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FROM THE TEAM

DEAR READERS,

Welcome to the summer issue of Education Magazine, covering the months of July and August. We will be back with Issue 7 this September, when we will have several big updates to share with you. At this time, we are excited to announce that Education Magazine is now available through our own Teachers Pay Teachers store. If you have TpT store credit or gift certificates, you can now use those funds to purchase individual copies of our magazine and special reports. To help you plan for the upcoming fall term, we have included a number of articles this month that focus on pedagogy and curriculum improvements. To boost student engagement and motivation, education guru Curtis Bonk from Indiana University describes his new TEC-VARIETY model. Need help meeting the new Common Core standards? Veteran educators Karen Larson and Gene Tognetti discuss some great CCSS tools that will help your students absorb the new standards. Before you begin using tablet computers to help special needs children, Scott Fowler has some valuable information on the risks and considerations involved in the use of these devices. Have you been tempted to use social media to engage your students and improve classroom communication, but afraid of the potential pitfalls? Education professor Doug DeWitt outlines some

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FROM THE TEAM

helpful strategies to safely leverage this powerful technology. We all know that American children are choosing engineering and science based careers at an alarmingly low rate. Kristen Paul, Salisbury University's STEM coordinator, discusses some novel outreach programs being used by the University to increase STEM engagement among K-12 students.

As always, we cover educational technology topics that you can't read about anywhere else. Claude Lafamme, Professor of Mathematics at the University of Calgary and the founder and president of Lyryx, describes how his company's novel user-interface and grading algorithms allow students to provide their full work when solving math problems and receive personalized feedback. In an eye opening article on Chinese educational technology, Yifei Wu describes the wide chasm that exists between well funded urban schools in China and rural schools that lag well behind.

Finally, if you get a chance to catch your breath this summer and you're looking for a good read, Cynthia Grills describes five, interesting possibilities.

Thank you again for taking time out of your busy schedule to read Education Magazine. If you have any questions, comments, or suggestions, feel free to drop us a line at support@education-magazine.org.

Have a great summer and see you again this fall, The Education Magazine Team

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Education Magazine Magazine

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Innovative Techniques

To Promote STEM Engagement

BY KRISTEN PAUL

n 1997, 3.8 million U.S. students entered the - ninth grade. Four years later, 2.7 million of them had graduated from high school; 1.7 million then enrolled in a two- or four-year college course. By 2007, only 233,000 of these students less than 14% of those who entered college, and a scant 6.1% of those who entered high school in 2007—had earned a bachelor's degree in a STEM major. Without addressing the issues of why

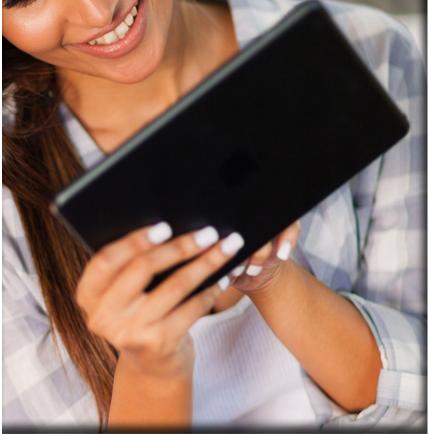
1.1 million of these students

failed to graduate from high

school, and a full million of those that did chose not to pursue post-secondary education, we must consider why so few students who matriculate to college choose to pursue STEM degrees. While attrition of students who initially choose STEM majors but do not earn a STEM degree is high—roughly 60%, with 35% of them leaving the major after their first year —the lack of desire and/or ability to pursue STEM fields begins long before a student graduates from high school.

Innovative Techniques To Promote STEM Engagement

Student interest in STEM and proficiency in math are the key determinants in choosing a STEM major. On standardized tests of elementary math achievement, roughly one third of students score "proficient" or "advanced", (and are therefore considered "STEMcapable"). When these students matriculate to high school, 17% are both STEM-capable and STEMinterested, 25% are STEM-capable but not STEM-interested, 15% are not considered STEM-capable but are STEM-interested, and a full 42% are neither STEM-capable nor STEM-interested. We must work toward increasing the percentage of STEM-capable children, and



should nurture the passion of those who are currently STEM-interested but not yet proficient in math;

but in the meantime, we should attempt to gather the "low-hanging fruit"—motivate and encourage high-proficiency, but not STEMinterested, students to pursue careers in STEM fields.

During my career as a classroom teacher, several of the techniques I used to inspire my high-proficiency, low-interest students to consider studying STEM fields had the added effect of motivating many of my not-yet-proficient students to take steps to increase their proficiency. Although I am no longer in the classroom, I frequently apply the lessons I learned about motivating and engaging students in making decisions regarding K-12 STEM outreach programs I currently manage. While many teachers and other decision-makers gravitate toward high-proficiency, STEM-motivated students when creating outreach programs/selecting students to participate in STEM-focused programs or activities, I encourage them to consider more inclusive selection.

As part of my institution's National Science Foundation-funded Science, Technology, Engineering, and Mathematics Talent Expansion Program (STEP) grant, I have the opportunity to work with both K-12

and higher education professionals on programming designed to increase the number of graduates with STEM degrees. The number of participants in one of our programs for high school students, Science Nights @SU (www.salisbury.edu/ henson/STEM/sciencenights), skyrocketed when the decision was made to eliminate the requirement that students submit an essay about their interest in STEM and attend with a parent. We now have groups of students, many from underserved schools, attend with a couple of teachers; and a number of students who had previously considered attending, but were unable to do so because a parent was unable to stay with them, are now able to attend. Simply removing a few barriers to participation was all it took to make a previously poorly-attended program so well-attended that we now have to be flexible in our programming to accommodate increased participation.

Another outreach program we sponsor that has incredible potential to increase student interest in STEM is the Maryland Science Olympiad (www.salisbury.edu/ henson/stem/scienceolympiad). At both the middle- and high-school level, I encourage coaches to look

for students who don't necessarily fit the mold of being high-achieving, STEM-interested students; some of the most successful teams are those with students who excel at more technology-driven/"build"-style events, or simply have a passion for a particular subject area (forestry, entomology, etc.). Science Olympiad is also a relatively low-cost STEM activity, which allows for increased participation of schools—while many districts no longer have (or never had) funding to support more expensive STEM-based clubs, Science Olympiad presents a great mechanism for increased student participation.

Increasingly, school districts and local institutions of higher education are recognizing the value of creating integrated and mutuallyreinforcing strategies for STEM student engagement. By creating and hosting a residential summer science camp for high-school students, for example, my institution's STEM students—some of whom are considering becoming STEM teachers—have the opportunity to work with high-school students, who in turn are exposed to some of the realities of college life (getting up for morning classes, eating in a college cafeteria, living in a residence hall, etc.), while hearing about STEM majors from students who are currently pursuing them. Students in our STEM Living-Learning Community (www.salisbury.edu/housing/llc) —a cohort program designed to foster student engagement and create greater connections to majors, which has been proven to increase persistence in STEM majors —often volunteer at our K-12 outreach events, furthering the interaction between the university and the community.

While there is no one-size-fits-all approach to inspiring students to pursue STEM fields, connecting them to opportunities (particularly those with a focus on hands-on engagement) outside of the traditional classroom affords them the chance to make further connections between classroom STEM content and real-world applications—which has been shown to positively impact student motivation.

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Kristen (Edwards) Paul spent nine years teaching high-school science in rural Arkansas; in 2009, she was awarded an Albert Einstein Distinguished Educator Fellowship, which offers K-12 STEM teachers opportunities to serve in the national public policy arena through eleven-month federal or congressional appointments. After serving two appointments in the Office of Education at NASA Headquarters contributing practical insights and a "real world" educational perspective to federal policy makers and program managers, she joined the staff of Salisbury University (Maryland) as their STEM Coordinator, managing the University's STEM initiatives.

