The limits of my language are the limits of my mind. All I know is what I have words for.

—Ludwig Wittgenstein

The Importance of Vocabulary
There is a clear consensus among literacy researchers that accelerating vocabulary growth is a vital and often neglected component of a comprehensive reading program (Baumann & Kame'enui, 2004; NICHD Report of the National Reading Panel, 2000). Numerous studies have documented the strong and reciprocal relationship between vocabulary knowledge and reading comprehension (Stahl & Fairbanks, 1987; Beck et al., 2002; Graves, 2000; Baker et al., 1995) as well as general reading ability (Stanovich et al., 1998). Research focused on school-age second language learners similarly concludes that vocabulary knowledge is the single best predictor of their academic achievement across subject matter domains (Saville-Troike, 1984).

Striking lack of vocabulary instruction
Given the pivotal role of vocabulary in virtually all aspects of academic competence, it is alarming that classroom research consistently reveals how relatively little focused academic vocabulary instruction actually occurs in the typical K-12 classroom. For example, Durkin (1979) found that upper-elementary teachers...
spent less than 1% of their overall reading instruction focused on vocabulary. More recently, Scott and Nagy (1997) documented the paucity of vocabulary instruction in 23 ethnically diverse upper elementary classrooms, reporting that only 6% of school time was devoted to vocabulary, with only 1.4% allotted to content area vocabulary. Biemiller (2004) reached a similar conclusion, noting that there appears to be relatively little explicit vocabulary teaching in the elementary grades. The scarcity of systematic, intentional vocabulary and language teaching has also been documented in programs serving English learners (Dutro & Moran, 2003; Gersten & Baker, 2000; Scarcella, 1996). Dutro and Moran (2003) and Fillmore and Snow (2000) emphasize that simply exposing second language students to English-language rich, interactive classrooms is woefully insufficient; intensive instruction of academic vocabulary and related grammatical knowledge must be carefully orchestrated across the subject areas for language minority students to attain rigorous content standards.

Drawing upon a wide body of empirical research in literacy education, the following table summarizes several broad conclusions about what “works” in vocabulary instruction:

<table>
<thead>
<tr>
<th>Effective vocabulary instruction is more than just:</th>
<th>Vocabulary experts recommend:</th>
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<tbody>
<tr>
<td>• Looking up words in the dictionary</td>
<td>• Wide reading of fiction and non-fiction texts</td>
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<tr>
<td>• Using written context to figure out word meanings</td>
<td>• Direct teaching of important individual words</td>
</tr>
<tr>
<td>• Unplanned, extemporaneous vocabulary teaching</td>
<td>• Teaching independent word learning strategies</td>
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<td></td>
<td>• Fostering “word consciousness.”</td>
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What Doesn’t Work

Prior to explicating a research-informed process for both teaching and assessment, it is imperative to be mindful of the serious limitations inherent in the three most common vocabulary teaching practices in K-12 classrooms.

1. Looking up words in the dictionary;
2. Using written context to figure out word meanings;
3. Unplanned, extemporaneous vocabulary teaching.

While each of these practices do have their place within a comprehensive literacy program, they lack the efficacy and dependability required to serve as core tools to help educators aggressively narrow the lexical divide. In the section that follows, we will briefly examine the inevitable short-comings of each of these ubiquitous practices.

Assigning words for students to look up in the dictionary

Considerable evidence indicates most children struggle when attempting to derive meaning from conventional dictionary definitions (Scott & Nagy, 1997; Marzano, 2004). A brief examination of a typical classroom dictionary can easily show why. When developing a classroom dictionary, lexicographers strive to conserve space in order to include as many entries as possible. Therefore, definitions are customarily crafted to be precise and concise, ironically omitting the very components often are most critical to grasping the meaning of a new word: an accessible explanation using familiar language and an age-appropriate example that is relevant to children's own experiences.
Directing students to derive meaning from context
Reading and language acquisition scholars seem to agree that, except for the first few thousand words in common oral usage, most vocabulary learning occurs through extensive reading, with the reader guessing at the meaning of unknown words. Yet, while essential for long-term vocabulary growth, incidental learning from context is at best an inefficient and unpredictable process. Research indicates the odds of deriving the intended meaning of an unknown word from written context is, unfortunately, extremely low, varying from 5% to 15% for both native speakers and English language learners (Beck et al. 2002; Nagy et al. 1985). Teaching students the word level skills to successfully exploit context is vital to long term vocabulary acquisition; however, contextual analysis should never be utilized as the primary or exclusive instructional strategy for supporting students’ comprehension.

