

Gamified Vocabulary

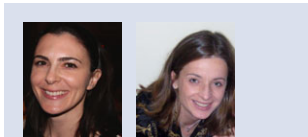
ONLINE RESOURCES AND ENRICHED LANGUAGE LEARNING

Sandra Schamroth Abrams & Sara Walsh

This article examines how gamified practices in online settings can support adolescents' acquisition and application of vocabulary.

Gamification is “the process of using game thinking and game mechanics to engage audiences and solve problems” (Zichermann, 2012, para 1), and it includes “game-like” elements, such as rewards, points, and top score leaderboards in non-game activities and environments (Kapp, 2012). Gamification is rooted in problem solving (Zichermann & Cunningham, 2011), and it is not to be confused with edutainment, or “any electronic games that use entertainment in the service of education... [and] tend to focus on simple game structures, which provide a limited learning experience for younger children because edutainment feeds the player information, rather than encouraging curiosity and exploration” (Nielsen, Smith, & Tosca, 2008, p. 212).

In this article, we focus on the gamified features of web-based software — rewards, adaptive feedback, and problem solving—in relation to students' independent and collaborative development of vocabulary. More specifically, we draw upon



Authors (left to right)

Sandra Schamroth Abrams is an assistant professor at St. John's University, Queens, New York, USA; email abramss@stjohns.edu.

Sara Walsh is an English Teacher at EF International Academy, Tarrytown, New York, USA; email Sara.Walsh@ef.com.

our separate experiences teaching vocabulary using online, adaptive resources as assistive tools, and we present data from two different settings: an after-school program and an in-school classroom. In so doing, we highlight features of online gamified educational spaces that can be continuously updated, customized by the user, and responsive to individual learning trajectories. Such technology is adaptive, providing feedback tailored to each student's needs and, thus, supports differentiated approaches that help students learn vocabulary both in a contextualized and rote fashion.

This current discussion stems from our interactions with eleventh grade students and young adults in the New York City metropolitan area. Our inquiry emerged from the overarching question: What role does gamification have in adolescents' vocabulary development and their attitudes toward learning vocabulary? In order to answer this question, we needed to examine the features of online vocabulary sites, as well as students' behavior and feelings related to their experiences with vocabulary learning. Similar to Gómez and Kuronen (2011), who conducted a cross-national study by comparing their separate, respective ethnographic and case studies of local practices, we juxtaposed and compared our individual qualitative discoveries of vocabulary learning, engaging in

collaborative data analysis to inform research-based instructional practice.

During the 2011-2012 school year, we independently developed class sessions and activities that hinged on vocabulary instruction with online tools. The two different settings—the university classroom-as-after-school tutoring space for high school juniors from various public and private schools and the eleventh grade English classroom of an international school—served as backdrops for our collaborative analysis of how students best learn vocabulary using adaptive technology. Whereas the after-school participants were primarily interested in vocabulary acquisition to boost their verbal SAT scores, the international high school students were learning required literature-related vocabulary.

As educators with common interests in digital technologies and contemporary pedagogy, we surveyed numerous online vocabulary resources to assess their effectiveness with our different student populations. Though there were a number of online resources our students used to learn vocabulary, from Google to Wikipedia to Dictionary.com, in this article we focus on the Vocabulary.com Challenge (henceforth referred to as “The Challenge”) and the site’s related word list features because the software engaged students in vocabulary learning beyond word definitions. The Challenge uses adaptive technology to determine words students need to learn, and the site also uses a similar approach to teach customized word lists from particular texts. We found that the game-like features of the site, coupled with its integrated dictionary, offered an effective hybrid teaching tool that honored independent and flexible learning opportunities.

Gamification and Current Vocabulary Research

Though online vocabulary sites—from Dictionary.com to The Challenge—involve some rote learning, we found gamification elements promoted problem solving, collaboration, and independent learning. Gamification often involves a points-and-rewards system, but, unlike edutainment, which does not typically focus on problem solving, gamification ultimately is about “the sense of engagement, immediate feedback, feeling of accomplishment, and success of striving against a challenge and overcoming it” (Kapp, 2012, xxii).

In terms of vocabulary instruction, little is known about gamified word-learning resources. Research on

videogames suggests that games can provide students a visual context for understanding of vocabulary, as well as a schema for factual information (Abrams, 2009; Squire, 2013; Squire, Giovanetto, Devane, & Durga, 2005). Multimodal representations of words, and the presence of online annotations or glosses, are also known to support vocabulary development in English Language Learners (Guichon, N. & McLornan, 2008; Yoshii, 2006). Further, a study of Chinese undergraduates’ experiences with website-based English vocabulary games indicated that learning a word through repetition, as well as in the context of a sentence (as opposed to an isolated definition), aided vocabulary development (Yip & Kwan, 2006). However, Yip and Kwan also noted that specific design characteristics unrelated to vocabulary (e.g., shooting-based and time-based games) distracted students from focusing on the vocabulary at hand.

