Using VoiceThread to Promote Learning Engagement and Success for All Students

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Consider these three students: Jeremy, who is easily distracted and who has difficulty staying on task in social studies; Brad, who has specific learning disabilities that place him at risk of dropping out due to lack of motivation and fear of failure; and Angelina, who has received interventions through several grade levels to address her struggles with assignments and assessments. This article shows how a web-based learning tool can boost the learning skills and motivation of these students and many others as they work with multimedia to explore subject areas, express their ideas, and share information—and all at their own pace and learning level.

Current trends in education emphasize the importance of meeting the needs of all learners (Capper & Frattura, 2009; Levy, 2008). To this end, educators often make herculean efforts to engage students, motivate them, and differentiate instruction for students who struggle with the general curriculum and instruction. These students are often identified as at risk of failure or as having a disability. The complex demands of the secondary curriculum are partic-

ularly problematic for students at risk or those who have a disability as they struggle with basic reading and written expression skills (Lerner & Johns, 2009).

By the time many students reach high school they have experienced so

much school-related failure that they possess little motivation or desire to learn and have developed powerful habits of relying on their teachers for work completion (Lerner & Johns, 2009; Mercer & Mercer, 2005). For these reasons, in addition to building student knowledge and skills, educational strategies for all students should be aimed at increasing school engagement, motivation, and learner independence. Innovative technological tools, programs, and software can be used to promote student engagement, motivation, and ultimately enhance the quality of the learning experience for students with disabilities (Goldberg,

Russell, & Cook, 2003; Myers & Beach, 2004; Nicolaou, Nicolaidou, Zacharia, & Constantinou, 2007).

One computer tool, called Voice-Thread (http://voicethread.com), can be especially helpful at increasing student engagement and motivation while

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activating learning. VoiceThread, an interactive, multimedia slide show tool, enables users to hold conversations around images, documents, and videos. This tool is easily accessible, cost-effective, applicable across most subject matter and grade levels, and adaptable to many learning settings. Educators can use VoiceThread in general education, self-contained, resource rooms, and inclusive settings in large group, small group, and one-on-one learning environments. This computer tool allows students to participate and collaborate in many ways at their own pace. Let's look at some ways that VoiceThread can help students.

Learning Challenges for Students With Special Needs

Important ingredients for learning success in school include the ability to engage and sustain attention, participate actively, maintain high levels of motivation, and complete assigned tasks. Yet many students at risk and students with disabilities experience difficulties in these areas. For example, students with attention deficit hyperactivity disorder (ADHD) or a learning disability (LD) often struggle with attending in class and completing assignments (Lerner & Johns, 2009). Moreover, students with emotional or behavioral disorders (EBD) often demonstrate low levels of school or task engagement and show little motivation for learning (Lerner & Johns, 2009). Active learning is important for learning success (Lerner & Johns, 2009); yet, educators often consider students at risk or those with disabilities "passive learners."

Students with EBD may find learning especially difficult. In addition to expected social, emotional, and behavioral deficits, these students often exhibit low motivation and passive learning styles (often a manifestation of learned helplessness; Lerner & Johns, 2009). Not surprisingly, students with EBD are at increased risk for academic difficulties and low achievement (Jolivette, Stichter, Nelson, Scott, & Liaupsin, 2000). When compared to students with other disabilities, students with EBD demonstrate lower academic grades and graduation rates, more failed courses, and higher rates of grade level retention (Nelson, Benner, Lane, & Smith, 2004; Walker & Severson, 2002). Moreover, research suggests that students with EBD, as a group, perform consistently lower on IQ and achievement measures (Kauffman & Landrum, 2009). These findings mean that for many students with EBD, learning will be a difficult and often unpleasant experience. When combined with social, emotional, and behavioral issues, academic/ learning difficulties put these students

Figure 1. The VoiceThread Interface

at increased risk for school disengagement, school failure, and dropping out (Kauffman & Landrum, 2009). Though VoiceThread will not address the learning needs of every student in every situation, its interface and feature set are well-suited for promoting student engagement and motivation as well as for helping students develop as independent learners.

Overview of VoiceThread

Over the past few years computer scientists have designed many Web 2.0 tools to help users collaborate, communicate, and create content both online and off. *Wikipedia,* itself a classic example of a Web 2.0 technology, provides helpful information about how new tools can build social networking sites, information-sharing sites, and even individual "wikis" that teachers and students can make for their own use (see http://en.wikipedia.org/wiki/Web_2.0).