Relying primarily upon extemporaneous “teachable moments”
Often, vocabulary instruction in the classroom is unplanned, driven primarily by student questions and teacher intuitions. However, efficient and effective vocabulary instruction demands informed, intentional planning (Stahl, 1999). To responsibly prepare students for a challenging reading selection, a teacher must first critically analyze the text to determine which words are most central to comprehension and thus warrant more instructional time, then consider how to teach these terms in a productive manner, conveying both their meaning and import. Teachable moments can indeed enliven and personalize classroom interactions and deepen student understandings. However, we can’t excuse a lack of conscientious vocabulary preparation within lesson planning in the name of creativity and student-centered learning. We should devote our intellectual and creative capital to thoughtful lexical preparation and effective
instruction, then tap into our reserves to respond productively to the inevitable challenges and questions that arise during the course of a lesson.

What Does Work: A Comprehensive Vocabulary Development Program

Increasing reading volume: necessary but insufficient
Traditionally, most language experts viewed vocabulary as something more “caught than taught,” arguing there are simply too many words to feasibly teach and that incidental word learning via wide reading is responsible for most vocabulary acquisition (Nagy & Herman, 1985). Reading volume is undoubtedly very important in terms of long-term vocabulary development (Cunningham & Stanovich, 1998); however, as previously noted, even with the most adept readers, incidental word learning is a protracted, inefficient, and unpredictable process, providing no way to anticipate which words will be learned, when, nor to what degree.

Developing readers cannot be expected to simply “pick up” substantial vocabulary knowledge exclusively through reading exposure without guidance. Specifically, teachers must design tasks that will increase the effectiveness of vocabulary learning through reading practice.

Rationale for direct vocabulary instruction
Over the past two decades, mounting research has challenged traditional views regarding the role of direct teaching in vocabulary development. Numerous studies have documented the positive impact of direct, explicit vocabulary instruction on both immediate word learning and longer-term reading comprehension (Baker, Kame`enui, & Simmons, 1995; Beck, McKeown, & Kucan, 2002; Biemiller, 2004; Marzano, 2004). For example, Paribakht and Wesche (1997) compared incidental vocabulary attainment among students who learned
vocabulary through either independent reading or targeted instruction. Their data showed that both approaches led to considerable gains over a three-month period. However, students learned more words through targeted instruction, and learning exclusively through independent reading often led to only a superficial understanding of many vocabulary words. Thus, the fundamental question, *Is vocabulary best acquired indirectly via reading or directly via explicit teacher instruction?*, is itself, a false dichotomy. Students need a comprehensive vocabulary program that incorporates both direct and indirect approaches to lexical development.

**A model for comprehensive vocabulary development**

Lexical scholars tend to focus their research on very specific dimensions of vocabulary growth, running the gamut from voluntary pleasure reading to explicit morphemic analysis. We agree wholeheartedly with Graves' (2000) vision that a balanced or comprehensive model of vocabulary development must include four essential elements. Research clearly indicates that while each component supports lexical growth, a school-wide vocabulary development program integrating all four components holds greater potential for narrowing the language divide. For the purposes of this paper, however, we focus on the second element, directly teaching new words, coupled with strategies to ensure that students apply their newly acquired vocabulary in academic speaking and writing contexts.

1. **Wide Reading**: Vocabulary grows as a consequence of independent reading and increasing reading volume (*Cunningham & Stanovich, 1998; Nagy, Herman, & Anderson, 1985*).
2. **Direct Teaching of Important Individual Words**: Students learn new words via various teacher-directed instructional strategies (Beck, McKeown, & Kucan, 2002; Stahl & Fairbanks, 1986).

3. **Teaching Word Learning Strategies**: Students independently learn new word meanings when they learn to use word learning strategies, such as exploring context and analyzing prefixes (Edwards, Font, Baumann, & Boland, 2004; Graves, 2000).