Moving forward, there remains a dearth of research related to online dictionary-based sites that include game-like features. However, we do know that offline “classroom vocabulary games provide a social context and a social purpose for reading... [and] can be designed to supplement teacher directed instruction and support student comprehension” (Wells & Narkon, 2011, p. 46). In their most recent book, *Vocabulary for the Common Core*, Marzano and Simms (2013) also called attention to online and offline academic games, which “are an extremely effective (but typically underutilized) way to help students engage with academic content” (p. 36). Of the 30 games Marzano and Simms listed, only three approaches explicitly involved digital resources: 1) a program supporting teachers’ collection and annotation of websites for students to use, 2) the creation of one-minute videos that reveal students’ word knowledge, and 3) the use of word clouds (via Wordle.net) to support experimentation with words and how arrangement affects meaning. Though these three suggestions may be effective, none involves a gamified approach or adaptive technology that provides “explicit information on-demand and just-in-time,” a gaming principle that can help the learner attain information when needed or “just at the point where the information can be understood and used in practice” (Gee, 2007, p. 226).

Looking More Closely at Gamified Vocabulary

Lee and Hammer (2011) acknowledged that, in addition to cognitive mastery and flexible social roles,

gamification involves an emotional element in real-time feedback and rewards as the player experiences “concrete challenges that are perfectly tailored to the player’s skill level, increasing the difficulty as the player’s skill expands” (p. 3). Such explicit and immediate feedback helps the player think critically and is necessary in order for gamification to be meaningful (Nicholson, 2012).

The Challenge requires users to identify synonyms and definitions in different multiple choice

questions based on current news sources and classic literature. Figures 1 and 2 illustrate how the site combines aspects of traditional multiple choice questions with opportunities for students to be agents of their own learning. For example, in Figure 1, though the multiple choice answers are four to six words in length, the explanatory passage that appears after the student has selected the answer offers a 100+ word passage, further explaining the word, *hirsute*, in context.

FIGURE 1 An example of a multiple choice question that features the word in the context of a sentence, the word explanation that appears once the question is answered, and the options to look up the word, listen to its pronunciation, and add it to a vocabulary list for further practice. Reprinted from Vocabulary.com. Retrieved August 28, 2013, from <http://www.Vocabulary.com>. Copyright 2013 by Vocabulary.com. Reprinted with permission

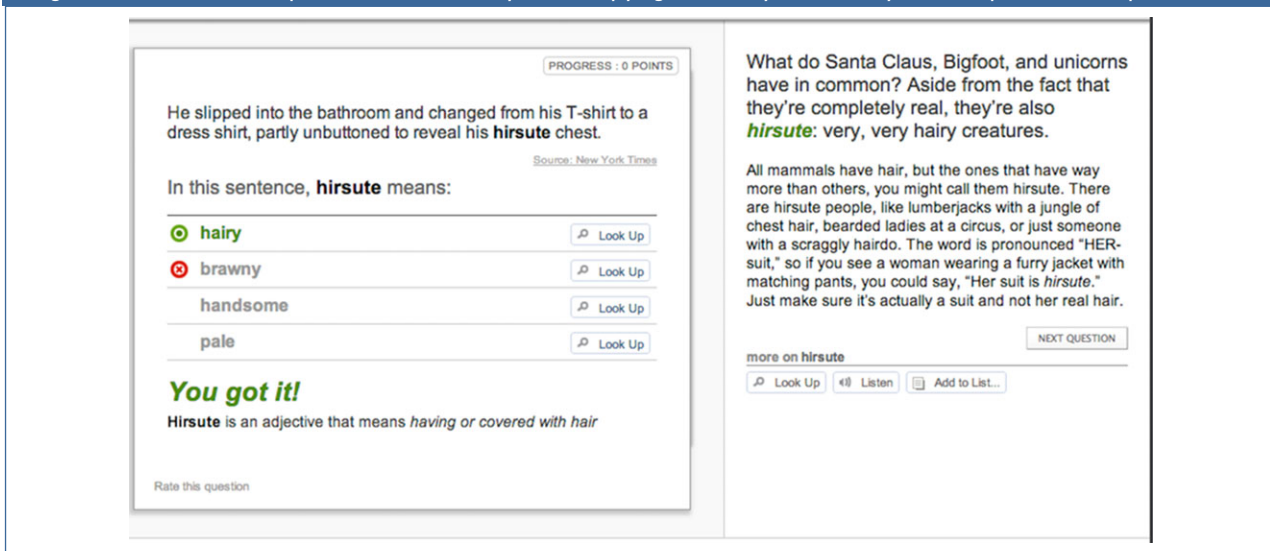
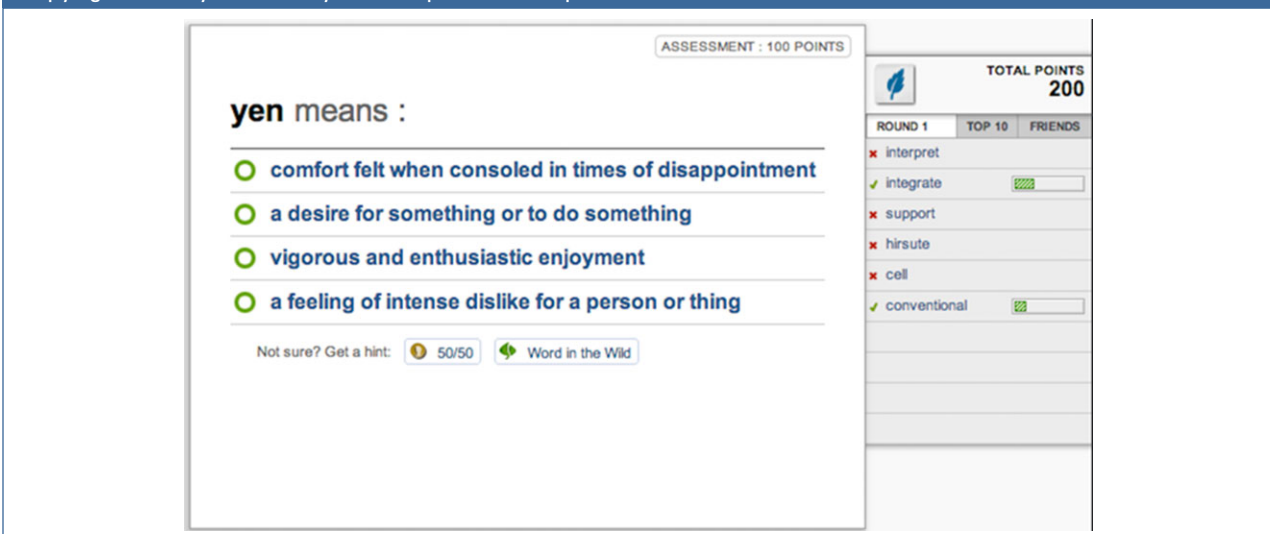