VoiceThread (http://voicethread.com) is one of many Web 2.0 tools created to help users communicate and collaborate around a variety of topics. The 2009 K–12 edition of the *Horizon Report* (http://wp.nmc.org/horizon-k12-2009/), an annual report created

through the collaboration between the New Media Consortium and the Consortium for School Networking, lists VoiceThread as a tool to watch because of the opportunities it provides as a collaborative learning environment (Johnson, Levine, Smith, & Smythe, 2009).

One of the easiest ways to learn more about VoiceThread is to view the introductory VoiceThread (http://voicethread.com/#q.b409.i848804) created by the developers of this tool. The screenshot in Figure 1 is taken from this introductory thread and gives an

indication of how a VoiceThread is arranged.

To create an individual VoiceThread, users can upload any combination of images, documents (e.g., from Word, Acrobat [PDF], Excel, or PowerPoint), and video clips to arrange these elements into a slide show. Teachers can then add comments to each slide in the VoiceThread by several different methods including typed text or recorded voice or video. Teachers can make a VoiceThread public, allowing other people to add their own comments to the slides, or set the VoiceThread to private, restricting comments to only invited users. Through this process, teachers can facilitate conversations around a series of images, videos, or an entire PowerPoint presentation with their students and provide them an opportunity to share their voice, literally, in the discussion in multiple ways.

VoiceThread Classroom Account

The basic user account is free but only allows for the creation of up to three VoiceThreads. For a nominal yearly fee (around $60), teachers can purchase a classroom account that includes many attractive options including the creation of unlimited VoiceThreads by teachers and students. The first benefit of a classroom account is that it allows teachers to register students (up to 100) for free and without the need for working e-mails for each individual student. The need for a valid e-mail address is often a requirement of many of the new Web 2.0 technologies available online. This requirement is problematic for teachers working with K–12 students because many students don't have their own e-mail or there is legitimate concern that if valid e-mail addresses are used it will result in the individual students receiving unwanted spam.

Second, the classroom account provides teachers access to the entire class list of registered students so changes to individual user names and passwords can easily be made when needed. This feature is helpful should students forget their user names or passwords. It also provides the teacher an oppor-tunity to demonstrate to students the importance of creating secure user names and passwords, which is an important part of being a safe digital citizen.

The third main benefit of a class-room account is that all registered students within a given class can create their own VoiceThreads to be shared with their peers. Any VoiceThread cre-ated within a classroom account is automatically set to private and can only be shared with the other class members. Students do not have the option to make their VoiceThreads pub-lic, which adds another layer of secur-ity to this engaging tool. Providing stu-dents with the option to create their own VoiceThreads allows them to take the lead in an online and interactive discussion with their classmates. By creating their own VoiceThreads, stu-dents can demonstrate their under-standing of different topics and sub-jects in an innovative way through the use of their own voice, or typed text, accompanied by imagery and video where appropriate.

Another feature included with all VoiceThreads is the ability to moderate comments. If a teacher turns the com-ment moderation feature on it means that all comments made by students, whether typed or recorded voice/video, must first be viewed and approved by the teacher before they are made avail-able to the rest of the class. One obvi-ous use of this feature is to ensure that inappropriate comments are deleted before being shared. The comment moderation tool could also be used to facilitate assessment of student knowl-edge through VoiceThreads. For instance, a teacher might want to pro-vide students with a series of questions or prompts within a VoiceThread slide show, but not want the students to be able to read or listen to their class-mates' responses before submitting their own comments. The teacher could then use the comment modera-tion function and require all students to respond fully to each prompt before allowing students to see the comments made by their peers. The comment moderation would force students to come up with their own responses rather than allowing them to wait for their classmates to comment and then just copying or restating those responses.

VoiceThread also has a "doodle" feature that allows users to draw on each individual slide whether it is an image, video, or document. This means that as students are talking about something specific in the slide they can highlight that part of the image by drawing a circle around it or otherwise drawing attention to it with the doodle tool. Doodle markings are not permanent and will fade away after a short period so that the individual slide does not become hopelessly marked up or obscured by multiple doodles or drawings.

The actual technology required to create and participate in a Voice-Thread is minimal. At the least, a computer with Internet access is needed. No software needs to be installed; VoiceThread is web based and runs in a variety of browsers (e.g., Explorer, Firefox, Safari) and on multiple operating systems (Windows, Mac, Linux). Students can participate by typing their comments so micro-phones are only necessary if voice-recorded comments are desired. Inex-pensive headset/microphone units can be purchased ($5–$12 per unit) either online or at a variety of office supply, electronics, or school supply stores to allow students to record their comments.

