrad

6 LETTERS aboral adnexa 8:02 AM antral biceps cardia celiac cnemis cornea
crista dermis diploë dorsad dorsal fornix fenum fundus genial insula
intima limbus meatus mediad medius mucosa rectum narial rectum
A note on difficulty ratings and rankings

This difficulty-ranking system is based upon George Kingsley Zipf’s frequency-of-use findings regarding words and dictionary definitions. Simply put, a word like NECK, with only four letters a more frequently used word and easier to spell than a word like CEREBROVASCULAR, which has fifteen letters. On the other hand, the anatomical definition of NECK (number 10: a narrowed part of a bone, organ, or the like) is clearly more unfamiliar and hence more difficult to remember than definition 1 the part of the body of an animal or human being that connects the head and the trunk. Hence the sum of letters and definition number gives us a consistent way of rating each word’s learning difficulty and ranking words according to that criterion, e.g. ranking CEREBROVASCULAR as 16 (15+1) and NECK as 14 (4+10).

The system ignores other factors like the familiarity of combining elements like –VASCULAR, but it still represents an acceptable objective standard for professional metrologists to use in rating and ranking the 1.2 million word-definitions combinations in an unabridged dictionary like Random House Unabridged (315,000 entries).
EIGHT: WORDEDGE-MANY: 162 SUBJECT-FIELDS
USED IN AMERICAN DICTIONARIES AND THEIR
ABBREVIATIONS

Warning: In using field labels, watch out for potential confusion between field labels themselves
and context word in a definition e.g., ARMOR; or between abbreviation and word, e.g. GRAM (for
grammar) and GRAM (unit of measurement).

Special Note: The full version, with over 40,000 high tech terms, can be accessed as “An Access
Dictionary of High Tech Internationalist English” can be accessed by clicking on this link --
http://www.npe.ednews.org/Review/Resources/HighTechDictionary.pdf -- or copying it into your
browser window.

Banking (90) Baseball (540) Basketball (130) Billiards (60) Biochemistry (853) Biology (1011) Bookbinding (70) Bookkeeping (100)


Football (1210) Fortification (70) Fox Hunting (40) French History (20) French Cookery (50) Furniture (510) Genetics (304) Geography (76)

NOTES AND ACKNOWLEDGEMENTS

What's here is intended as a hold-in-the-hand resource, not as a zealously prosecuted case designed to overwhelm its opponents. The only exception is my position regarding the Merriam Webster Unabridged as less qualified than Random House Unabridged as a quasi official work for Americans to take seriously and trust. On a personal note, I should start here by noting that my lexicographical mentor at Stanford was Herbert Dean Meritt, whose dissertation director at Princeton was Harold Bender, the chief etymologist for the famous 1934 Merriam Webster’s Unabridged. After Bender’s death, Merriam Webster offered Professor Meritt the post a number
...of times, enough so that Stanford’s matching offers made him for many years the highest paid faculty member in the English department.

My purpose in citing this long forgotten academic scuttlebutt is to emphasize my own respect for Merriam Webster up to 1961, when the third edition, edited by Philip Gove, was castigated by the press for its permissive attitude toward usage and by lexicographers for it nonstandard treatment of multi-word entries and homonyms. I was one of the reviewers who pointed these flaws out at the time, as was Sherman Kuhn, editor of the University of Michigan's Middle English Dictionary, who described to me the 1961 as an “east coast operation.” Simply put, Merriam Webster's Unabridged is a “nonstandard” dictionary today when matched against all the other dictionaries in the USA and on the planet as a whole.

Given my emphasis upon the measurement standards movement, I feel obliged to couple that emphasis with my negative evaluation of the Merriam Webster's and my reasons for it (set forth in my previously cited review essay in Educational Horizons, the P1 Lambda Theta publication.

As for acknowledgments, most of what's here is based upon the research and writing I've done in the last three years as a columnist for the online daily EducationNews.org. This means I'm immensely grateful to its editor, Jimmy Kilpatrick, and its principal columnist, Mike Shaughnessy, along with Richard Phelps, who edited its feature “In Defense of Testing” for much of that time. Also Alfred Papallo, Eddie Ho, and Robert Minard of Eurofield Information Solutions.

More than I deserve, I am blessed with a wondrously intelligent and caring wife, Jane. She has always helped me stay on track, and now she also helps me to avoid the many prose and usage slips that writers in my current age group are prone to. My extended family continues to be a joy, along with nourishing my optimism regarding the bumpy future that seems to lie ahead for most of us.

ABOUT THE AUTHOR

Robert Oliphant's best known book is A Piano for Mrs. Cimino (Prentice Hall), a fictionalized memory rehabilitation case study which was a Reader’s Digest selection (USA, Canada, & Australia), and an award-winning (Monte Carlo, US Directors) EMI film starring Bette Davis. He has a PhD from Stanford, where he studied medieval lexicography under Herbert Dean Meritt, who directed his dissertation, The Latin-Old English Glossary in British Museum Ms 3376 (subsequently published by Mouton as The Harley Glossary. His articles on linguistics and

An overseas Air Force veteran and emeritus professor of English at California State University at Northridge, he currently writes a column for the online daily *Education News.org*.

**Reactions to previous work (A Piano for Mrs. Cimino, Prentice Hall, 1980)**

Timely, significant, sometimes poignant — Barbara Bannon, *Publisher's Weekly*. . . .

One of the best books I've read this year — Leigh Weimers, *San Jose News*

Author Oliphant has done a marvelous job with his characterizations — Betsy Klein, *Kansas City Star*

Fulfills one of the most time-honored requirements for a good novel: it has something very important to say — Ann Rice, *San Francisco Chronicle*.


There are group memory lessons and uplifting songs, and there's Mrs. Polanski, who expects those can, do. “Why are you shuffling!” she demands of Esther — Hannah Sampson, *Los Angeles Times*

In America today there are thousands of women whose lives could be compared to Esther Cimino, who took over the running of the family's successful music business, totally unaware of the tragedy ahead of her.... considered by this writer to be one of the most absorbing stories ever to come his way — Robert Walton, *Universal Press Syndicate*
Professional reactions to Oliphant’s visual reconstruction memorization method

Bob.... This will be a wonderful book!! I'm a longtime memorizer of songs and poems, most recently Seamus Heany’s “From the Republic of Conscience. — Pete Seeger, singer, author, columnist.

Dear Mr. Oliphant, Your project of memorizing poems is entirely admirable. I wish it was the sort of thing pupils were required to do in school. — Steve Wasserman, Book Editor, Los Angeles Times.

A wonderful idea. It deserves to be widely known and used. You may quote me on that. — Thomas Day, Chair, Dept. of Music, Salve Regina University, and author of Why Catholics Can't Sing!

I can tell you that it's a book I'll buy when it's published, as surely it will be... All good fortune to you in your important word. — Miller Williams, Poet and author or "Of History and Hope," the inaugural poem composed for and delivered at the second Clinton presidential inauguration.

Bob, I was so delighted and flattered that you would send me the book about memorizing poetry.... I personally prefer this approach to a focus on aging. — Charles Karelis, former President, Colgate University, author of The Persistence of Poverty, Yale, 1980.

Your fascinating “grid” is a wonderful reduction and illustration of the patterning in the GA [Gettysburg Address]. . . . I'll keep your “grid” to show students, if I may. — Helen Vendler, A. Kingsley Porter University Professor, Harvard University.

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