FIGURE 2 An example of a multiple choice question without context. Hint options are featured below the set of possible answers. Reprinted from Vocabulary.com. Retrieved August 28, 2013, from <http://www.Vocabulary.com>. Copyright 2013 by Vocabulary.com. Reprinted with permission



Additional links enable students to “look up” the word in the website’s dictionary, “listen” to the word’s pronunciation, and “add [the word] to list” for additional practice.

Figure 2 shows how a student may encounter a word without any context. However, the options, “50/50” and “Word in the Wild,” respectively enable students to remove two incorrect answers or see how the word is used in authentic sentences drawn from the news or literature.

Further, the status bar to the right of the question provides real-time feedback on progress—from one’s degree of word mastery to the number of points achieved to one’s status within the game (the leaf icon is the game’s symbol for “novice”). As Figure 3 demonstrates, students can improve their status and also earn badges, like the green crown (signifying a perfect round) and the numbered medallions that indicate correct consecutive answers, such as ten in a row and five in a row. In other words, these rewards are directly related to student performance and immediate assessment.

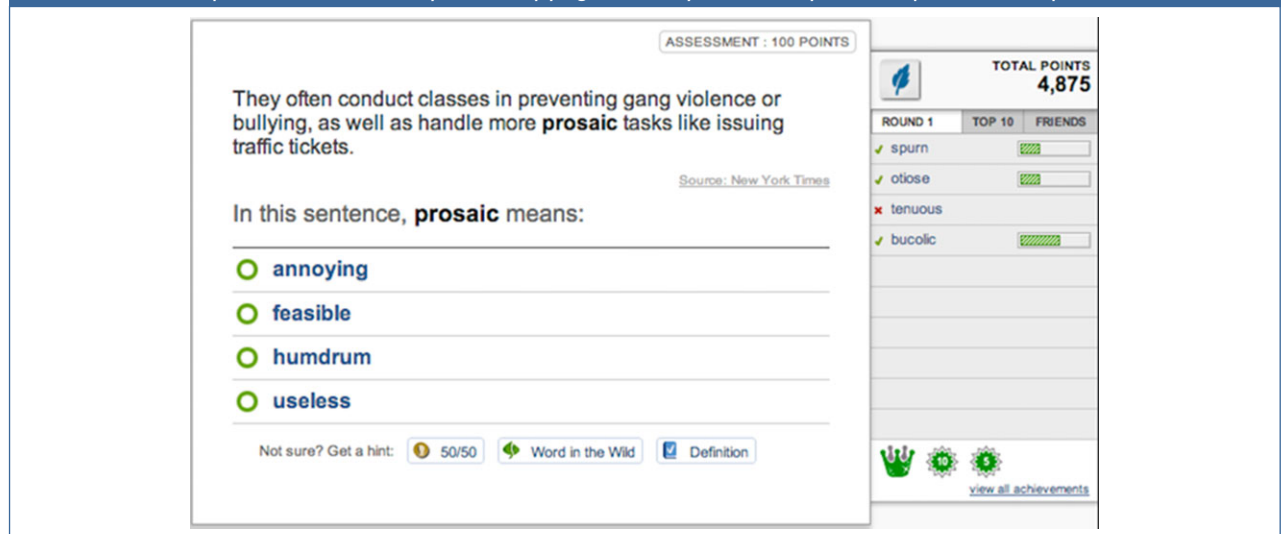
This type of gamified approach hinges on software that adapts to the student’s progression and provides real-time analytics of one’s level of “mastery,” or word knowledge. Based on the student’s responses and question success rate, different words are presented and re-mixed into a student’s personal learning program. The student’s level of mastery is noted and then continually updated as he or she plays. Research