Before You Download

By Robin Hoffman

There are a lot of options available to the modern educator when it comes to using technology. Each platform—iOS, Android, Windows, and Blackberry—provides an App Store loaded with "life-changing" applications for the classroom. With all of these applications comes the need for further management of your content. Don't get bogged down by all of these apps; let them do the work for you. How is this possible?

When you want to use technology to replace current in-classroom activities and management, make sure you research the app before you begin using it. Each of the App Stores has an extensive collection of reviews from previous users of their applications. This is a benefit you should not ignore. From the "greatest" classroom attendance app to the "easiest" content



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manager, there is always room for annoying notifications. When reading improvement, and the developer may these reviews, also remember to read



need the app to do. Instead of downloading dozens of apps in an attempt to determine which will give you the best advantage, make sure you learn from others first. Read the reviews, and preview the screen shots—all available before you download—to get the most from the thousands of apps available. Don't just rely on the standard 1-5 star ratings; navigate further into these resources through user-generated comments. This will help to make sure that you have the best apps for your needs, and that you don't overload your tablet or phone with unnecessary icons and

not have thought of that one task you from your own perspective. The application may not do what the reviewer was hoping, but it may do exactly what you want.

> Additionally, don't forget to check for app updates periodically. If you haven't set up automatic updates (optional on certain platforms), make sure you continue to install updates for your apps when they become available. Not only will this bring you product enhancements, but it will also save you from potential data loss if you're using an older version. Most App Stores will send you a notification that a new update is ready for download. Don't wait to perform these updates. It may seem like just another task in the endless cycle of data management, but these enhancements will add new features over time that could change the way you manage your content.

ABOUT THE AUTHOR

Robin Hoffman is the Senior Instructional Designer at Salisbury University, in Maryland. He works with faculty to develop and deliver hybrid and online courses that utilize some of today's newest educational technology.

Connect With Robin:



BY CURTIS J. BONK

For the past two decades, the Web has brought wave after wave of innovative technologies for delivering learning, as well as an abundance of online resources to enhance, extend, and transform it.













For the past two decades, the Web has brought wave after wave of innovative technologies for delivering learning, as well as an abundance of online resources to enhance, extend, and transform it. Along with this proliferation of learning technologies and resources have come new ideas related to formal, as well as informal, education. Although online learning did exist prior to the advent of the Web, it had become a noticeable part of the lexicon of every higher education administrator and faculty member by the late 1990s. Looking back, 1999 was the bellwether year for online learning. Even today, many bar charts and line graphs of online enrollments for a particular university or state system still use that year as the starting point for summaries of the growth of online learning for their institution. As this happened, questions were raised about quality, copyright, assessment, plagiarism, faculty training, and recognition. Among the most salient concerns, however, were those related to student retention and motivation. Boring content, often nicknamed as "shovelware", was pervasive, as many faculty members and instructional designers simply repurposed existing courses and ported them to the Web.

By the turn the millennium, options emerged that were less drastic than placing an entire course on the Web. At that time, ideas related to mixed, hybrid, or blended learning took center stage. A blended approach offered



hope of increasing student success and satisfaction. College faculty members who had been resisting fully-online learning because of its novelty, or due to the lack of personal interactions with students, could see themselves adding online components to their face-to-face (FTF) courses, including online study materials, tests, guest expert webinars, or discussion forums. To them, this was blended learning. Despite the widespread acceptance of blended forms of learning across educational sectors, teaching in a blended environment was not particularly easy; and instructors in such environments were not shy about their need for assistance and support for their efforts. Some campuses (e.g., UCLA) even experienced faculty and student protests related to simple blended learning, such as requiring a syllabus to be placed online (Young 1997, 1998).

For some on the front lines of fullyonline learning, blended learning was a step backwards. There was much less of an educational transformation or renaissance when in a blended environment than when learning fully online and never stepping into a school, university campus, or other physical educational space. Instead, blended learning offered supplements and add-ons to an eyeball-to-eyeball or lecture-based instructional approach that had been used for centuries.

For others, blended learning was a step forward in recognizing that the most effective forms of learning were ones that built a comprehensive learning environment. An effective learning environment might combine an assortment of pedagogical activities and interactive technologies. Some experiences might be FTF, or, at the very least, synchronous, while others might alter the typical time and place constraints of on-ground instruction, and allow learners to asynchronously participate in their online courses. Eyeball-toeyeball learning requirements gave way to anywhere, anytime, learning. Anyone could now learn anything from anyone else at any time (Bonk, 2009).

Today, online learning is hitting fever pitch in the form of massive open online courses, or MOOCs. Premier universities around the globe are offering free classes to tens or even hundreds of thousands of learners in a single class, and for free. However, the vast majority of those enrolled are window shopping, and not sticking around for the in-depth learning activities required for course completion. Once again, questions are arising related to learner motivation and retention.

What is interesting is that despite the numerous problems and issues raised by educators, and reported in the media for more than a decade, blended learning, fully-online learning, and MOOCs are seen as potentially disruptive to traditional classroom-based learning approaches. Budget cuts, high unemployment, and the escalating cost of education have added to the excitement placed in these emerging forms of disruption. Nevertheless, concerns about faculty training for such environments, and about learner motivation, have continued to slow down this revolution in teaching and learning. Many remain perplexed about what to do. Others hype the technology, but fail to outline how it can play a pedagogically significant role in formal or informal learning environments.

In addressing these issues, five years

ago my colleague, Dr. Ke Zhang from Wayne State University, and I wrote a book that described a new framework that attempted to simplify Web-based learning possibilities (Zhang & Bonk, 2008). With our Read, Reflect, Display, and Do (R2D2) model, we divided the Web up into four distinct possibilities. The R2D2 framework offered a problem-solving wheel of options for engaging learners using different forms of educational technology (see

Figure 1). It fostered reflection on the diversity of learners in one's course, as well as their differing learning-related needs and preferences.

Today, I am working on a book related to motivation and retention online. It is tentatively titled, "Adding Some TEC-VARIETY: 100+ Activities for Motivating and Retaining Online Learners" (Bonk & Khoo, in preparation). I plan to make the TEC-VARIETY book freely available as a PDF document when done. Sample draft chapters are now available for those who e-mail me.

The TEC-VARIETY model compartmentalizes the Web into a number of



prominent psychological principles or ideas that, when combined, can powerfully boost the chances for online learning success. In fact, as detailed below, each letter of TEC-VARIETY stands for one or more motivational principles.

Tone/Climate: Psych Safety, Comfort, Belonging

Encouragement: Feedback, Responsive, Supports

Curiosity: Surprise, Intrigue, Unknowns

Variety: Novelty, Fun, Fantasy

Autonomy: Choice, Flexibility, Opportunities

Kelevance: Meaningful, Authentic, Interesting

Interactive: Collaborative, Team-Based, Community

Engagement: Effort, Involvement, Excitement

Tension: Challenge, Dissonance, Controversy

Yields: Goal Driven, Products, Success, Ownership

The TEC-VARIETY model is the culmination of decades of psychology research on motivation. A case could be made for each of the ten main principles of the TEC-VARIETY framework that it is the most important of the ten. For some it is the social climate (Principle #1). Ice-breaking activities such as the posting of course expectations, goals and commitments, favorite websites, hobbies and interests, or eight nouns or verbs that describe oneself, provide information about the course participants which enhance later content-related interactions and engagement. While this first principle of motivation within the framework may not directly relate to course content, it sets the stage for success in attaining the optimum balance between fully-online and blended courses.

Others might argue that feedback and encouragement (Principle #2) is the most critical aspect of an online course. Such feedback might be seen in the form of "critical friend" interactions. Alternatively, it might arise in system feedback from scores on online quizzes, practice questions, and full-length exams. Encouragement and support can also come from experts who rate the work of learners in an online gallery of final products. Of course, instructors also provide feedback throughout the course in discussion forums, blog posts, course announcements, and online chats or office hours. The source or format of learner feedback often does not matter; what is important to keep in mind is that learners want to receive some type of response to everything that they post or contribute online. Expert-, practitioner-, peer-, technology-, and self- feedback can all play a role. Besides, most instructors would risk their health, or, at the very least become frustrated, if they were the only ones offering it.

