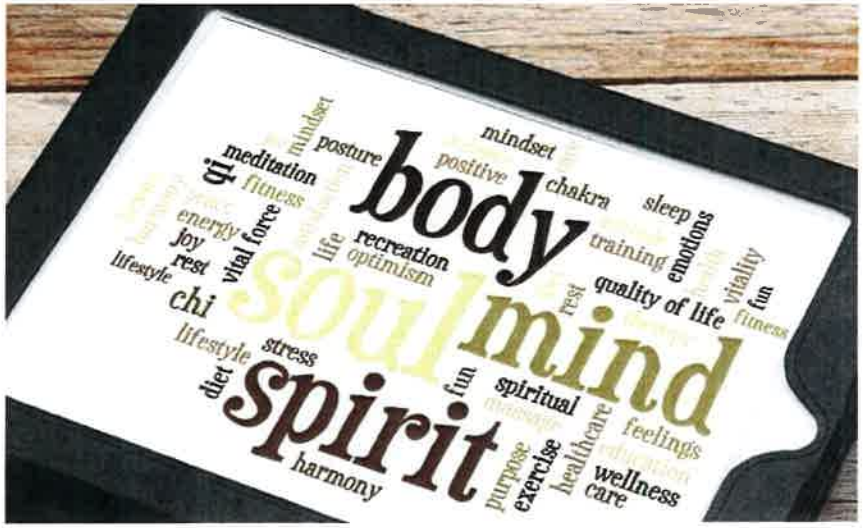
Digital Vocabulary:

Greek and Latin Root Study in the 21st Century



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Abstract

Traditional word walls displayed in the elementary classroom are typically posted by the teachers and left alone (Jackson & Narvaez, 2013). Since vocabulary instruction is best when students are actively engaged in the process, the authors of this article present the digital word wall as an active method of instruction for students to use in the acquisition of Greek and Latin roots. Students who participate in the construction of digital word walls have access to 21st century technological tools such as online dictionaries, Greek and Latin root websites, and image gathering sites such as Creative Commons.

Juan and Stephanie, 5th grade students in Ms. Brown's class, are huddled together with their laptops. Each is on a wiki page adding in their latest Greek and Latin roots (auto, terra, and port) to their digital word wall list. Next, they open a modified Frayer model, linked on their wiki page, and begin using various Web 2.0 tools (e.g. online dictionaries, Creative Commons images, Greek and Latin root websites) to gain an understanding of each root by using combinations of images, examples, and phrases. They collaborate with each other as they discover details about each of the new roots. Once finished, Ms. Brown displays Juan's modified Frayer model for terra on the Promethean Board in the front of the class. Juan excitedly walks the class through his model. These three new words bring the class' total digital word wall count to 24 roots.

With the surge of K-12 classrooms moving to 1:1 computing, where every student is provided a mobile device, as well as the "Bring Your Own Device" (BYOD) initiatives, it is imperative that classroom teachers take advantage of the technology at students' fingertips in order to move teaching and learning into the 21st century (Wash & Syracuse, 2014). Engaging students with digital word wall instruction, focused on Greek and Latin roots, is one way to address vocabulary acquisition while employing the latest instructional technologies.

Currently, vocabulary instruction is receiving increased attention (Manyak, Von Gunten, Autenrieth, Gillis, Mastre-O'Farrel, Irvine-McDermott, Baumann, & Blachowicz, 2014), even appearing on the International Reading Association's "What's Hot" list as a hot topic (Cassidy & Grote-Garcia, 2014). Attention on vocabulary instruction is indeed warranted due to the myriad of decade-spanning research indicating a link between students' vocabulary knowledge and reading comprehension levels (Anderson & Freebody, 1981; Cunningham & Stanovich, 1997; Graves, 2004).

There are not many who would argue against the importance of vocabulary instruction as it is so closely connected to reading comprehension. Deciding where to begin vocabulary instruction, however, might be difficult. Since we know that over sixty-percent of English words come from Greek and Latin roots (VanTassel-Baska, 2004), using a morphological approach to vocabulary acquisition is effective (Rasinski, Padak, Newton, & Newton, 2011). Therefore, in this article, the authors explore the utilization of the digital word wall to provide students with an active, explicit method to learn Greek and Latin roots.