suggests that students “need multiple opportunities to read and use words in multiple contexts” (Nagy & Townsend, 2012, p. 96), and The Challenge provides these various opportunities by re-introducing troublesome words again and again, but in different passages with different types of questions.

Ultimately, the eleventh graders in our two different settings developed their vocabulary knowledge because they *interacted* with words in a variety of contexts supported by images, sounds, and rich explanations. Unlike edutainment, the *games challenged* students to apply their word knowledge and provided students *immediate feedback*, as well as hints or help options. The emphasis on interaction, challenge, and immediate feedback calls attention to the active learning opportunities that helped students learn by doing and not just memorizing, aspects inherent in most gaming experiences (Gee, 2007). Students also reaped the emotional rewards by earning points and achieving status levels that were accompanied by badge-like emblems for all to see, gamification’s social currency (Zichermann & Cunningham, 2011).

No doubt, the interactive nature—and, yes, the novelty—of some technologies might have had a certain attraction that drew students to the digital text. However, as research indicates, students will abandon the text if it does not have the substance to sustain interactivity and engagement (Clark & Rumbold, 2006). Gamification helps to maintain student

FIGURE 3 An example of the status bar and rewards displayed to the right of a question, noting the player’s progress. The leaf icon represents “novice” status, and the badges, such as the crown and the medallions, respectively indicate a perfect round and ten and five in a row. Reprinted from Vocabulary.com. Retrieved August 28, 2013, from <http://www.Vocabulary.com>. Copyright 2013 by Vocabulary.com. Reprinted with permission



interest because it hinges upon “engagement, story, autonomy, and meaning” (Kapp 2012, xxi), and it includes working with others in cooperative and/or competitive situations (Smith-Robbins, 2011).

The Two Classroom Contexts

At the beginning of the 2011 academic year, Sandra sent e-mails to principals and guidance counselors of New York City public and private high schools within the same borough as her university, advertising free SAT vocabulary support sessions to take place on the university campus during the Fall, 2011 semester. In the university setting, Sandra led five, 75-minute after-school SAT vocabulary support sessions in which her graduate students tutored 14 diverse eleventh graders who attended public and parochial schools. The students represented a cross-section of the local population: African American, Hispanic American, Asian American, Russian American, Italian American, and Middle Eastern American students, all speaking English as their primary language. Of the students enrolled in the free support sessions, nine provided formal permission to be part of the study. However, the support sessions’ required activities, such as the in-class use of online sites and weekly self-report, reflective e-mails of vocabulary experiences during and outside of the tutoring sessions, were completed by all of the students, regardless of their participation in the study.

In an effort to learn more about the students’ use of online vocabulary resources, as well as their feelings about vocabulary learning, data collection included the following: audio-taped tutoring sessions and adolescent think-alouds; observations of adolescents’ online vocabulary searches; individual and group interviews; pre- and post-tests of adolescent word knowledge and feelings associated with vocabulary learning; surveys and field notes; graduate student reflections; adolescents’ weekly self-reported online and offline vocabulary experiences, as well as The Challenge game statistics (all accessed with student and parental permission). Student interviews, reflective e-mails, Challenge statistics, and researcher field notes supported data triangulation, which, along with thick, rich description, helped to establish qualitative validity (Creswell, 2013) and accurately inform research-based practice.

The reflective e-mails were the only required out-of-school work, but students opted to use The Challenge at home to learn school and SAT-related words. It is possible that the use of The Challenge during two after-school sessions, along with the

public acknowledgement of students’ progress in The Challenge, might have prompted students’ independent use of it beyond the after-school meetings. Further, though the five face-to-face support sessions took place between September and December, the evaluation of adolescents’ use of online vocabulary tools, which consisted of students’ self-reports and website-based statistics, continued until February 2012. This design provided insight into participants’ independent use of online tools beyond the face-to-face setting. Finally, the graduate tutors, who were enrolled in a research methods course, learned about data collection and analysis and the use of online feedback-as-data for teaching. Graduate students provided field notes and post-tutoring reflections.

During the 2011-2012 school year, Sara integrated vocabulary instruction with every literature unit, an exercise she found benefited her two eleventh grade Language and Literature classes. Sara is a teacher at a school with an International Baccalaureate curriculum, where the students hail from more than 29 countries. Her classes were comprised of 15–20 adolescents, with the majority being second-language learners with intermediate-to-proficient fluency in English. Due to the many assessments required for the International Baccalaureate diploma, little time was available in class for intensive vocabulary instruction. However, in an attempt to supplement students’ reading experiences and to support vocabulary instruction, Sara created Vocabulary.com custom word lists featuring 25 words from each class’s readings and introduced the game to her students in October 2011. Based on student responses and performance, Sara continued this approach for every new literature unit, engaging her students in collaborative game play for 40 minutes of the 50-minute class period.