4. **Fostering Word Consciousness**: Vocabulary develops when students engage in various activities to increase language play, word choice in writing, and sensitivity to word parts (Nagy & Scott, 2000).

**Robust vocabulary instruction: a powerful teaching routine**

A distillation of vocabulary research, together with our 50 years of combined classroom experience, provides a clear foundation for an effective and efficient vocabulary instructional routine. Something as rudimentary and essential to teachers as how to teach an important new word effectively is rarely mentioned in both language arts and content area curricula. Surprisingly, teacher's editions of core curricula routinely direct teachers to address central lesson vocabulary with little more than the brief exhortation to *preview, cover, review,* or *introduce* key terms. Meanwhile, they neglect to provide any explicit direction in how to effectively and efficiently teach word meanings. The following steps can most certainly be elaborated and adapted, depending upon the relative importance of the words in question and students' background knowledge. However, in our experience, students greatly benefit from a consistent and recognizable approach that incorporates the following
steps:

**Instructional steps**

1) **Pronounce** Classroom observations indicate that, far too frequently, the teacher is the only person who pronounces and uses the academic language of the disciplines. Thus, the first step in teaching a new term is guiding students in correctly pronouncing the word. This will support learners in decoding the word confidently, while also supporting both auditory and muscle memory (Shaywitz, 2003). Engage all students in saying the word together two or three times. If it is a long and/or unusual term, it is often helpful to emphasize each syllable. For example:

“One of our lesson terms is accurate. It is an adjective or describing word. Please say the word with me everyone: ‘Accurate.’ Good, let’s pronounce it by syllables: ‘Ac cu rate.’ Say it again please: ‘Accurate.’ Excellent!”

2) **Explain** Understanding the meaning of a new term requires a clear explanation of the meaning, using language familiar to the students (Beck et al., 2002; Stahl, 1999). If possible, provide a synonym or known phrase to solidify the connection between the new vocabulary term and the students’ prior knowledge. Simply presenting unintelligible dictionary or textual definitions is of little value until students can grasp the gist of what a word means, within the context of the language that is already present in their lexicon.

“The word ‘accurate’ means true, correct, or precise. I might say the report in the newspaper about our successful canned food drive was completely true; it was absolutely (students chorally say ‘accurate’).”
3) Provide Examples Students will usually need at least two or three examples of a new term to firmly grasp the meaning. Moreover, these examples should be drawn from a variety of contexts, not only the one used in the reading or lesson (Baker et al., 1995; Beck et al., 2002). Multiple examples serve to build students' semantic network, allowing them to incorporate the term into their lexicon beyond mere surface understanding. It is helpful to phrase the examples such that the students repeat the target word in completing the example. This allows students to become more comfortable using the word orally, a key step in building expressive vocabulary.

"Test scores alone do not always provide a true picture of the quality of a school. Test scores present an image that is not always (students say 'accurate')." "When I check my bank account each month, I want to be sure the numbers are correct or."

4) Elaborate Research in cognitive psychology consistently indicates that learners understand and remember information better when they elaborate on it themselves (Marzano et al., 2001). Thus, students' understanding of new vocabulary terms is strengthened when they are given opportunities to elaborate word meanings by generating their own additional examples and visual representations.

"Imagine you are a reporter writing an article about our school. Come up with one accurate and one inaccurate statement about the school." "Visualize a tabloid newspaper headline saying, 'Elvis Lives!'"
5) **Assess** Researchers such as Baker et al., (1995) and Marzano (2004) have documented the importance of incorporating regular informal vocabulary assessment into the instructional process, especially with academically diverse learners. Assessment of vocabulary involves both formative, quick informal checking for understanding during the lesson, and summative evaluation as students subsequently take a formal quiz or test. In all forms of assessment, it is helpful to go beyond simple memorization or matching tasks and require students to demonstrate some deeper level of thinking and understanding. Checks on understanding tend to fall into two basic categories: discrimination tasks, such as answering focused questions, and generative tasks, such as developing additional examples.