What is the Digital Word Wall?

The digital word wall, in the simplest of terms, is an interactive word wall (Harmon, Hendrick, Wood, Vintinner, & Willeford, 2009; Jackson & Narvaez, 2013) that incorporates the vast Web 2.0 tools readily available (Yearta, 2012). To better understand the digital word wall, we turn first to the interactive word wall, a "visual scaffold" (Jackson & Narvaez, 2013, p. 43) in which students can see and manipulate the vocabulary words they are studying. According to the International Reading Association (2009), in order for students to be completely literate in our global society, it is vital for them to be proficient in using technologies. Therefore, we can enhance the interactive word wall with Web 2.0 tools, thus making it a digital word wall and allowing students to participate in digital word study. This instructional technology interaction turns students into *researchers* – using digital dictionaries, searching for Creative Commons images that represent the meaning, searching for examples in text, and much more. Schools believe in the importance of utilizing technology in the classroom due to enhanced learning opportunities and student engagement as well as the opportunity to practice 21st century skills (Cisco Systems, 2006). The use of a digital word wall allows students and teachers the flexibility to add images, hyperlinks, color-coding, enlarged font, symbols, and examples to develop personal associations and connections with words and word roots – prefixes and suffixes. This type of personal customization with the words on their wall builds connections similar to pneumonic devices allowing students to assimilate with how they have customized their digital word wall to the definitions and uses of the roots. For example, with the Latin root *terra*, one student may select an image of a globe to represent earth while another student may make the connection to *terra* cotta pottery. This process allows students to be actively engaged in the vocabulary learning process with the digital word wall.

Why Greek & Latin Roots?

Morphemic analysis, examining each unit of meaning in the word to infer the overall definition, is typically featured in middle and secondary classrooms (Baumann, Edwards, Boland, Olejnik, & Kame'enui, 2003); however, some researchers see reasons to recommend an early start on the teaching of parts of words at the primary/elementary levels (Biemiller, 2004; Moats, 2000; and Templeton & Pikulski, 1999). Additionally, Kieffer and Lesaux (2008) argue for the inclusion of morphological study in reading programs for English Language Learners. Nagy, Anderson, Schommer, Scott, and Stallman found that knowing a single word from a morphological family can help the reader decode the meaning of unknown related words, e.g. *chron* denotes time as seen in chronological and synchronize (1989). One place that teachers may want to begin, in implementing morphological study in the classroom, is with Greek and Latin roots.

Studying Greek and Latin roots is important for the following reasons (1) many content area words derive from Greek and Latin root words, (2) they make up many multisyllabic words, and (3) studying just one Greek and/or Latin root can help students to understand numerous other words (Rasinski, Padak, Newton, & Newton, 2011). "A growing body of academic research is beginning to demonstrate the power and potential of a Latin-Greek approach to vocabulary instruction" (Rasinski, et al, 2011, p.138).

Classroom Implementation

There is flexibility with the implementation of the digital word wall. While students can certainly work as individuals on the digital word wall, placing students in small heterogeneous groups of 2-4 provides them with opportunities to collaborate and learn from one another. Students can remain in word study groups for the duration of a chapter, unit of study, completion of a short novel or other instructional benchmark.

The Modified Frayer Model. The students begin enhancing their digital word walls by creating modified Frayer models (Yearta, 2012) to aid in the conceptual understanding of their Greek and Latin root words. Frayer, Frederick, and Klausmeier (1969) originally proposed the Frayer model as a comprehensive tool to help students in their endeavor to acquire conceptual knowledge. The modified Frayer model is comprised of five components that work for the study of Greek and Latin roots: (1) the root, (2) the meaning of that

root, (3) an example of a word containing the root, (4) the meaning of that word, and (5) a student generated sentence with that word and an image. An electronic template of the Frayer model can be disseminated to the students via their class wiki pages. When a new root is added to the list, each student can open the template, begin researching the root, and documenting his or her visual representation for the root. The document is saved and stored on the wiki pages for future use and sharing. If technology is not readily available or access is limited, paper copies of the modified Frayer model (see Figure 1) can be used.