In addition to documenting students’ grades and maintaining classroom participation field notes, Sara kept a running record of Challenge victors. She gauged all students’ progress in the online space, using the feedback as formative assessment. Informal student conversations and sidebar comments also informed Sara of students’ use of the vocabulary site outside the classroom. Students’ grades, Challenge statistics, student feedback, and researcher field notes aided data triangulation, and, with thick, rich description, also helped to reinforce qualitative validity and support Sara’s practice.

When we began to informally discuss our experiences with The Challenge and text-based list learning, we immediately found overlapping preliminary

discoveries regarding student engagement and vocabulary development. We maintained a record of our conversations, and given our various sources of data across our two settings, we pre-coded our data (Layder, 1998) by highlighting key quotes from student interviews and think-alouds, seminal field note entries, and debriefing notes about teaching and pedagogy. Preliminary codes, such as “enjoyment,” “new word identification,” and “independent learning,” supported conversation about the data and our teaching approaches and, in turn, led to additional iterations of coding and our theming of data (Saldaña, 2012). As such, we parsed the data and included codes related to adolescents’ attitudes toward learning vocabulary, engagement in online settings, knowledge of language, and moments of applied understandings.

Examining the Two Settings: From Classroom Structure to Applied Vocabulary Knowledge

The structure of the after-school tutoring sessions and the high school English classes involved four features of gaming: competition, point accumulation, immediate formative feedback, and the public recognition of improvement. Though our content may have been thematically different—Sandra focused on SAT vocabulary and Sara addressed literature-based vocabulary—we both capitalized on online gamified approaches to support student-centered learning.

The after-school tutoring sessions involved dyads of tutees working with one graduate tutor as they visited sites, such as Dictionary.com, Wikipedia.com, Merriam-webster.com, and Vocabulary.com in attempts to answer SAT-based reading comprehension and multiple choice questions. During the sessions, students examined nuanced language and assorted definitions, as well as context clues that would indicate the missing words’ meaning. Though The Challenge was planned to be part of only two sessions, students, like Margaret (all names are pseudonyms), returned to it throughout the semester in an effort to recall words and apply definitions. More specifically, Sandra asked the students to consider an answer to the question, “Orangutans are _____ apes. They typically conduct most of their lives up in the trees of tropical rainforests.” With a sense of urgency, Margaret asserted, “There was a word that meant like being up in the trees but I can’t remember what that word was. Can I go in The Challenge?” As

Margaret searched the words listed under “Words I’m Learning” in the “Progress” tab on the site, she exclaimed, “Yes! That’s my word. Oh my G-d. Oh this is great. *Arboreal*. Now I got it. That was easy.” Margaret took the initiative to use her learning history from the online game to help her recall the missing word—a step that demonstrated an application of her understanding of the word *arboreal* in a different context.

Each of the five sessions included competitions among the dyads that centered on traditional SAT questions, and the adolescents worked with each other and/or their graduate tutor to answer online and offline vocabulary-based questions. In her November 15th reflection, eleventh grader Ashanti explained that “Vocabulary taught in school is strictly based on definition. These vocabulary sessions are much more interactive.” Daphne, Ashanti’s graduate tutor, recorded such online and offline interaction in her field notes, explaining that Ashanti and her partner would “take turns and let each other work independently and together.”

In Sara’s high school classroom, students engaged in collaborative challenges that, ultimately, served as a formative assessment of students’ knowledge of vocabulary and literature. Prior to and during the class’s reading of Hemingway’s *A Farewell to Arms*, Sara entered novel-based vocabulary into the website’s list-making tool. As a result, the students played a game that had the same structure as The Challenge but was specific to the literature they were reading. The class worked in teams that students named according to elements of Hemingway’s novel, including “The Nurses,” “Rotten Game,” and “Rain.” With the game projected onto the dry-erase board, the otherwise independent activity became a collaborative competition. Having already accessed the online program outside of class, all the students were fully prepared for the game and the various opportunities to apply words to nuanced contexts. Furthermore, in the spirit of gamified learning, Sara included surprise bonus questions, drawing from one of the SAT word lists featured on the site.

During one in-class game that involved The Challenge, Antonio, who often looked slightly bleary-eyed during the 8 a.m. class, was rapt and eager to answer, leaning intently forward toward his teammates and whispering loudly, “It’s *elated*! I’m sure!” His team was responding to the following Challenge question: “If you’re _____, you’re more than just happy—you’re over the moon... Like the way you feel

after winning a scholarship to an Ivy League school or mastering a back handspring.” Indeed, the site’s amusing quips intrigued the class and made the information accessible; the students even laughed about the site’s “wicked sense of humor.” The flash cards of the past certainly never elicited such reaction.