Many educators suggest that the key to successful learning is learner curiosity and inquiry (Principle #3). Learner inquisitiveness and sense of surprise can be provoked through current news items related to an online course, online databases of interesting information and statistics, and student explorations of websites or course resources. Without a sense of intrigue or curiosity for the unknown, learners may be killing time in the online course, and simply be completing tasks rather than truly engaging in learning.

Of course, learner autonomy (Principle #5) is often a rallying cry for those promoting online environments. Online learning often contains more selfdirected learning expectations than traditional FTF courses. MOOCs, in particular, often offer videos, text, webinars, discussions, Web resources, and other paths for learning the course content. One might only be interested in one or two modules or weeks of a MOOC, and skip the rest. When effectively set up, an online course offers learners much learning autonomy, convenience, and flexibility. This principle empowers learners to make their own learning choices rather than being dictated to by an all-knowing instructor or pre-prescribed content and learning pathways. Here, the course might be set up with multiple readings each week for learners to select from. Alternatively, there might be multipletask options or video-based cases to go along with text-based ones. As a means to enhance learner choice and course flexibility, I often offer ten or more task options from which learners select four to complete.

We often hear in the literature that it is the relevancy and meaningfulness of the task (Principle #6) which determines course engagement and ultimate completion. Allowing students to write reflection papers that link their current job situation (including internship or practicum experiences) to the course content is one way to bring about immediate relevancy. Learners might also interview researchers of seminal articles, as well as designers of viral YouTube videos, or authors of books related to the class content. In these interviews, they might inquire about aspects of their work that did not appear in the publication or video, or perhaps where their work is currently focused.

Others might look to setting goals and having final products which are presented and celebrated (Principle #10). In my fully-online and blended courses, such projects often include a mobile app, Prezi presentation, video summary of one's learning, multimedia glossary, podcast show, or chapter in a crossinstitutional Wikibook (Bonk, Lee, Kim, & Lin, 2009). Having an ending-course goal gives learners something to plan or reach for, as well as to celebrate when done.

Those are just a few motivational principles and components of the TEC-VARIETY framework. What is clear is that each principle of this framework can play a significant role in learner engagement and retention in fully-online and blended courses, including MOOCs. At the same time, no one principle is primary over the others; and a fully-online or blended course which thoughtfully mixes just a few of them should find rich success.

I plan to document 100 different activities in my TEC-VARIETY book that can potentially help you arouse learner motivation and engagement. Each will have one or more variations; hence, there will be hundreds of possible activities. And remember, this book, as with learning online from MOOCs these days, will be free and open. I certainly hope that you will afford the time to take a look.

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<u>Curt Bonk</u>, Professor of Instructional Systems Technology at Indiana University; draws on his background as a corporate controller, CPA, educational psychologist, and instructional technologist, to offer unique insights into the intersection of business, education, psychology, and technology in his popular blog, <u>TravelinEdMan</u>. He has authored several widely-used technology books, including <u>The World is Open</u>, <u>Empowering Online Learning</u>, <u>The Handbook of Blended Learning</u>, and <u>Electronic Collaborators</u>. Learn more at http://worldisopen.com/



If I had not personally visited the schools in rural areas, I would have taken it for granted that every student here in China is equipped with the latest high-tech tools for study, just as I am.

LCD projectors, laser pointers, range hoods, and cooking tools set up for students to simulate culinary tasks these are the facilities that come to my mind when I reflect on my past classroom experiences. I was born in Beijing, a modern city remarkable for its showcasing of China's economic growth. The advancement in technology over the years has made our lives much different from how they were in

my mother's era. As a student in the 21st century, I do not need to carry tons of heavy books to school; all I need is a computer.

Every day my computer starts up with several notifications automatically jumping out at me, informing me of a list of things to do at school. With all my files stored in "My Documents", I hand in my homework by posting files

on Edmodo—a social-learning platform. I keep my textbooks for literature class as e-books on Kindle, and instead of rifling through the paper dictionary, I look up new vocabulary items in an electronic one. Most of our teachers give their lectures with the help of PowerPoint, which benefits us as well, since we do not have to race to copy as many notes as possible from the blackboard while simultaneously listening. Sometimes I finish my homework in the school's electronic reading room, where I can get a great amount of information on recent research and news. Such convenient tools play important roles in our everyday learning. I can-

66 I was surprised at her ability to learn quite as much as we can without these high-tech devices; yet at the same time I wonder how much more she could accomplish if she was as well equipped as we are..

not imagine life without my computer and the Internet.

In China today, an enormous population of people feels the same way as I do. The number of net citizens has grown from 132 million to 564 million during the past five years. Now in 2013, 42.1% of people in our country—most of whom are students just like me—have access to the Internet.

However, only after I met my rural hand-in-hand companion Guiying did I realize how lucky I am, and what a crucial role high-tech products play in school education. Guiying studies in rural Chongqing. Once I sent her a box of English VCDs after knowing that she used to get relatively low scores in listening. A few months later, she wrote me a letter of thanks, and told me regretfully that she does not have a device to play the VCDs. Similarly, I could not e-mail learning materials to her, since she does not have a computer at home. I was surprised at her ability to learn quite as much as we can without these high-tech devices; yet at

> the same time I wonder how much more she could accomplish if she was as well equipped as we are.

> Last summer I went to her hometown and visited the rural schools there. Classes

were not taught in shabby little houses as I had imagined; but still, most students were not able to get access to simple electronic equipment, let alone the Internet. The students there are very hardworking. They read piles of books, and do a lot of exercises. Yet their impoverished environment prevents them from finding out more about the outside world. The Internet serves as an indispensable medium for

me to broaden my own horizon, and to learn the facts beyond the textbooks.

The rural students, on the other hand, were only able to learn things through textbooks and their teachers.

Guiying, doing her u t m o s t despite the poor learning conditions, finally got a

chance to enter the best high school in QianJiang city—Chongqing. She told me that the school is equipped with much better facilities than those in the rural villages. Multimedia instructions are applied in classrooms, and the students even watch movies in class once a week. Most of her classmates are paired up with a computer at home to facilitate their studies. I was happy to see all

these improvements, and to know that these high-tech devices have made a

> difference to at least 156 million rural people's lives.

The fact that small cities in China have been keeping pace with the rapid modernization in the rest of the world gives me hope. It makes me believe that even though

serious efforts are needed to improve the overall level of education in rural areas (through progress on equipment, teachers etc.), one day students there will be granted opportunities comparable at least to those in small cities, if not to our own. I also know that technology without limits will continue to make a tremendous contribution to the field of education and beyond.





ABOUT THE AUTHOR

Yifei is an eighteen-year-old graduate from Beijing No. 4 High School. She will begin her college studies this fall at Cornell University in New York.



Using Classroom Technology To Meet Common Core Standards

BY KAREN LARSON AND GENE TOGNETTI

are required to tackle. One issue is recognizing that the new standards only detail the student outcome not how the student learns the outcome. Assuming that there exists an implementation plan at school that has already addressed the "why and what" outcomes to learn, teachers now need to address the "how". How do I, a third grade teacher, create opportunities in my classroom that will ultimately lead to college and career readiness? How do I teach students so that the outcomes are truly learned?

We find this a very exciting proposition, and indeed a great time to be educators. Accepting the opportunity that lies before us, how will we incorporate the CCSS, while also addressing other educational prerogatives, such as integrating 21st-century skills, project-based learning, and the complexities of technology? Our philosophy: remain focused on student outcomes!