Wikis. PBWorks, https://plans.pbworks.com/academic, is one example of a wiki website that allows educators to create wikis for their classrooms and is most familiar to the author. Other free wiki resources that can be used include Wikispaces (http://www.wikispaces.com/), Weebly (http://education.weebly.com/), and Google Sites (https://sites.google.com/). While there are versions of PBWorks available for purchase, the free version supports up to 100 users and is adequate for hosting the digital word wall. For information on creating and editing your wiki space, see the PBWorks Education Manual: http://edumanual.pbworks.com/w/page/58006589/Home. The teacher will most likely locate the majority of the useful information, such as adding, editing, and deleting pages, under the "workspaces" tab. The teacher can choose to have one class word wall or can allow the students in each group to maintain their own word wall. If the teacher elects to have each group maintain their own word wall, group names are assigned, entered in, and linked to an individual wiki page accessible by the teacher and students (see Figure 2).

One way to organize the digital word wall is to allow students to have a specific place to create their modified Frayer models. The teacher can do this by editing the wiki so that each group, when they click on their group number, is taken to a "homepage" in which the Greek and Latin roots for the week are listed (see Figure 3). The editing tools for this program resemble those found in Microsoft Word making the platform easy to navigate and familiar. Once the student clicks on the particular Greek or Latin root, the student can then create the modified Frayer model (see Figure 4). With the flexibility of using technology for digital word walls, students have the option to save, even if the work remains in an incomplete stage. The student can then come back to this as class time allows, alleviating the issue of lost work and reassuring students that may work at a slower pace, that their work is safely stored and ready for completion as time is allotted.

Digital Tools. Many students feel that it is easier to remember information from the digital word wall. For example, a student shared, "it's easier to remember things that have more color and it was a little bit bigger than something small." When students use the digital tools, as opposed to the traditional tools, pencil and paper, of the non-digital word wall, they can change the size and color of fonts and images. This manipulation is indicative of students' engagement in the digital word wall. Students' learning is enhanced when they are actively engaged with vocabulary learning (Mountain, 2002; Wells & Narkon, 2011). Below, three digital features are discussed: (1) the online dictionary, (2) Greek and Latin root websites, and (3) Creative Commons images. While this is not an exhaustive list of available tools, it is a great starting place when first introducing this process to students.

Online dictionary. Students can face several common difficulties when looking up words in a traditional dictionary. Specifically, students who struggle with spelling and sound-symbol relationships may find that trying to locate a word in the dictionary is frustrating. However, typing the word into the digital dictionary (website), allows for the student to more easily access the definition. One student mentioned, "It was easier to find definitions on the computer." There are a plethora of online dictionaries on the Internet. Some of the most useful are http://www.merriam-webster.com/ which contains a site for students as well as the traditional dictionary site, http://dictionary.cambridge.org/ which has the typical features of an online dictionary with the option to translate to other languages (may be useful for English Language Learners), and http://www.thefreedictionary.com/ which contains full definitions, the etymology, and thesauri entries.

Greek and Latin root websites. When students use a traditional dictionary to look up words that contain Greek or Latin roots, they typically find words in which the roots come first. For example, the Latin root *port* would result in such examples as *porter* or *portable*. When students have access to Greek and Latin root websites, such as https://www.msu.edu/~defores1/gre/roots/gre_rts_afx2.htm and https://www.learnthat.org/pages/view/roots.html, they are better able to find such words as transport, export, and imported in which the root might be found in the middle or at the end of the word. Teachers appreciate this feature of the digital word wall. In fact, one teacher mentioned, "I kept seeing a repetition of words when they used the dictionary." However, when this teacher's students were using the websites to look up words that contained Greek or Latin roots, she noticed that students were finding, "new and different words that were appropriate almost every day." Another teacher who tried the digital word wall noticed a similar trend. She stated that her students were able to "find some more unusual words and they really enjoyed that."

Images. If students are going to work on a modified Frayer model without the use of digital tools, they must draw the images themselves or locate appropriate images in photo albums or magazines. This can be quite time consuming. With access to digital tools, students can quickly peruse clipart, Google images using the usage rights filtering option (https://images.google.com/), or Creative Commons images (http://search.creative.org/) – all of which can be used without fear of copyright violations. Teachers have so little time in the day; anything that can help expedite the instructional process, without sacrificing content can be beneficial.