Using VoiceThread in the K–12 Classroom

One of the greatest benefits of Voice-Thread is the flexibility of the tool. Educators can use it in many educa-tional settings with students in general education, with students considered at risk, and with students with disabili-ties. Students can participate in learn-ing activities designed within the VoiceThread environment as part of a whole class, in small groups, or inde-pendently. Since the tool is web based, it can be accessed in a classroom, com-puter lab, at home, or anywhere else an Internet-enabled computer can be found. In addition, VoiceThread serves as an archive where comments,

Figure 2. "Story Starter" VoiceThread

conversations, and images are stored and made available for access at a later time. Students can revisit topics as needed or gain access to learning activities they may have missed. Finally, the technical skills required by Voice-Thread are the same regardless of the learning activity, content area, or grade level. Once students learn how to use VoiceThread, they are able to use this technology over and over again for a wide range of purposes. Because of the flexibility of the tool, and the ability to use it across grade levels, content areas, and with a multitude of learners, the time and effort invested to learn VoiceThread can pay great dividends in student learning.

The possibilities for how teachers can use VoiceThread to advance the K–12 curriculum are nearly limitless. The following are just a few ideas of what teachers can do across the different content areas.

Language Arts

A VoiceThread could be used to facilitate a prewriting exercise. The teacher could select a series of images that are representative of a particular genre or topic and load them into a VoiceThread slide show. For each picture, the teacher could create a story starter prompt to engage students in thinking about what story is being told in that particular image. The teacher could then invite students to continue the story by adding details, plot elements, and characters based on what they see in the picture and their preexisting knowledge of the topic and genre. Students could add their extensions of the individual stories by either typing or recording comments for others to

hear and build on. Figure 2 shows an example of a VoiceThread created for this purpose. The faces along both sides of the main image represent different students who have made comments.

Science

To help students review the life cycle of a butterfly (or any other organism they may be studying), a teacher could create a VoiceThread with images that depict the different stages of development. Students could be prompted to name each stage and tell what is happening to the organism at that stage in order to demonstrate their knowledge on the topic. Comment moderation could be used to ensure that students aren't able to read each other's comments before posting their own.

Figure 3. "Learning About Culture" VoiceThread

Mathematics

Teachers could upload a series of documents or images each with its own math problem for the students to solve. Students could then be asked to use the doodle tool and audio comment feature to solve the individual problems and record their thoughts as they work through the problem-solving process. This activity would allow the teacher to not only see the way each student solved the problem but also hear the thought process that was applied, which would provide greater insight into how each student was approaching the problem.

Social Studies

When learning about new cultures, students and teachers could construct a VoiceThread to visually represent the customs, clothing, housing, people, and religion of that culture. The teacher could include a prompt with each image pointing out various aspects of the culture represented and engaging students in a variety of discussion topics that allow them to share their ideas, make comparisons, ask questions, explore, and expand their knowledge about that topic. Figure 3 provides an example of a slide from a

VoiceThread created to help students learn more about the Spanish culture.

Educational Benefits of VoiceThread

VoiceThread enables teachers to capitalize on student learning strengths and preferred learning modalities by encouraging active participation in the learning process. (See box, "Student Profiles: Putting VoiceThread Into Practice.") Students who are often considered passive learners can become more actively involved through an ongoing interaction with the instructional content as well as their peers, and this active involvement can

Student Profiles: Putting VoiceThread Into Practice

The easiest way to grasp the power of a tool like Voice-Thread is to view it being used to help specific students. The following sections present a series of hypothetical profiles representing students commonly found in a K–12 setting. These profiles do not represent actual students, nor do they encompass all types of academic or social/behavioral issues presented by students with disabilities or those considered at risk. The examples, however, include a broad range of learning difficulties that many students struggle with in school. With each profile is a link to a VoiceThread designed to teach a particular content area and a description of how that particular VoiceThread could be used to help address the identified needs of the profiled student.

Jeremy

Jeremy is a seventh grader who has been diagnosed with ADHD. In the classroom, he is impulsive and hyperactive. He seems to be in constant motion, having much difficulty sitting still for lessons or activities. Jeremy is easily distracted and has particular difficulty focusing on the teacher during instruction. He seems to be focused on everything but the lesson/activity.

During instruction, Jeremy blurts out at inappropriate times, often responding incorrectly to teacher probes. When this happens, Jeremy becomes embarrassed and angry. This behavior generally follows with a verbal outburst (e.g., "This is stupid!" or "Why do we have to do this, anyway?" or "You can't make me do this work.").

Jeremy challenges teachers and wants to do things his way. He frequently tries to negotiate with teachers about assignments and classroom expectations. Jeremy also struggles socially. In fact, he experiences so much difficulty getting along with classmates that he cannot work in group settings and must work independently on most tasks.