Regardless of your school's accesswhether 1:1, BYOD, or a couple of tablets in the classroom—technology does more than just level the playing field. It offers opportunities to meet the standards, addresses 21st century skills, allows for differentiation, provides for creativity and choice, and most importantly, pushes students to reach those higher levels of thinking. Creativity is no longer about those who are skilled in the visual and performing arts. It's about taking what you know, and applying it to new and different situations. It's taking what was imagined and making it real. Technology helps to make that happen.

Let's be clear, though; technology must be in the hands of the student. Our goal is to identify tools that students can choose within learning opportunities that will allow them to do more than meet the standards. Technology opens the doors for them to discover the world around them, learn collaboration skills, and work responsibly; all while absorbing the appropriate curriculum. Correspondingly, technology should not just replace paper and pencil. Here's an outline on how to set your students up for success:

** Click on any link to visit that resource website **

1. Create units that include multiple standards

Developing the unit requires time on your part. Once done, and if done well, it requires little time once in the students' hands. Start by researching the myriad of Open Educational Resources ("OER" in the parlance) and other topunit resources. We like Buck Institute's PBL site, Common Core Curriculum Maps, LearnZillion, and the National Science Digital Library. Also check out Curriki, Lessonopoly, and California Learning Resource Network. Be sure your units allow for:

Collaboration: Don't confuse group work with collaboration. True collaboration means students working together to solve real-world problems, create effective videos, write narratives, and so on. Time spent learning how to collaborate is a life skill that will serve them well. (By the way, "collaboration" is clearly delineated in the ELA anchor standards.)

Peer Review: Another important skill to learn. Peer review is not spell-checking, nor is it a "this is great!" Google Docs comment. It's helping one's peers meet the criteria of the task as defined by both the teacher and the student collaborative group.

Rubrics: Let the students know what you are looking for. Having students participate in rubric creation has its benefits too.

2. Address an essential question

Each unit should require students to address a broad question that, once answered, assures you the students have met (and exceeded) the grade-level standard. Questions like, "Of all the root causes of the Civil War, which one impacted the South most significantly, and why?", allow students to delve deep into the economic, political and social aspects behind the war. They have to understand all the causes, and then draw conclusions based on their research. The breadth and depth of responses will make it clear who's learned the material and who's providing filler or fluff.

3. Require unique outcomes

The availability of opportunities for choice is key to students reaching higher levels of thinking and re-defined learning. Whether your classroom is BYOD, produce unique work using technology. inappropriate material. Consider:

digital storytelling allows students the A simple and fun choice. opportunity to convey their thoughts, ideas and evidence in a manner that engages both the presenter and the

audience. Here is a shortlist of some of our favorite web-based digital storytelling tools. They are all easy to use, and require little from the teacher in terms of "set up" for students to be successful:

Pixorial: A powerful web-based video editor that students and teachers will find easy and fun to use.

WeVideo: Another web-based video editor that has built-in collaborative capabilities.

Animoto: Create slideshows with images, video, music, and transitions. Great for comparing themes, characters or settings. The "free" version is limited to 30 seconds of video.

VoiceThread: Another collaborative solution for sharing a story. Students create "conversations in the cloud", based upon images, text and audio they add themselves. VoiceThread allows the audience to comment on or continue the story.

tablet-based, or uses a computer lab, Comic Creation: Comic creation students should be able to access a vari- allows students to share their learnety of technology tools to produce their ing in imaginative ways. It is ideal for work. ELA anchor standards are specific second-language and emerging English to integrating and evaluating content learners. There are a number of free from different media resources, and to tools online, but watch out for ads. and

Digital Storytelling: The concept of ReadWriteThink Comic Creator:

(Note: it does not allow saving work must be completed in one sitting.)

HelloSlide: A fun slideshow creator listening opportunities are all important suave English guy verbalize it for you!

4. Have a performance component

Having a larger audience encourages students to create work that is no longer "just good enough". Who sees the end results of your student projects? Is it just you and whoever is in that classroom? If the answer is yes, consider using technology that broadens the audience. Some Web tools, like VoiceThread, allow viewers to leave feedback. Presentations, speaking, and

that adds speech to text! Add your own ELA components. Blogging—either at images (created in Google Slides, for the class or individual student level instance), type out a script, and let the is another powerful tool to speak to a wider community and engage your students.

> It's easy to get distracted or frustrated by the "next great thing". By focusing your objectives, and planning using the framework described above, you'll raise the bar for student learning. Students will be more engaged, and after you do a bit of heavy lifting while planning your approach, outcomes and rubrics, you can become a "guide on the side" to help your students craft some awesome outcomes. We think it's very likely you'll be amazed by the results!

ABOUT THE AUTHORS

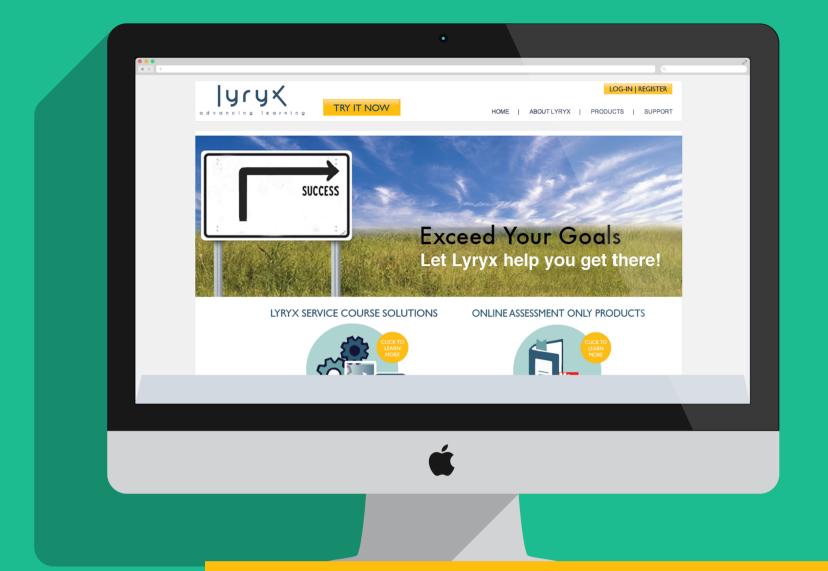


Karen Larson is the principal of St. Mary's School in Los Gatos, California. She teaches junior-high language arts; sits on the Board of Directors of Silicon Valley CUE (Computer-Using Educators); and was a very early adopter of 1:1 computing in the classroom over ten years ago.

Gene Tognetti is vice-principal of St. Leo the Great School in San Jose, California. He is the vice president of the Silicon Valley CUE, and does a wide variety of ed. Tech. training for many organizations in the San Jose area.



Karen and Gene co-author the Common Core and Education Technology blog, which reports on practical, classroom-proven tools for Common Core and more.



Online Algebra Assessment Using Lyryx

BY BRUCE BAUSLAUGH, NATHAN FRIESS, AND CLAUDE LAFAMME

Computer-aided assessment (CAA) has undergone significant development and improvement over the last forty years (see Conole and Warburton [4]), and now offers a much wider range of tools for learning and assessment. In particular, CAA now has a much better chance of being effectively used in formative assessment, generally defined as the use of assessment to provide information to students and instructors over the course of instruction, with the aim of improving the learning process (see for example [2]). One of the best forms of formative assessment is what is traditionally known as "homework", which is the focus of this short article,

as applied to the area of Elementary Algebra.