Gamification Promoting Students as Agents of Their Own Learning

The gamified features of The Challenge added yet another layer to vocabulary learning experiences, as students remained aware of their proficiency and, thus, could be agents of their own progress. The eleventh grade students across both studies appeared to have a degree of control over their vocabulary learning because, outside of class game play, they could choose the time, the frequency, and the duration of their use of online vocabulary sites, and they were publicly rewarded for their progress both in class and on the site’s leaderboard.



Table 1 features after-school attendees Kendra’s and Nora’s Challenge experiences between October 2011 and January 2012, and it highlights how, outside the classroom, the application of gaming principles included playful engagement, self-directed learning, immediate feedback, and public reward. Further, as is evidenced by the frequency and duration of both girls’ game play beyond the after-school sessions, prolonged involvement is an essential factor in achievement. Both Kendra and Nora averaged about 17-minute games, and Kendra only played an hour more than Nora. However, Kendra, who earned more points and a higher status than Nora, played The Challenge more than twice the number of times that Nora did, suggesting that the sustained, repeated

engagement that is key in traditional vocabulary learning (Stahl & Fairbanks, 1986) also can be essential to vocabulary development in online spaces.

Unlike school, where Kendra said she “didn’t learn any new words,” the online space of The Challenge was “faster and it seems reliable. Plus it gives me definitions that I can understand.” Online resources typically involve self-directed learning opportunities, and students, like Kendra, were in control of their game play and vocabulary development. Kendra might have earned “Brainiac” status, but her true reward occurred when she realized how much she had learned: “When I understand the word so well that I can use it in my own vocabulary, that is my victory.”

The more time students spent playing The Challenge and answering questions correctly, the more they earned points and obtained multiple status levels, such as “Hot Shot,” “Savant,” or “Guru,” working their way to the highest of the 20 levels, “Word Czar.” In this way, gamification motivated students to engage in sustained play. Along the way, players could collect up to 43 awards akin to Boy/Girl Scout Badges and boast progress, such as “Perfect Round” or “50 Words Mastered,” all of which became part of students’ overall profile, which they could and would share with others. One of Sara’s international students, Vera, announced that she had achieved “Prodigy” status, joking that her roommate held only the status of a “Hotshot.” Vera said she might just reach one million points come the summer, giving her “Sesquipedalianist” status! The students were saliently motivated; indeed, they were practicing the words solely on their own initiative. At the moment, all the students seemed awash in a “Word Czar”-glow.

TABLE 1 Frequency and Duration of Kendra and Nora’s Challenge Game Play

The Vocabulary.com Game							
Student	Frequency of Play	Total duration of play (minutes)	Average duration of play	Duration range of sessions (minimum to maximum)	Points Earned	Earned Status	Status Crest
Kendra	29 Times	494 minutes	17-minute games	30 seconds–64 minutes	143,200	Brainiac	
Nora	13 Times	435 minutes	16.5-minute games	1.4 minutes–242 minutes	90,925	Prodigy	

Competition and reward motivated most students to play, but there were some who were not as intrigued by the gamification or multimodal features of The Challenge. These students, who were less lured by points, achievements, and “Hotshot” status, talked about how difficult some of the questions were, referencing the various ways the words were used; the site set the words in many different contexts, including sentences from credible sources and literature, such as *The New York Times* or Sinclair Lewis’s *Babbitt*. Nhan, who, on his own volition, also began to use the site for other features, including SAT lists, commented on the site’s myriad offerings: “You have to know the word in many ways and you have to be able to spell it, too.” In this way, the online vocabulary game called students’ attention to their own word knowledge and the complexity of language, and it required them to problem solve and discover appropriate meanings.

Student Behavior and “Flowing” Interest-Driven Learning

Gamification, or use of game features to support problem solving, involves challenge and reward. But, as noted previously, it also involves a degree of control. Many adolescents were especially keen to customize vocabulary lists as they adopted and adapted their online vocabulary sessions to help them learn school-related information. The gamified approach to vocabulary afforded students, like after-school student, Tanya, “to play Vocabulary.com more regular[ly] because I can add any words you want to learn from a vocab list that my teachers give me.” This sentiment was echoed by her cohort, Abigale, who liked “the option [to] add any words you want to learn from a vocab list that my teachers give me.”

In addition to the freedom to customize their online word learning and game play, many students enjoyed learning vocabulary through a gamified approach because The Challenge was fun. Perhaps Csikszentmihalyi’s (1990) concept of “Flow”—or “joy, creativity, and the process of total involvement with life” (xi)—best helps to explain students’ sustained engagement and interest in developing and diversifying their lexical repertoire. In *Reading Don’t Fix No Chevys*, Smith and Wilhelm (2002) discussed flow in terms of students’ out-of-school experiences, and they explained how Csikszentmihalyi’s concept is rooted in control,

competence, appropriate challenges, immediate experiences, and “clear goals and feedback” (pp. 28–30).