Teachers find educating Jeremy in a general classroom challenging and expend a lot of effort managing the problematic behaviors associated with his ADHD. Jeremy's strengths include average reading and writing skills. Moreover, he seems to respond well to novel learning environments.

Jeremy's social studies teacher is planning a series of lessons on the impact of humans on the environment and has decided to use VoiceThread to support these lessons. In this particular VoiceThread (http://voicethread.com/share/696415/), students are shown different pictures that show examples of how humans affect the environment. There is an audio-based comment associated with each picture prompting students to provide a response either by typing or recording their voice. Comment moderation is turned on initially so that students are not able to see one another's comments. This particular VoiceThread is helpful for Jeremy in several ways.

- The VoiceThread can help focus Jeremy's attention; although this thread will be used by all students in Jeremy's classroom, Jeremy's teacher adapts the lesson content (only for Jeremy) to eliminate all unnecessary information from the computer screen (e.g., advertisements, extra links, text or images, comments posted from other students) so that Jeremy's focus is on the singular task at hand.

- Jeremy's teacher adjusts the lesson so that Jeremy is able to choose his response mode; he may either write or record his responses.

- Allowing Jeremy to work independently on the computer helps reduce the social problems that impede his learning in large- or small-group environments.

- Using the computer appeals to Jeremy's desire to use novel and nontraditional learning environments.

- The VoiceThread gives Jeremy *several* opportunities to respond during instruction, allowing him to be actively involved compared to other learning formats.

- Using the VoiceThread, Jeremy can work at his own pace; and he can change his responses as needed.

- Jeremy's teacher moderates his responses so that they are posted only when they have been screened for accuracy; this helps reduce Jeremy's frustration and embarrassment previously caused by inaccurate responses blurted out in front of the entire class.

Brad

Brad is in the 11th grade. He has received special education services for a specific learning disability for much of his school career. He has a long history of school failure and is extremely unmotivated in the classroom. Brad earns low grades and needs high levels of teacher direction, encouragement, and assistance to complete assignments. He has low skills and needs high amounts of repetition for learning. He is often unwilling to try new things and has low self-esteem, lacking academic and social confidence. Brad especially dislikes writing tasks and finds paper-and-pencil activities that involve writing and responding nearly impossible. He doesn't participate in class discussions and is passive during instruction. Brad dislikes school, and his special education teacher is concerned that he'll drop out.

To encourage Brad's participation in class and facilitate his development as a writer, his teacher decided to use VoiceThreads to allow the students to practice persuasive writing. To do this, the teacher created a classroom account and gave students permission to create their own Voice-Threads. All students had an opportunity to collect a series of pictures representing a current issue in the news that each of them wanted to focus on in their persuasive writing. The pictures were then uploaded to his/her individual VoiceThread, and the students recorded themselves making

different points to support their opinions. A sample student VoiceThread, similar to what a student such as Brad might create, can be found at http://voicethread.com/share/ 696848/. There are many benefits to Brad's being able to express himself this way.

- Brad finds using a computer motivating and fun; he seems to prefer technologically based instruction over traditional classroom instruction.

- Brad likes working independently; he happily avoids classroom discussion and favors interaction with the computer over peer interaction.

- Brad's teacher can adjust the writing activity to meet Brad's learning needs by providing individual comments or feedback where necessary, giving Brad additional time and helping to narrow the focus of his persuasive argument.

- Brad can more accurately demonstrate his learning through oral presentation, and his low writing skills no longer inhibit his opportunities to participate.

- Brad can listen to a portion of his argument and decide to delete and rerecord it, making the process of revising his writing much more manageable.

- Using VoiceThread, Brad can work at his own pace, making changes as needed.

- The VoiceThread facilitates a highly interactive writing process between teacher and student, which best suits Brad's unique learning needs while at the same time encouraging him to work more independently.

- Once Brad feels comfortable with his persuasive argument, he can share it with his classmates through VoiceThread to get their feedback and to help develop his confidence as a learner.

Angelina

Angelina is a fourth grader in every way except that she struggles in school with learning. School personnel have identified her as "at risk" for a learning disability, and they are trying to address her academic difficulties through interventions aimed at strengthening her reading and language skills. Teachers describe Angelina as a pleasant and conscientious student. She is highly motivated and wants to do well in school. She generally earns low grades on assignments, however, and does poorly on assessments. Peer tutoring has been helpful, though Angelina seems to learn best when interacting with teachers.