There are several important factors required to produce an effective online formative assessment system. The first is a seamless user-interface, allowing students to write their work without any major technical barriers. The second is a grading algorithm capable of analyzing this work. Taken together, they allow for the implementation of a system able to provide personalized comments on student mistakes, and targeted suggestions for improvement. With the additional capability of repeated practice through appropriate



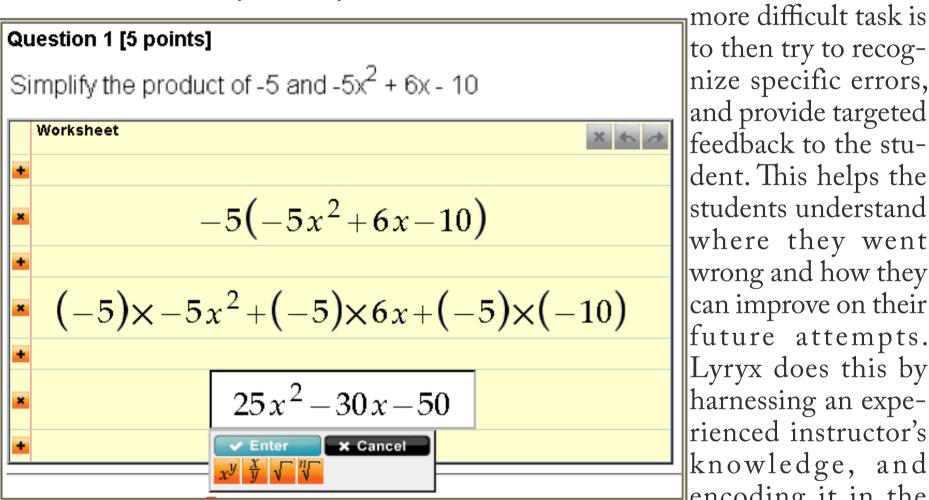
randomized question generation, this provides students with a rich learning environment.

The User Interface

Lyryx has designed a user interface which allows students to input as many steps of their solution as they desire. Called a "Worksheet", students have the ability to add and delete lines (+/x) and enter their solutions in very much the same way as they would

The Grading Algorithms

The primary goal for the Lyryx assessment engine is to grade all student work in as close as possible a manner to that in which an experienced (human) instructor would have done it — if not better — by drawing on the strengths of computer algorithms. The system should first verify the solution mathematically, line by line, to determine if and where the student made an error in their work. The much



to then try to recognize specific errors, and provide targeted feedback to the student. This helps the students understand where they went wrong and how they can improve on their future attempts. Lyryx does this by harnessing an experienced instructor's knowledge, and encoding it in the

have done on paper, using buttons to enter symbols or operations appropriate to the question.

As is done traditionally, the student is encouraged to start the solution by first writing the question statement, followed by simple steps all the way through to the final solution.

grading algorithm.

In the next example, the student started correctly and made substantial progress until a simple sign error was made in the last line. The system detected the error by mathematically verifying that this last line was not



equivalent to the original question. It also identified the specific error, pro-

inputted by students, and analyzed by a grading algorithm. On the one hand,

Question 1 [5 points] Simplify the product of -5 and -5x² + 6x - 10 Grading: Your answer was: The line you have entered is exactly the $-5(-5x^2+6x-10)$ same as the original expression. $(-5)\times -5x^2 + (-5)\times 6x + (-5)\times (-10)$ You have entered the correct values, but $25 x^2 - 30 x - 50$ the sign of the constant term is incorrect. The correct answer is: $25 x^2 - 30 x + 50$ The distributive property requires requires all terms of the polynomial to be multiplied by the constant term and the signs for each term reversed. You will lose 1 point for this part. Total points for this question: 4

it is precisely these multiple steps which allow the grading algorithms to better identify common mistakes; but on the other hand, they quickly create tremendous complexity for the algorithms to handle. More research is needed to effectively harness computing power for grading and recognizing common errors.

vided targeted feedback to the student, and was able to grant partial marks.

Limitations and Future Work

Currently, Lyryx assessment is focusing on subjects that contain a significant amount of quantitative material. These subject areas are chosen because they lend themselves well to questions whose solutions can be broken down into multiple steps, which can be

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ABOUT THE AUTHORS

Bruce Bauslaugh has a Ph.D. in mathematics, joined Lyryx from his earlier position as a computer science instructor. Bruce has designed and implemented a powerful engine to deliver and support Lyryx products

Nathan Friess has an M.Sc. in Computer Science, specializing in computer security. He brings insights into the operations of enterprise-level IT infrastructure.



Claude Laflamme is a professor of mathematics at the University of Calgary. Claude is a dedicated instructor and has been involved in software development projects for many years. Bruce Bauslaugh has a Ph.D. in mathematics, joined Lyryx from his earlier position as a computer science instructor. Bruce has designed and implemented a powerful engine to deliver and support Lyryx product.

TECHNOLOGY, AUTISM. AND TODAY'S CLASSROOM

BY SCOTT FOWLER

I REMEMBER A TIME IN MY CAREER ... WHEN THE FIRST MACS ARRIVED IN THE PUBLIC-SCHOOL CLASSROOM. MY STUDENTS WERE ABUZZ WITH EXCITEMENT, AND QUITE FRANKLY, SO WAS I. THERE WERE THOSE 5 $\frac{1}{2}$ Inch floppy disks and that little monitor with THE GREEN CURSOR. WE HAD OUR FIRST CLASSROOM COMPUTER, AND IT WAS GOING TO CHANGE THE FACE OF MY INSTRUCTIONAL PROGRAM IN MY CLASSROOM!

Now, there is no doubt that the current level of technology has indeed enhanced and provided opportunities not before thought possible. Today's educators use all sorts of technological devices and programs to synthesize, streamline, and make accessible curricular topics and instruction for their students. With the increases in technology and all of the research advances that parallel the rising number of students identified on the autism spectrum, educators are increasingly looking towards technology to assist them.

... and yes, there is an app for that!

In fact, there is a wide variety of applications available for both the Apple and Android markets. Apple, with its iPad, and their competitors, have produced tablets that far exceed the early Macs and PCs in terms affordability, expandability, capacity and adaptability. Students and staff alike are drawn to mobile technology as it continues to revolutionize how we complete tasks in our daily lives. With this in mind, how do we as educators integrate this technology for the benefit of students on the spectrum?

Certainly, tablet technology offers students with communication disorders a benefit in terms of the interactive experience. The range of applications available is staggering, and growing every day; and with most of these applications reasonably priced, they look to be affordable alternatives. When compared with DynoVox technology (a speech-communication device that uses symbol-adapted special education software to assist individuals in



overcoming speech, language and learning challenges) and other augmented communication devices, the average tablet is far more economical (roughly \$499 for a tablet vs. around \$8,000 for a DynoVox). Furthermore, a DynoVox is not expandable, whereas tablets have a never-ending list of applications available to them. For these reasons and many others, tablets look very attractive to educators as we continue to work with the Autism

Spectrum Disorder (ASD) community in our schools.

However, with that said, there is a catch. How are school systems to know which applications do just as they are marketed as doing? Are the applications founded in research and best practice? Do they deliver what they say they do? Like all things in life, anything that sounds too good to be true generally is. As technology is marketed to schools, educators and those making purchase decisions need to carefully consider the use of these products. While some applications for mobile technology are indeed useful, (like those that use picture icons to communicate and follow a schedule), with the ASD population, educators should be mindful of current research in the field. Technology, no matter how useful or flexible, should never substitute for human interaction, which is to be preferred wherever possible.

Furthermore, the appropriateness of these devices and their applications needs to be discussed at length in Individualized Education Plans (IEPs). Specifically, the law under IDEA requires IEP teams to decide the appropriateness of adaptive technology, and the associated applications that will be used. While mobile technology certainly has its place in the modern classroom, it has been my experience to be wary of anything

that is marketed as the next big thing. Students are indeed drawn to the use of these items, but educators must always weigh the potential benefits to their students. As a school administrator I am constantly looking for opportunities to support and extend the learning of all students. With regard to the ASD population, I have personally noted that there is a trend among some to seek a quick fix, and mobile technology is sometimes seen as the answer. To that end it is important that educators truly understand the spectrum disorders, along with being able to quantify with research data what mobile technology will specifically do to academically and socially support these students. Educators must also be mindful of parental and public perception that technology and mobile content always promotes positive learning habits. While every

educator sees benefits to these technologies, we must also look specifically at the whole child and his/her development. Students on the spectrum typically have difficulties with socialization, and while I personally see mobile technology as a benefit in certain circumstances, I tend to think in terms of how the student will learn to better interact with peers.