Flow is an inherent element of gamification (Zichermann & Cunningham, 2011), and the sentiments of students involved in using online vocabulary resources and playing The Challenge revealed that the five categories—control, competence, appropriate challenges, immediate experiences, and clear feedback—were part of their overall playing and learning experience. As tutee Jocelyn explained in an e-mailed reflection, “I think I have the tools and skills to teach myself vocabulary because I can use Vocabulary.com as a game to learn vocabulary because its [sic] fun and entertaining so I learn better when I’m using an interactive source rather than simply making flash cards.” In other words, the interactivity and extended engagement related to the online game provided Jocelyn another avenue for understanding nuanced language.

Further, when another tutee, Margaret, began to master a word, she experienced joy and increased competence from the game’s immediate feedback. In a weekly reflective e-mail, she relayed this excitement: “When I was able to master a word that I continually got wrong on the challenge or when I got ten in a row my heart skipped a bit cause it seemed as [if] I was finally getting it.” Yip and Kwan (2006) also found that students enjoyed learning vocabulary online because of “positive reinforcement” features and “the simplicity of the games also enabled them to develop confidence” (p. 245). However, unlike the websites in Yip and Kwan’s study that “could not offer [students] a continuous challenge” (p. 245), contemporary innovations and analytics presented students, like Margaret, the ability to learn from their mistakes. Thus, adaptive technologies, such as those used in The Challenge, were specific to each player, scaffolding and varying the assessment according to the player’s level of mastery.

Such individualization, interaction, and enjoyment with online vocabulary learning also was evident when students’ energy and performance level in Sara’s high school English class increased in regard to vocabulary study. The average vocabulary quiz score from the first two novels was a robust 92 as compared to the low B average of prior quizzes during the year. Likewise, when the after-school tutees began mastering words in online and offline assessments and discussions, it became apparent how online resources

and their gamified components could be effective, complementary tools for teaching vocabulary.

Where Do We Go From Here?

Now that we are more than a decade into the 21st century, we need to consider the technologies that are most effective and resilient to the quick fate of obsolescence. In this article, the high school students' experiences with online vocabulary resources underscore the benefits of technologies that not only are continuously updated (unlike static vocabulary workbooks), but also are adaptive to students' interactions with them. The inclusion of a game, such as *The Challenge*, afforded students opportunities to become motivated, self-directed learners who seemed to enjoy receiving immediate and relevant feedback, earning points and status levels, and engaging in independent learning.

In eight years of teaching high school English, Sara had yet to have students, even the most motivated ones, ask when she would be assigning the next vocabulary unit. Overall, the students' sentiments revealed their sustained interest and enjoyment when interacting with online vocabulary resources and engaging in gamified learning. Students' burgeoning confidence and their developing repository of lexical skills promise to help them succeed in school, in life, and in the digital age.

Though the gamified elements of web-based software, such as *The Challenge*, provided immediate, individualized feedback that helped students acquire vocabulary knowledge on their own, the success hinged on the cohesion of the online and offline worlds. Digital features supported, not supplanted, instruction, and the features of the online space influenced instructional design. The examples from the two studies underscore how the independent, collaborative, and flexible conditions of the online space can be extended into the classroom, thereby placing the students' performance—not the text or the teacher—at the center of learning.

Beach (2013) notes that a digital text can offer immediate feedback and interactive learning opportunities, but the affordances are in the teacher's mediating activity, not the digital text itself. We go one step further to acknowledge how the affordances of the digital text and the teachers' practice can work in concert to provide layers of effective learning experiences. Ultimately, our examination of gamified

approaches to learning vocabulary suggests that contemporary education should include multimodal vocabulary instruction that coheres in-and-out-of-school experiences and nurtures more individualized, student-driven scholarship that empowers students to be agents of their own learning.

Take Action

STEPS FOR IMMEDIATE IMPLEMENTATION

The following are suggestions for ways to use *The Challenge* in the classroom. There are other sites beginning to offer vocabulary-based games, such as the United Nations World Food Programme website, freerice.com (where students donate rice by answering vocabulary questions correctly). Given that we both used *The Challenge* in our classroom settings, we recommend the following:

1. Search for or generate a word list: On www.vocabulary.com, select the "Vocabulary Lists" tab. Use the search box to "Search for Vocabulary Lists" from a bank of thousands of ready-made lists or click the "Create a vocabulary list" button to develop a custom word list by inputting new words or selecting words from an existing list. **Tip:** To share a word list with your students, give them the unique URL for the list.
2. Ask students to create free log-in accounts for www.vocabulary.com and to locate the current list (e.g., "Narrative of the Life of Frederick Douglass," Vocabulary from Chapters 1–4). **Tip:** These initial steps ward off the excuse of "I can't find the site or words!" or "What words should I learn?"
3. Ask students to "learn this list." Perhaps assign the list on Monday with the intention of reaching list mastery level on Friday. **Tip:** Check students' progress online as well as gauge students' word acquisition through an in-class game.
4. On vocabulary game day, ideally divide students into groups of four. Project the [Vocabulary.com](http://www.vocabulary.com) site on a screen or an interactive dry-erase board. **Tip:** Have a three-minute hourglass or timer handy, and ask a trustworthy student to act as timekeeper!
5. Click on the respective list and on "learn this list," asking the first group the question. If one word is particularly troubling, try using the "look up" feature so students can see the word in various

usage examples. **Tip:** Allow each team one “Word in the Wild” and one “50/50” per game.