Discrimination: Focused Questions:

*Is it accurate to say our school is the largest in town?*

Generative Tasks:

Completion Activity:

*Complete the following sentences so that the second part further explains the first part and clearly demonstrates your understanding of the underlined words.*

*I could tell the newspaper article about our new gym was not accurate;“*

Yes-No-Why Activity:
“Decide whether the following sentences make sense, paying attention to the underlined words in each sentence. If the sentence makes sense, write YES in the space to the left, then explain why it is logical. If the sentence does not make sense, write NO and explain why.

School report cards always provide an accurate and reliable description of a student’s work.”

Carrying Learning Further
The basic instructional process outlined above is offered as a foundational strategy, not an end point. Since it takes multiple encounters with a word for a student to actually learn it, teachers need to provide instruction that requires students to interact with the word in a variety of ways within a condensed period of time. It is important to engage students in activities that will bolster their expressive vocabulary (i.e. speaking and writing) as well as their receptive vocabulary (i.e. listening and reading). There are limitless strategies to support students in developing and flexing their lexical muscles. Here are a few of the most effective ones:

Sample Vocabulary Note-Taking Guide
If vocabulary words are central to lesson comprehension and required for subsequent independent reading, writing, or listening tasks, it is imperative to help students keep track of novel words through a note-taking scaffold (Marzano et al., 2001). A note-taking scaffold has multiple advantages in that it provides: (1) an advance organizer of the most essential lesson terms, (2) accountability for active student engagement during the lesson, (3) a reference for later rehearsal and study.
<table>
<thead>
<tr>
<th>Word</th>
<th>Synonym/Definition</th>
<th>Example/Image/Showing Sentence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accurate, adj.</td>
<td>True, ______, exact, precise</td>
<td>Rumors are often not information. Image of tabloid headline</td>
</tr>
<tr>
<td>Reliable, adj.</td>
<td>Dependable, someone You can ______ on</td>
<td>Our newspaper is always delivered by 6:00 A.M.; our carrier Luis is very ______. Image of a newspaper on the front porch.</td>
</tr>
</tbody>
</table>

When working with struggling readers, second language learners, and other diverse students, it is advisable to partially fill out the guide in advance, leaving blank certain key words that students are directed to fill in during the course of instruction. In this way students can focus their attention on comprehending the explanation and examples, instead of getting bogged down in the writing process and missing vital content. Gradually require students to assume more responsibility for filling in the guide, until they can independently take notes on a blank vocabulary note-taking guide.

**Vocabulary study strategies**
Students benefit from learning efficient and effective strategies for reviewing, practicing, and elaborating newly acquired vocabulary terms after teacher-directed instruction (Baker et al., 1995; Marzano, 2004). Vocabulary study should be limited to lesson-specific terms that are essential to comprehending the big ideas central to the subject matter and high-incidence academic terms that are needed to discuss and write about the topic.
Three productive vocabulary study strategies are:

1) **Read, Cover, Recite, Check (RCRC)** (Archer & Gleason, 2002), a verbal rehearsal strategy in which students learn to read the word to themselves, cover it up with their hand, recite the definition and related examples to themselves, and then check by reviewing the recorded information from the note-taking guide or other written record.

2) **Vocabulary Study Cards**, wherein students create 3” x 5” cards containing useful information related to the term, such as: definition, synonyms, examples and non-examples, associated images, sentences, and the like. Students can study their cards individually (using rehearsal strategies like RCRC), with a partner, and in class-wide vocabulary games like Jeopardy.

3) **Vocabulary Notebooks**, in which students write down terms pre-taught by the teacher as well as self-selected terms that students cull from the reading. It is helpful to have an explicit organizational scheme for what information is recorded in the notebook, such as: synonyms, images, sentences, part of speech, etc.