While mobile technology is certainly exciting and has its application in the classroom, schools need to continue to be cognizant of these issues as they plan for the many challenges the ASD population faces. School systems need to continue to carefully examine these new technologies, and evaluate their appropriateness within many contexts, to be certain that what is utilized with students on the spectrum is truly of benefit.



Scott has worked in public education for 22 years, serving as a teacher, lead teacher, Assistant Principal and Principal. His particular area of interest and specialty involves special needs students.

Visit Scott here!

Professional Development

Grant Deadlines



JULY 12

Boston Scientific

Boston Scientific may provide financial and product support to third-party educational conferences that further medical and scientific knowledge through didactic discourse and debate among participants. Boston Scientific believes that such programs are a critical catalyst to advancements in the medical community, and we support a wide range of programs at the local, regional and national level. he NEA supports new ideas and practices to strengthen teaching and learning. Our goal is to fund and share successful strategies to educate and prepare students for bright and rewarding futures.

 $\underline{http://www.bostonscientific.com/templatedata/imports/HTML/endogrant/education.htm}$



PD: Grant Deadlines

JULY 12

National Science Foundation - EHR Core Research

EHR seeks proposals that will help synthesize, build and/or expand research foundations in the following core areas: STEM learning, STEM learning environments, workforce development, and broadening participation in STEM.

http://www.nsf.gov/pubs/2013/nsf13555/nsf13555.htm?org=NSF

JULY 14

Verizon Foundation

Verizon supports STEM education programs and initiatives at the K-12 level in the communities where it does business.

http://www.verizonfoundation.org/grants

JULY 23

Spencer Foundation

Concerned with advancing the learning and development of children and adults, Spencer is interested in studies that lead to better understanding and improvements in the intellectual, material, and organizational resources that contribute to successful teaching and learning.

http://www.spencer.org/content.cfm/teaching-learning-and-instructional-resources



AUGUST 1

American Honda Foundation

The American Honda Foundation's funding priority is youth education in the areas of STEM, the environment, literacy, and job training.

hhttp://corporate.honda.com/america/philanthropy.aspx?id=ahf

Toshiba America Foundation: Grants For Grades 6 - 12

Toshiba provides funds to teachers in grades 6-12 to support innovative projects that make math or science education more engaging.

http://www.toshiba.com/taf/

AUGUST 16

Boston Scientific

Boston Scientific provides financial and product support to third-party educational conferences that further medical and scientific knowledge through didactic discourse and debate among participants.

http://www.bostonscientific.com/templatedata/imports/HTML/endogrant/education.htm

AUGUST 31

Monsanto Fund Math and Science Fund K-12

We support programs that inspire and nurture students' interest in math and/or science, offer innovative approaches to teaching or learning in math and science, and foster student achievement in math and/or science.

http://www.monsantofund.org/grants/math-science-education/

Can Social Media Sites Have a Role in K-12 Education?

BY DOUGLAS M. DEWITT, PH.D.

If all the recent advances in technology, the rise of social media is perhaps the most feared by educators who deal with children and adolescents, and with good reason! While such platforms offer free and open communication with countless friends and acquaintances, there is also an associated lack of privacy and monitoring. Teachers and administrators are rightfully cautious and concerned about the safety of the students under their care. There is also a concern regarding the educational value of such platforms. My purpose here is not to dispute the obvious trepidation that most educators have around using social media in the classroom, but rather to offer some points to consider, and to offer some possible uses of it that can be valuable and viable.

FACEBOOK

Let's tackle the toughest one first: Facebook. While I am the first to admit that there are multiple reasons to run away from Facebook, there are also acceptable uses that can be productive and safe. Using closed groups requiring an invitation to join is one option. While not perfect, it does offer a level of control and protection. It also lets the page administrator maintain control over who can join and who can post. This strategy is particularly well-suited for teams and clubs. Class pages are also an option, but constant vigilance and attention is required. Schools and school administrators can use, and have used, Facebook to update the public and to offer

another method of communication. In many cases, this has been highly successful. My advice is that if you do venture into the Facebook world, do it with your eyes wide open, get your parents on board, and make sure you have support from the school administration!

TWITTER

Perhaps the most intriguing social media platform is Twitter. Tweets offer a short, quick way to convey information to a large number of people at the same time. The possibilities are really endless. Examples include teachers using Twitter for homework tutoring, offering supplemental help, school announcements such as athletic and activity schedules, guidance, Tweeting scholarship information and deadlines, and the list goes on. In all cases, these are designated accounts established for a singular purpose.

PINTEREST

Another social media option with great potential is Pinterest, which is a tool that allows teachers to create and curate photo images that are "pinned" to themed photo boards. Again, the creative educator can envision a number of ways to use this platform. A class site can have multiple areas on a variety of subjects. The teacher can

control/supervise the posts, and determine what can be shared. The possible uses are endless: a tribute to veterans on Veterans' Day; favorite family traditions on any number of holidays; a virtual tour of the US National Parks; the historical development of the US flag; and the list goes on. The point is that Pinterest can generate a great deal of excitement, provide a fun activity, and be highly educational at the same time.

Finally, there are a variety of **blogging** and micro-blogging sites that can be used to teach and enhance writing skills. There are also a number of sites that offer Wikis that are useful for group projects and papers. Sites such as YouTube and Vimeo offer a way to create video projects that can be posted and kept private, or shared via private-access URLs.

The bottom line is that social media is a very real part of the lives of most tweens and teens. While the concerns are very real and well-founded, the benefits can be legion. The wise educator will find ways to tap into this generation's preferred modes of communication and capitalize on social media.

Douglas DeWitt has worked as a: Teacher, Coach, Supervisor, Assistant Principal, Principal, Consultant, Adjunct faculty at various Universities, Superintendent, and Board Chair. He currently is a professor at Salisbury University where he teaches Educational Leadership.

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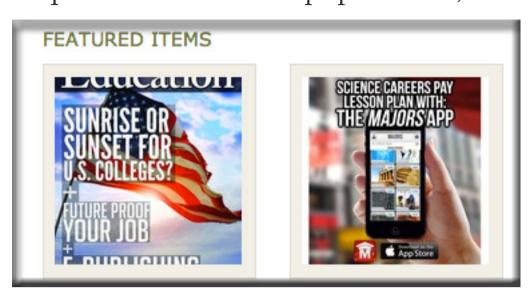


We promote educators, not corporations. Learn more here: Here!

When Chad Grills and I launched Education Magazine earlier this year, we made a decision to aim our magazine at those individuals, companies, and institutions that are agents of positive change. Once such company is Teachers Pay Teachers (TpT), an online marketplace that we have consistently championed.

Each month, we profile noteworthy sellers who are providing fellow teachers with great digital products at affordable prices. By cutting out the middleman, educators are able to effectively

collaborate, share, and transact with one another in a vibrant peerto-peer market. This keeps prices low, and any money exchanged



in the hands of educators, rather than huge publishing houses. As an economist and professor, I think that this is an efficient and powerful way for educators to interact, and it promotes the dis-

semination of novel approaches and best practices.

Given our faith in the TpT concept, we have decided to put our money where our mouths are, and launch our own TpT store for Education Magazine. This move allows us to be members of

this fast-growing educational community, and makes it easier to solicit feedback and new story ideas from educators who choose to buy and sell on the site. Moreover, if you have received TpT gift certificates, or have a



credit balance on the site, you can use those stored funds to purchase Education Magazine products. If you have some spare time, please visit our store and let us know what you think.

