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**USING INTERACTIVE TECHNOLOGIES
IN AGRICULTURAL EDUCATION**

A Derecho and Technology: What do They Have in Common?

As I write this editorial West Virginia and a number of surrounding states are recovering from a derecho, a storm with straight line winds (winds were in excess of 70 MPH in West Virginia). The National Oceanic and Atmospheric Administration (NOAA) describes a derecho as “a widespread, long-lived storm that is associated with a band of rapidly moving showers and thundershowers.” The line of storms started near Chicago and swept across the Eastern section of the United States. The storm resulted in massive damage along its wide path. Trees were uprooted, split and/or mangled. Electrical and telephone lines were down. It is estimated that it will take seven to fourteen days (or more) to restore electricity to everyone in the area.

The loss of electrical power emphasizes just how dependent our economy, and society in general, is to technology. In many cases communication and the local economy came to an immediate halt. Personal lives were changed radically. In many areas, telephone communication was limited to cell phone service. On a good day cell service is limited to nonexistent in the rural areas of West Virginia. The limited cell service was dependent on the ability to recharge phone batteries. Service stations could not provide gasoline because there was no power to run the computerized pumps and cash registers. Many homes had no source of storing and preparing food. In some local communities water was shut off because there was no electricity to operate the pumps and/or purification system. Over the past two days, the economy of West Virginia has hit a screeching halt because there was

no electricity to operate the various technologies that we have become accustomed.

Today's youth have grown up with technology including cell phones, computers, the Internet, etc. Many of our high school students would struggle if they did not have access to these advanced technologies. I am going to tell my age with the following statement, but I remember when the personal computer was introduced into the West Virginia agricultural education classrooms. As teachers we were encouraged to develop individualized instruction modules to supplement our day-to-day instruction. Opponents to the introduction of personal computers argued that computers would eventually replace the teacher. That has not happened and probably never will.

The teacher is the key figure in the classroom. Students' successes in and out of the classroom depend on the abilities of the classroom teacher. I do not see that changing. Today's teachers embrace technology and infuse it into their classroom to increase the success of their students. Could a teacher be successful in the high school classroom with the technologies of the early 1980s? I am talking text books, chalkboards, typewriters, mimeograph machines, film strip projectors, etc. A good teacher could survive and be successful with the tools that he/she is given. That gives rise to a better question: why should a good teacher be content with these antiquated technologies? The good teacher will not be satisfied and will take the necessary steps to make certain that he/she is using every possible advantage to enhance student learning.

As a practicing agriculture education teacher, how do you stay abreast of these changing technologies? First, I think that it's impossible to learn every new fad that is presented to the public sector. With that said, it is your job as a professional to learn new technologies and how they might impact your day-to-day teaching activities. Just as you select your curriculum to match your areas of expertise and your students' needs, you must carefully select the technologies that you will utilize in the classroom.

I remember being told that I would learn more in my first year of teaching than I did in four years as an undergraduate. I can verify that this was a true statement. The learning does not stop at the end of the first year. The learning continues throughout your professional career. This continuous professional development must include new and emerging technologies. You are “cheating” your students if you do not use the resources, including technology, available to you.

One way of learning about new technologies is to read professional publications such as *The Agricultural*

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Articles and photographs should be submitted to the Editor or Theme Editor. Items to be considered for publication should be submitted at least 90 days prior to the publication date of the intended issue. All submissions will be acknowledged by the Theme Editor and/or the Editor. No items are returned unless accompanied by a written request. Articles should be approximately four double spaced pages in length (1500 words). Information about the author(s) should be included at the end of the article. Photos and/or drawings appropriate for the "theme issue" are welcomed. Photos/drawings should be submitted in an electronic format (jpg or tiff format preferred - minimum 300 dpi). Do not imbed photos/drawings in the Word document. A recent photograph (jpg or tiff format preferred- minimum 300 dpi) of all authors should accompany the article unless photographs are on file with the Editor. Articles in the *Magazine* may be reproduced without permission but should be acknowledged.

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Riding the Technological Wave of Change in Agricultural Education

by Douglas D. LaVergne

In 2012, it is safe to say that everyone is familiar with the catch phrase: “We live in a digital society.” Ever more so than in previous generations, the aforementioned axiom has often been of choice rather than necessity in agricultural education. Yes, many of us have implemented online-record book keeping and have changed out our VHS tapes with DVDs but the latest report given by the National Center for Education Statistics (2010) reveal that when it comes to incorporating technology into K-12 classrooms, agricultural educators rank near the bottom in interactive technology training, availability, and classroom use (NCES, 2010).