6. Add a metareflective component, asking students to consider which question types are the most helpful in prompting recall of word knowledge. **Tip:** Have students keep a word-learning log. What strategies do they use when a word just doesn’t seem to “stick”?
7. Encourage students to develop their own word lists and become independent vocabulary learners over time. Self-selecting vocabulary empowers students to be in charge of their own word learning. **Tip:** Using the aforementioned directions to generate a word list, show students how to create a list of unfamiliar words from their reading. Then suggest students use this list as a running vocabulary log, as well as a source of review by choosing to “learn this list” in game mode.

References

Beach, R. (2013). Presidential address: Understanding and creating digital texts through social practice. Literacy Research Association 63rd Annual Conference. Dallas, TX.

Beck, I.L., McKeown, M.G., & Kucan, L. (2002). *Bringing words to life: Robust vocabulary instruction*. New York, NY: Guilford.

Clark, C., & Rumbold, K. (2006). Reading for pleasure: A research overview. *National Literacy Trust*, 1–35.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: Harper and Row.

Egenfeldt-Nielsen, S., Smith, J.H., & Tosca, S.P. (2008). *Understanding video games: The essential introduction*. New York, NY: Routledge.

Guichon, N., & McLornan, S. (2008). The effects of multimodality on L2 learners: Implications for CALL resource design. *System*, 36(1), 85–93.

Gee, J.P. (2007). *What video games have to teach us about learning and literacy* (2nd ed.). New York, NY: Palgrave Macmillan.

Gómez, M.V., & Kuronen, M. (2011). Comparing local strategies and practices: Recollections from two qualitative cross-national research projects. *Qualitative Researcher*, 11(6), 683–697.

Kapp, K.M. (2012). *The gamification of learning and instruction. Game-based methods and strategies for training and education*. San Francisco, CA: Pfeiffer. Print.

Layder, D. (1998). *Sociological practice: Linking theory and research*. London, England: Sage.

Marzano, R.J. (2004). *Building background knowledge for academic achievement: Research on what works in schools*. Alexandria, VA: ASCD.

Marzano, R.J., & Simms, J.A. (2013). *Vocabulary for the common core*. Bloomington, IN: Marzano Research Laboratory.

Nagy, W., & Townsend, D. (2012). Words as tools: Learning academic vocabulary as language acquisition. *Reading Research Quarterly*, 47(1), 91–108.

Saldaña, J. (2012). *The coding manual for qualitative researchers*. Thousand Oaks, CA: Sage.

Smith, M.W., & Wilhelm, J.D. (2002). *Reading don't fix no chevys*. Portsmouth, NH: Heinemann.

Smith-Robbins, S. (2011). “This game sucks”: How to improve the gamification of education. *EDUCAUSE*, 46(1).

Squire, K. (2012). *Video games and learning: Teaching and participatory culture in the digital age*. New York, NY: Teachers College Press.

Squire, K., Giovanetto, L., Devane, B., & Durga, S. (2005). From users to designers: Building a self-organizing game-based learning environment. *TechTrends*, 49(5), 34–42.

Stahl, S.A., & Fairbanks, M.M. (1986). The effects of vocabulary instruction: A model based meta-analysis. *Review of Educational Research*, 56(1), 72–110.

Yip, F.W.M., & Kwan, A.C.M. (2006). Online vocabulary games as a tool for teaching and learning English vocabulary. *Educational Media International*, 43(3), 233–249.

Yoshii, M. (2006). L1 and L2 glosses: Their effects on incidental vocabulary learning. *Language Learning & Technology*, 10(3), 85–101.

Zichermann, G. (2012, May). Gamification—Game thinking to solve problems [Video file]. Retrieved from <http://vimeo.com/46092961>

Zichermann, G., & Cunningham, C. (2011). *Gamification by design: Implementing game mechanics in web and mobile apps*. New York, NY: O'Reilly Media.

More to Explore

CONNECTED CONTENT-BASED RESOURCES

WEBSITES

- ✓ www.dictionary.com
- ✓ www.freerice.com
- ✓ www.vocabulary.com
- ✓ www.vocabulary.co.il
- ✓ www.manythings.org/vocabulary

BOOKS

- ✓ McGonigal, J. (2011). *Reality is broken: Why games make us better and how they can change the world*. New York, NY: Penguin.
- ✓ Salen, K., & Zimmerman, E. (2004). *Rules of play: Game design fundamentals*. Cambridge, MA: MIT Press.
- ✓ Zichermann, G., & Linder, J. (2013). *The gamification revolution: How leaders leverage game mechanics to crush the competition*. New York, NY: McGraw Hill.