**Accountable contexts for speaking and writing**

All too often, the teacher is the only individual in the classroom who uses actual academic language, while students are allowed to passively listen or use casual, daily vernacular. If one of our instructional priorities is significantly narrowing the lexical divide, we must structure daily classroom contexts so that all students are accountable for using newly introduced terminology in their speaking and writing. Students with impoverished academic vocabulary and little self-confidence will need more than encouraging words and motivating topics to
develop rich, expressive vocabulary for scholastic success (Dutro & Moran, 2003; Fillmore & Snow, 2000; Gersten & Baker, 2000; Scarcella, 1996). Students benefit greatly from brief, daily classroom opportunities to use academic language in speaking and writing. One efficient way to get students to apply academic language is to provide opportunities for “prepared participation,” which affords them time to collect their thoughts and complete a written response starter. For example, in discussing the topic of bullying prior to a reading, a teacher could set the stage by asking students to first compile an individual list of examples of bullying they had witnessed or heard of. After this initial idea generation, students could be given a few sentence starters like the following (including key terms from the relevant vocabulary list) and directed to write two sentences in their notebook in preparation for the discussion.

“One form of verbal/non-verbal bullying I have witnessed in our school is ...”

“I am aware of several forms of verbal/non-verbal bullying at our school, but the most serious is ...”

Students could be prompted to rehearse their favorite example sentence with a partner in preparation for a subsequent class discussion. The teacher could then lead a discussion of these examples within a structured Idea Wave, allowing multiple students to read one prepared sentence aloud while synthesizing and elaborating as appropriate.

**Teaching words that matter most**

Intensive vocabulary instruction is absolutely necessary to produce in-depth word knowledge. However, only a fraction of the potentially unfamiliar words in a standards-based, cognitively demanding lesson can be taught, particularly within a diverse, mixed-ability
classroom. Thus, the first challenge is to determine which words warrant direct and detailed teaching. Without careful analysis of the lexical demands of a text, a teacher can squander vital instructional time on words that may be unfamiliar but have little bearing on comprehension of the focal concepts.

Intensive instruction is most worthwhile either when words are related to the central lesson concepts or when words have general utility in academic contexts. Although we want to engender curiosity and playfulness with language learning, it is easy to engage in “lexical accessorizing” throughout a lesson, spending an inordinate amount of time explicating words peripheral to the central themes and issues, yet intriguing to the teacher or a small cadre of precocious students. Relying on publishers to designate the words that warrant instruction can be derailing and unproductive. Textbook publishers often highlight words simply because they are rarely used or idiomatic. Language Arts materials have the greatest tendency to focus heavily on unusual or provocative words for the more sophisticated reader, while neglecting central lesson terms and high-utility academic words that are vital for less proficient readers. The other core subject areas characteristically provide a fairly reliable list of lesson-specific terms tied to content standards, while neglecting to mention high use academic terms students will encounter across the disciplines. For example, in a sixth-grade U.S. History chapter addressing the American Revolution, terms such as Patriot, Loyalist, and Stamp Act will predictably be highlighted. However, the plethora of vocabulary necessary for students to understand and discuss the cause/effect relationships of this historical period will not be clarified (e.g. impact, subsequent, consequences). Because of the sketchy and rather arbitrary nature of key terms selected by publishers, it is incumbent upon teachers to have a viable framework for choosing words
that require planned explicit teaching.

**Guidelines for Choosing Words to Teach**

- Choose “big idea” words that name or relate to the central concepts addressed in the passage (e.g., democracy, independence, fossil fuels, ecology).
- Choose high-use, widely applicable “academic tool kit” words that students are likely to encounter in diverse materials across subject areas and grade levels (e.g., aspect, compare, similar, subsequently).
- Choose high-use “disciplinary tool kit” words that are relevant to your subject area and that you consider vital for students to master at this age and proficiency level (e.g., metaphor, policy, economic, application, species).
- Choose “polysemous” (multiple meaning) words that have a new academic meaning in reading in addition to a more general, familiar meaning (e.g., wave as in “wave of immigrants” vs. a greeting or ocean wave).
- Especially when dealing with narrative texts, identify additional academic words (not included in the reading selection) that students will need to know in order to engage in academic discourse about the central characters, issues, and themes.

**Concluding Thoughts**

Schools need to commit themselves to implementing rigorous and informed vocabulary & language development programs so that they can aggressively address the challenges inherent in narrowing the endemic language divide. Teachers have to work collaboratively to shoulder the responsibility of equipping students with the lexical skills to successfully navigate today’s high-stakes, standards-based education. Teaching vocabulary robustly is not an ational environment. We must keep in mind, however, that end in itself but only a means to an end. The critical outcome is how well we equip students to thrive in academic contexts.