Closing Thoughts

For teachers that might be interested in integrating the digital study of Greek and Latin roots into the curriculum, but overwhelmed by the plethora of roots out there, the question of where to begin is paramount. The study that this article is based off of (Yearta, 2012) focused on 18 of the 26 roots that were required for students in the fifth grade to know. In the absence of a compulsory list, the authors suggest that educators review science, mathematic, and social studies content and choose roots that are represented in the content areas. For example, when studying geometry, semi, and tri are possibilities. When studying ecosystems in science, terra and bio might make the list. It may be useful to collaborate with other teachers to compile a list of useful Greek and Latin roots for the students in your grade level.

Further research is needed in digital vocabulary study. Possible questions for future researchers to examine include: (1) What are the results when students choose their own roots to study? (2) What are the long-term effects of Greek and Latin root study on students' academic performance in the content areas? and (3) Does studying Greek and Latin roots impact student writing?

We know that active involvement is incredibly important for vocabulary acquisition (Manyak et al., 2014; Taylor, Mraz, Nichols, Rickelman, & Wood, 2009) and that technology has "significant potential for vocabulary development" (Blachowicz & Fisher, 2006, p. 13). With the digital word wall, students are using technology and are actively involved in the entire process. They search for examples of words with the given Greek and Latin roots, they find definitions, they compose sentences and select appropriate images. Combined, these strategies provide students autonomy and allow them to make personal connections to their own learning; thus deepening their knowledge of the roots and increasing their overall vocabulary acquisition.

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as Mentor Texts:

Reading and Writing Outside the Pages

BY DEB L. MARCIANO

Abstract

Using picture books as mentor texts inspires engagement and motivation for enhancement of students' reading and writing connections. Invite students to innovate on these books to add their own perspectives! Make writing fun!

In these times of high stakes testing and pre-packaged reading and writing programs and prompts, children's development of how to choose books for pleasure reading rather than for earning points is often sacrificed. Rasinski (2012) reminds us of three "essentials" of developing reading fluency which may be missing in these types of materials: reading real literature, getting real-time word recognition support, and participating in assisted reading activities. Pantaleo (2005), Sipe (1998), and Nodleman (1988) impress upon us the power of picture books to stimulate thinking and metacognition and the possibilities of using real literature and engaging and interesting writing activities that stem from reading enjoyable books. In authentic contexts, picture books can provide engagement that is fun and inventive.

Research supports that the pictures hold numerous opportunities to develop creative and critical thinking skills to lead readers to possibilities for extension (Walsh, 2003, Labbo, 1996, and Kiefer, 1995). Sims Bishop's (1990) seminal research examines the concept of viewing stories through doors and windows, to see who and what personal connections occur as a result of reading. Being able to choose reading materials provides students with occasions to read about characters like themselves or about those who are not, but also provides choice, which extends the transactions made between readers and texts. Research further indicates that picture books can serve as an extension to and creating innovative thinking. Daly and Blakeney-Williams (2015) cite a number of studies linking the use of picture books to development of math skills, artistic and abstract thinking and the development of critical thinking, "suggesting that picturebooks can be useful in many curriculum areas for many purposes" (p. 89). These authors hold that picture book art can spark children to create their own artworks, "because of their exposure to, and discussions about the art in the picturebooks" (p. 90).

The following text set offers picture book titles which can easily inspire children of all ages and abilities to consider and develop alternative perspectives, creative thinking and writing skills, and seeing how they, as authors, have the power to determine the outcomes of their own stories. These books can serve as mentor texts not only for reading discussion and writing extension, but as cross-curricular evidence of learning and synthesis of information. Ralph Fletcher (2015) states that mentor texts are, "...any texts that you can learn from, and every writer, no matter how skilled you are or how beginning you are, encounters and reads something that can lift and inform and infuse their own writing." Further, Dorfman and Capelli (2007) describe use of literature to inspire the reader to imitate through their own writing. Gallagher suggests that: "we must teach students to imitate model texts before they write, as they write, and as they revise" (2014, p.28).

The use of mentor texts can also serve to meet Common Core Standards, 4, 5, and 6:

> Standard 4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone.
> Standard 5: Analyze the structure of texts, including how specific sentences, paragraphs, and larger