With these realities in mind, and the fact that technological advances seems to be the new trend in public education, teachers are now faced with an ever increasing challenge of keeping their students actively engaged using 21st century technologies. Blogs, Wikis, classroom response systems, and social networking sites

are increasingly being integrated into secondary educational classrooms at a frantic pace. It is not to surprising to learn that a school district in Arizona invested \$33 million dollars in educational technologies such as laptops and interactive screens in every classroom. Additionally, as advanced educational requirements leave students with fewer elective opportunities, it would be wise for agricultural educators to revisit their curriculums and devote more time in designing lessons and activities that will blend creative educational technology with traditional agricultural education methods.

With the theme set, I believe the following articles provide insight into how agricultural educators are indeed incorporating 21st century methods into their programs and curriculums nationwide. Additionally, if there is one thing that I hope readers get, it is the fact that the authors have successfully implemented these technologies without selling the farm. With budget issues becoming ever more prominent, I strongly believe that teacher

creativity is essential. Maximizing the power of new technology can be achieved by adjusting and tweaking many of the examples in the articles. Of course it is critical that you will need to be versed in the technology! As such, this is where I hope as colleagues we can combine our knowledge to advance others in profession. Certainly, this is an exciting time to be a teacher. The success of the technological integration in agricultural education demonstrates that agricultural education is still relevant in a digital society.



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A Derecho and Technology: *continued from page 2*

Education Magazine. In this issue, Dr. Douglas LaVergne, July-August Theme Editor, has assembled a number of authors who were willing to share their knowledge of technological applications in the high school agriculture classroom. The suggestions range from using cell phones in the classroom (in a good way) to creating polls to keep your students interested and involved in your classroom activities. Read their suggestions and think about how you could incorpo-

rate the ideas into your classroom. Select one or two of the ideas that you feel will have the most impact for your students and implement it/them. One good thing about many of these suggestions, you can implement them with little or no financial investment on your part.

Technology is somewhat like a derecho, long lived and rapidly changing, however, unlike a derecho evolving technology is a constant in

our lives. The level of success that we achieve as teachers will depend on the degree that we search out and implement the most promising practices. Look for techniques that match your professional philosophy, teaching techniques, and the needs of your students. Don't allow over dependence or fear of technology shut down all educational activities in your classroom like the derecho shut down power for many areas.

Harnessing Interactive Technologies to Serve Generation Z

by Kim Miller, Theresa Pestl
Murphrey, and Samantha Alvis

Think back to when you first used a computer. Perhaps it was an Apple 2E with its blinking green box on a blank screen anxiously awaiting input of hundreds of lines of MS DOS code. Maybe it was something more modern. Regardless, it is difficult NOT to recognize how dependency on computer technology has evolved. Technology is an ever-changing element of the successful student, teacher, and classroom.

In 1975, Steve Jobs, co-founder, chairman and late CEO of Apple, Inc., stated that “Computers themselves, and software yet to be developed, will revolutionize the way we learn” (Sheff, 1975). This statement has become reality. Not only does society as a whole depend on technology daily, but today’s “digital native” student body is grounded in technology and is, by nature, more demanding of effective ways to learn and interact using technological tools.

According to a study completed by Grail Research (2011), Generation Z, today’s high school students, were born between 1995 and 2009. They are exceptionally comfortable with all types of technologies, utilize them with ease and prefer using media that is interactive (as opposed to just watching TV) (Grail Research, 2011). This insight provides educators the opportunity to work even more effectively with Generation Z students by incorporating technologies that meet their needs.

Agricultural Educators have access to an abundance of interactive

technology choices. The key is identifying tools that: a) a teacher can share and use effectively, b) a student can use effectively to learn, c) is not expensive, d) is not distracting, and e) complement the learning process. With these factors in mind, teachers can examine current interactive tools and consider simple ways to incorporate them into different lessons and activities. The key to success is developing a strategy for effective use.

Creating a Global Classroom - Connecting your Classroom Around the Globe - The Skype Hype

Guest speakers are a great way to connect students to industry, refresh the classroom routine, and enlighten students about opportunities that await them after high school. Making arrangements for guest speakers to come to your classroom during school hours can be tough. While most all individuals invited to speak to a class are generous with their time, it would be beneficial for everyone involved to use a more efficient method of hosting guest speakers.