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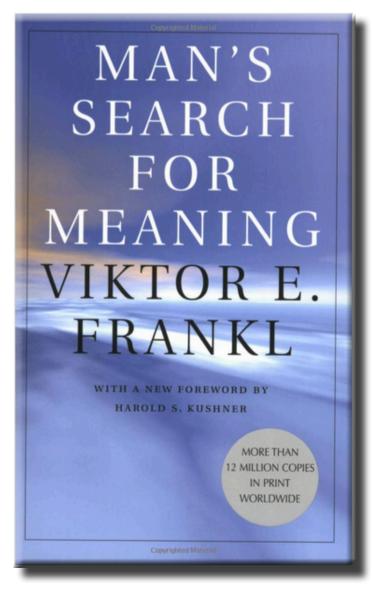
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5 Must Read Books For Summer

BY CYNTHIA GRILLS



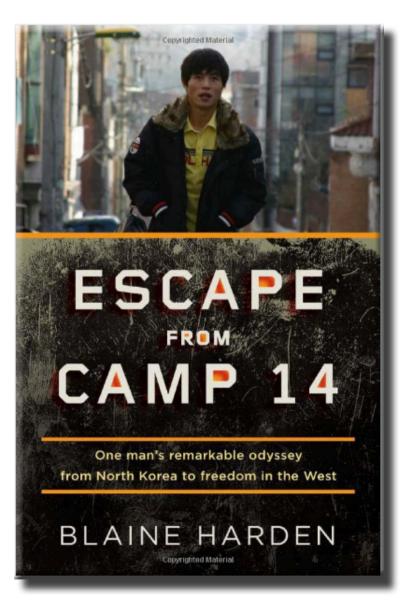
MAN'S SEARCH FOR MEANING

by Victor Frankl

Man's Search For Meaning tells how, "He who has a WHY to live, can bear with almost any HOW." (Nietzche). The book is in two parts. Part one relates Frankl's horrific experiences of living in a concentration camp. Some of his subject matter includes the prisoner system called Capo, where prisoners are put in charge of other prisoners. The "saint", the "monster", and the "Jekyll and Hyde" all appear as their handling of their new-found power is described. The second part explains Frankl's psychological therapy called "Logotherapy". Using his anecdotes from the

camp, and some therapy case studies as examples, he explains survival in the face of such concentrated, inescapable, horror. His father, brother, mother, and wife

all perished in the war. Frankel concludes that one factor determining survival was the men's (prisoners were separated by sex, hence only a male perspective) ability and choice to continue to find a meaning and a reason to live. Surprisingly, he notes that the very ones who gave away comfort and food to others were the ones who survived. By their helping others to live, they lived themselves. Who should read this book? Perhaps a better question is, "Why would anyone NOT read this book?" If you are facing major adversity and have lost hope; if your life has no direction or meaning; or even if you are facing minor adversity and find yourself dealing badly with it, read this book How will this book help you?—Are you a whiner? Do you blame everyone else for you your suffering? Frankl's past experiences and outlook will help you to put suffering in its place. Gordon W. Allport states, "to live is to suffer, to survive is to find meaning in the suffering."



ESCAPE FROM CAMP 13

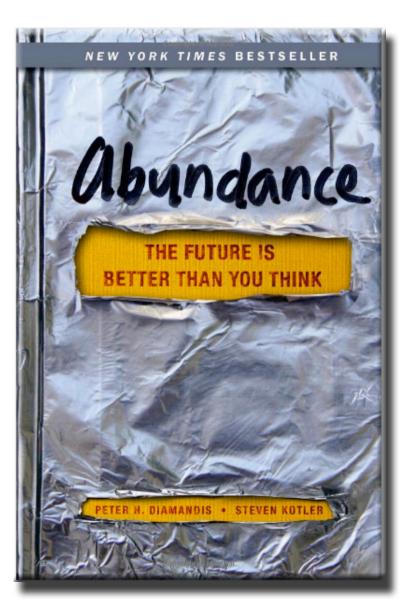
by Blaine Harden

"Talking to them (North Koreans) about the camps is something that has not been possible, They go nuts when you talk about it." - David Straub, who worked in the State Department during the Bush and Clinton years. An understatement indeed. Escape from Camp 14, as related to and written by Blaine Harden, tells of Shin Dong-Hyuk's life. Born and raised in a North Korean Gulag, Shin's story is told by placing the unbelievable state of on-going human rights atrocities in North Korean in juxtaposition with the vain privilege and

excess that is Kim Jong Il's regime. The "ten commandments for all North Korean Prisoners to follow" at the end of the book really sum it up sadly. Shin is only now able to state, "I feel like I am becoming human." He went on to say that he escaped physically, but is still working on escaping psychologically. He had to learn to cry and to love. He originally escaped just for food. He says that only later did he learn about freedom and political rights.

What is truly worthy of consideration is that this boy's life in the Gulag was one of some privilege despite its terrors; can we begin to imagine the normal man's or woman's internment experiences?

If you want to be correctly informed about the truth behind the baby-faced leader of North Korea, and the courageous people who speak out about it all, this is a good start. Teachers of social studies and government might think of using parts of this book to stimulate interest in learning about other forms of government and abuses of power. Aspiring leaders and political hopefuls might especially draw a sense of purpose from this book. A good read for everyone to give a contrasting perspective on how lucky we are to live where we do.



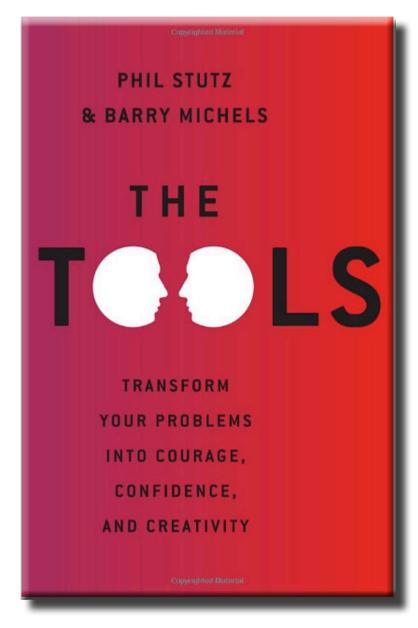
Abundance: The Future is Better Than You Think

by Peter Diamandis & Steven Kotler

Abundance is just what the title states. Inside you will find lots of reasons for looking upward and being positive on many levels and topics. This macro-level view of "abundance" is fantastic training for those teaching others. Abundance is dissected and presented in levels via a pyramid of their importance. The chapter on Techno-philanthropists will make anyone want to earn a bundle to help right the wrongs of the world. Interesting looks at the future of energy and health care provide

much-needed hope from the wonder of science and technology working together. Refreshing indeed. The ending includes a positive spin on failure, which should be a required read for all entrepreneurs and inventors. This book sets out to prove that Abundance thinking is the most logical way; and it succeeds, using example after example.

Who are the people that need or might want this information? Anyone who needs to promote something to others that defies current negative group-think. Entrepreneurs come to mind, but so do teachers, parents, and home-schooling parents and teachers. There is motivational material here for anyone who needs hope in facing daily challenges.



THE TOOLS; **TRANSFORM** YOUR PROBLEMS INTO COURAGE, CONFIDENCE, **AND CREATIVITY**

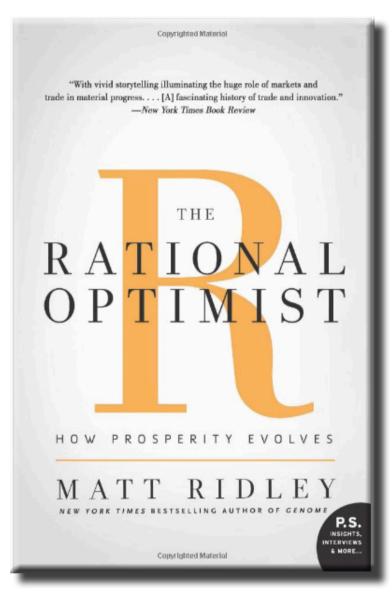
by Peter Stutz and Barry Michels

The Tools is a self-help book. Are you stuck? Do you hold yourself back with annoying selfdefeating backwards behaviors? Tools was written to fix this. It beats the hell out of wasting time going to a counselor and retelling

your life story. It also saves you time and money, and prevents you from PAYING FOR being asked and answering embarrassing questions like, "Did your mother breast feed you?" Through practicing these steps, these two gentlemen feel certain that you too, can move on. One warning: these techniques involve practicing imaging, imagining, and telling yourself other ways to behave in stressful settings. If this is not your thing, you will likely want to read something else. But, if you have already tried everything else to overcome common issues like worry, anxiety, anger, or jealousy, what have you got to lose? By activating abilities you already possess, Tools teaches you to:

- 1. Work through the Pain of Stuff.
- 2. Activate love when you really need it.
- 3. Listen to your Inner Authority.
- 4. Get into the Grateful Flow.
- 5. Frame things with a positive view.