To help Angelina participate more fully in discussions about a novel her class is reading, her teacher created a VoiceThread. The purpose of this VoiceThread (http:// voicethread.com/share/709636/) was to allow Angelina to access additional information about the book to support her comprehension and to give her an opportunity to express her understanding about the different characters and plot

points in the novel. The VoiceThread created for Angelina includes four slides from a PowerPoint presentation on the book *Holes* by Louis Sachar (Sachar, 2010). As the students progress through the book, more slides will be added to the thread. Many positive outcomes could result from Angelina using a VoiceThread in this way, including the following:

- After building confidence in her comprehension of the novel, Angelina is more willing to participate in small group activities.

- Angelina feels more engaged in the reading of the novel because she is better able to follow along with the characters and plot.

- The teacher can individualize the instruction to meet Angelina's specific reading and language needs, focusing on the elements with which Angelina is most likely to struggle.

- Angelina can work at her own pace and not be pressured by the speed at which other students are working.

- Using the VoiceThread, Angelina receives immediate feedback on questions she has about the book.

- Providing slides of information progressively, rather than all at once, makes the task less overwhelming because Angelina only has to focus on one or two discussion points at a time.

contribute to increased learning success (Lerner & Johns, 2009). Using VoiceThread, students may receive instructional "input" through auditory means (e.g., use of teacher recorded messages or peer recorded messages) and through visual means (e.g., reading text on the screen and looking at pictures/graphics, photographs, images, and video clips). Similarly, student output could include verbal expression (i.e., students record their responses/interactions) or written expression (i.e., students type their responses). Teachers can differentiate the learning experience for students by structuring the use of these input/ output modalities to best meet the needs of the learner.

Another benefit of VoiceThread is that it is specifically designed to promote the collaborative development of knowledge by providing students the opportunity to share their voice, quite literally, and express opinions regardless of their ability. This is a perfect example of the kind of epistemological shift from more traditional classroom instructional practices that Dede (2008) argued is possible through the effective use of Web 2.0 technologies. As stu-

ticipate in collaborative knowledge creation within the VoiceThread environment can motivate students to do higher quality work since they know their projects, ideas, and comments will be publicly viewable by others (Smith & Dobson, 2009). Researchers have also shown that participation in VoiceThread projects has had a positive effect on student reading motivation for students in general education, as well as students reading below grade level (Zorigian, 2009) because students are able to read at their own pace and use visual cues and auditory commentary to support their reading.

Multimedia elements such as images, audio, and video can be used to stimulate student engagement and promote meaningful exploration of content (Hokanson & Hooper, 2000). Friedman and Lee (2009) have contended that using visual images to present content is a necessary pedagogical strategy when using VoiceThread to spark student interest and guide learning. This multimedia approach can be particularly helpful for students who often have trouble engaging in academic tasks because teachers can reduce the amount of visual clutter

learning disabilities, who tend to suffer from lower self-efficacy and may require more time to formulate their thoughts and contribute to the discussion (Hampton & Mason, 2003).

Another group of students that may benefit is shyer or less confident students. With VoiceThread, they no longer have to compete with their peers to respond during a class activity, which in turn provides them with increased opportunities to contribute.

Final Thoughts

The prevalence of free or low-cost tools such as VoiceThread has created opportunities for teachers to explore new strategies for providing instruction and new ways for students to demonstrate their understanding of concepts. Maintaining focus and attention, actively participating in the learning process, and being motivated to carry an academic task through to completion are all areas where at-risk students and students with disabilities might struggle. Using a tool such as VoiceThread can help Jeremy, Brad, Angelina, and other students realize a greater level of success in school. Such tools can provide a guided learning environment where students can participate in ways that are conducive to their individual learning styles.

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dents participate in these collaborative environments, they learn how to interact, communicate, and express themselves both confidently and respectfully as digital citizens (Jenkins, Purushotma, Clinton, Weigel, & Robison, 2006). In addition, online tools like VoiceThread allow students to participate in learning communities beyond the walls of their own classroom to engage in conversations around topics of mutual interest (Yildiz, McNeal, & Salika, 2009).

For many students who are at risk or who have disabilities, technologies such as VoiceThread can be used as a source of motivation (Mercer & Mercer, 2005). Providing opportunities to par-

within an individual thread. Representing content visually rather than predominantly through text can make the information more accessible to students who struggle with reading.

Unlike a live classroom discussion, where students are forced to think quickly and respond in front of a group, VoiceThread makes it possible for students to contribute to the discussion at their own pace and only after they have clearly formulated the thoughts and ideas they want to share. In essence, VoiceThread automatically creates wait time for students and allows them to dictate how much time they need to respond. This feature is particularly helpful for students with

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