This is a powerful book to crush worrying. Tools offers a cure for fear of public speaking, flying, criticism, and just about everything in between. Read Tools, and think about what might you accomplish if you could move past being stuck?



The Rational Optimist

by Matt Ridley

The Rational Optimist will kick you right out of any negative mind-set that you may have about the current state of mankind. It uses selected historical minuets that are juxtaposed alongside current statistical data. The results give you plenty of "I didn't know that!" moments about our past. At the same time, it amazes by revealing the true state of affairs on a variety of topics: economic, social, technological, medical, and the list goes on. The book focuses on how the collective and collaborative effects of people change our world. This is a book for anyone who

frequently encounters pessimists. Anecdotes would be perfect to pop into presentations or retell during the morning announcements at school. The Rational Optimist will help you build a statistically supported positive-path toward smelling the roses!

There you have it, the top books to read this summer! We know our readers have busy scheudules and hope this helps narrow down the choices and pre-qualifies only the best books to dive into. Enjoy!



Cynthia Grills has taught for over 30 years in K-12 and at the college level. She has taught at both public and private schools in the U.S. as well as abroad in rural China, and India. She continues to help children through the Department of Juvenile Services. Connect with her on Linkedin:

We love reviews and our readers! Our favorite review from issue 4:

"...It is a must have for educators everywhere...Keep the issues coming! I look forward to the next, and the next, and the next..."

-Emily DeMar

Boost State Test Scores by 31% - Mini-Tech Tutorials for Classroom Breakthroughs PLUS Properties Special Education	Education Maga Educational App Applet Studios, LLC Offers In-App Purchases	azine: News, 45 🗹 ps, and Lesson Pla	
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Great so far	Apr 20, 201		

Dates: July 12 - July 13 Location: Torrance, California

NAMLE 2013 Conference

The NAMLE Conference is dedicated to the "knowledge and practice of media literacy education in the United States." This year's theme is "Teachin and Learning

Across Media." Offered by the National Association for Media Literacy Education. http://namle.net/conference/

American Association of Physics Teachers Summer Meeting

Dates: July 13- July 17 Location: Portland, Oregon

interactive textbooks, the Next Generation Science Education Standards, best prac-

tices in educational technology, research in math education and education research

at the boundary between biology and physics, green labs and activities, and a role

playing workshop on the Pluto Debate."

Offered by the American Association of Physics Teachers. http://www.aapt.org/Conferences/SM2013/

Dates: July 15 - July 17 Location: Charlotte, North Carolina

Presented by the Southern Regional Education Board and the Bill and Melinda Gates Foundation. http://www.sreb.org/page/1615/CCSSConference

"The PKAL Summer Leadership Institute is designed for both early and mid-career STEM faculty engaged in leading projects aimed at transforming undergraduate STEM education in their classrooms, departments, and institutions."

Location: Crestone, Colorado

• engage in discussions about national, regional and local challenges and opportuni-

Goals of the conference:

- ties facing faculty engaged in developing stronger STEM education. • learn from experienced mentors about the political dimensions of institutional change, the importance of understanding the institutional culture, and the changing
- reflect privately and with mentors and peers on being an agent-of-change and a leader in STEM education. • create a leadership growth plan, with guidance from mentors, that outlines the vision, goals and strategies that will serve as an action agenda to effect change. • join a network of colleagues from around the country who share similar goals
 - 2013 Technology Education Summer Conference

This conference promotes "technological studies," including mathematics and science, at the K-12 level. Pre-conference sessions and professional development courses are offered for teachers. The conference is hosted by the Virginia Technology and Engineering Education Association. http://www.vteea.org/VTEA conference.php

Date: July 31 - August 2

Location: Hampton, Virginia

Course, Contracted the special state of the special Earle Raymond Hedrick Lecture Series by Olga Holtz

MAA-AMS Joint Invited Address by Judy Walker

• MAA Invited Addresses

• Invited Paper Sessions on topics including:

• A Short Course led by Arthur Benjamin on The Mathematics of Games and

Jointly hosted by the Mathematical Association of America and the Canadian

Society for the History & Philosophy of Mathematics.

http://www.maa.org/mathfest/

Oklahoma Career and Technology

Education Summer Conference

Puzzles "

Dates: July 31 - August 3 Location: Hartford, Conneticut

"MAA MathFest is the largest annual summertime gathering of mathematicians.

In 2013, MAA MathFest will offer all of the great sessions that you have come

to expect from the conference: Invited Addresses, Invited Paper Sessions, a Short

- Hosted by Oklahoma Department of Career and Technology Education. http://www.okcareertech.org/summer-conference

CareerTech teachers, counselors, administrators and state staff. Participants will

learn innovative technical and instructional skills. They will also have the oppor-

tunity to network with and learn from their counterparts throughout the state."

Keynote Speaker: Ken Jennings, Author of Maphead & All-time Jeopardy! Champion http://www.ncge.org/conference

Education

Dates: August 1 - August 4

Location: Denver Colorado

"NCGE is dedicated to expanding and improving geography education in U.S.

schools and contributing to the development of highly qualified geography teachers.

Attend the 2013 conference and connect with your geography education commu-

nity. Attend the 2013 conference in Denver to exchange ideas, research, resources,

and best practices in geography education." Relevant for teachers at the K-12 and

university level.

29th Annual Conference on Distance Learning and Teaching 20

education/training." Keynote Speakers: Dr. Richard Baraniuk, Dr. Sally Johnstone Organized by the University of Wisconsin-Madison; Distance Education Professional Development, Division of Continuing Studies.

World Congress on Education Dates: September 2 - September 4

Location: London, England "The aim of WCE is to provide an opportunity for academicians and professionals from various educational fields with cross-disciplinary interests to bridge the knowledge gap, promote research esteem and the evolution of pedagogy. The WCE-2013 invites research papers that encompass conceptual analysis, design implementation and perfor-

A conference for "physics teachers ranging from pre-college through research universities." With workshops on: "the teaching of online courses, the authoring of

Common Core State Standards **Networking Conference**

"The Common Core State Standards Networking Conference is a first-of-its-kind event that will feature proven tools and strategies for implementing the Common Core State Standards and other rigorous standards through the Literacy Design Collaborative (LDC) and the Mathematics Design Collaborative (MDC)."

2013 PKAL Summer Leadership Institutes for STEM Faculty Dates: July 23 - July 28

national context for STEM leadership. • practice the art of successful communication and negotiation.

• learn about communication style and develop an appreciation of how differences

in communication styles, experience, and backgrounds enhances dialog and projects.

regarding the creation of effective learning environments for all STEM learners. Offered through the American Association of Colleges and Universities http://www.aacu.org/pkal/events/sli/index.cfm

MathFest 2013

 Complex Geometry Research and Accessible Problems Climate and Geophysical Modeling Recent Developments in Mathematical Finance

Date: August 1 - August 2 Location: Oklahoma City, Oklahoma "This conference is the major professional development activity for Oklahoma

National Conference on Geography

http://www.uwex.edu/disted/conference/

Date: June August 7 - August 9

Location: Madison, Wisconsin

This conference "provides an exchange of current resources, research, and best prac-

tices from around the world that are relevant to the design and delivery of distance

mance evaluation." http://www.worldconedu.org/

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Education

End.