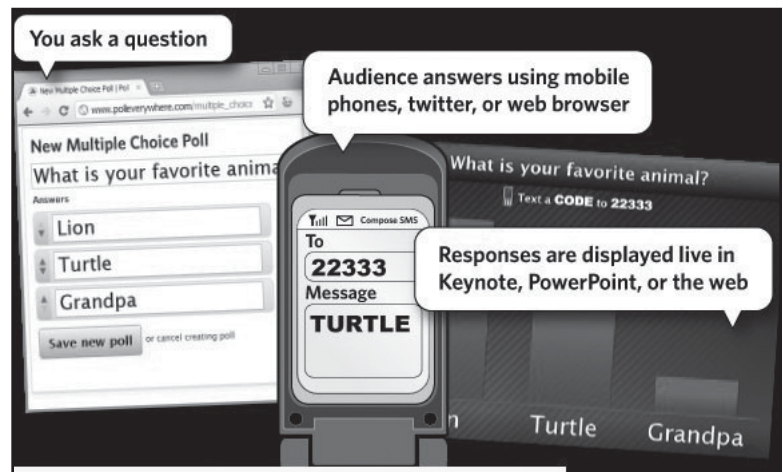
Enter Skype™ (<http://www.skype.com>), an interactive video, land-line or mobile phone method of connecting to anyone in the world for a chat. With Skype™, educators can

connect their classroom to anyone in the world. Skype™ accounts are free and video or voice chats are free when both parties have a Skype™ account. Imagine bringing a member of the Peace Corps who is currently in Africa to your classroom or an agricultural pesticide specialist on location to discuss pesticide application and answer questions during the process. Skype™ is interactive and real time. While nothing beats in-person interaction, Skype™ opens doors and windows to a larger pool of specialists and industry professionals around the globe who have the potential to enhance students’ learning.

Need even more educational guidance to connect your classroom? Check out Skype for educators at <http://education.skype.com/>.

Cell Phones DO Have a Place in the Classroom

Cell phones can be a distraction in the classroom, and it is quite possible that most schools across the country do their best to keep students OFF of their phones during class through-



Polleverywhere™ offers a text polling service that can be used in a high school classroom.

out the school day. However, there is a way that cell phones can be used in a more constructive manner.

A website called Polleverywhere™ (<http://www.polleverywhere.com/>) offers a text polling service. For classrooms of up to 40 students, polling is unlimited and free. The company also provides K-12 and post-secondary discount plans for larger groups of students participating in one poll.

Essentially, a student's cell phone becomes a personal response clicker, with no cost to the school. Creating a text poll is simple and easy, with customizable feedback options and responses shown in real time. There are also options to post to Twitter™, another popular interactive messaging network, and download to a PowerPoint™ or Prezi™ for saving and sharing purposes. Examples for use



A student's cell phone can become a personal response clicker.

include: a) assessing where to begin a new topic by polling students on their previous knowledge, b) creating a lecture that includes periodic polling about a subject or debate, and c) gauging preparedness of a class by using polled test responses. Parameters can be set to accept multiple answers from the same phone so that a buddy system can be put in place for students without cell phones.

Potential Drawback: Although this is a free polling and feedback service, regular texting charges from cell phone providers will apply.

Social Networks - Not Just for Socializing Anymore

Most people have at least heard of Facebook™, many have a page, and some in our profession are among the 901 million active monthly users of the most popular social networking site. The opportunities to use Facebook™ for educational purposes are plentiful and far more intriguing than the standard issue “Like us on Facebook™” plea.

Users of Facebook™ have the ability to create a page for a variety of different purposes. For educators, this could include creating a page or group for each class to come together virtually and discuss topics outside of class time, a subject themed page for posting videos or websites, or a page where students are asked to post information to enhance a topic or ongoing discussion. The ability to cancel and recreate pages at will allows teachers and students to start fresh with new information when needed.

A key element to using Facebook™ successfully is keeping personal pages and IDs separate from “school” pages and IDs. “Tagged” photos of personal social events have no business on a class page. However, with Facebook™ being a free online

network, both teachers and students can create separate pages and profiles for their school work, therefore maintaining their professionalism and academic integrity.

Teachers who create class pages or groups have control of these pages, with the ability to set the page settings to private or public, and approve those who request to join the group or page. This provides the opportunity to scan pages for appropriately created “school” pages.

Using a Facebook™ page or group successfully requires a strategy for engaging your students. Social media defines what it is in its name—it's social. Develop a strategy that will allow you to engage your students -- one-way engagement isn't enough. Consider regular posts to your page, as well as a variety of posts that are designed to engage students. Fill-in-the-blanks, contests and social media “show and tell” are all methods that can encourage engagement.

As part of a successful strategy to use Facebook™ in the classroom, provide clear instructions to students on page creation and usage -- explaining to students to be sure NOT to “friend” personal pages. Articulating rules for posting on the teacher created page and brief face-to-face follow-up discussions in class are critical for students to clearly understand using Facebook™ for academic purposes.

Before integrating social networking into your classroom, be sure to check your school district policy on social media use.

Need a little more help before you are ready to integrate Facebook™ into your classroom? Check out Facebook for Educators -- <http://www.facebook.com/FBforEducators>.

Explore Your Options

Incorporating new technologies into lessons can be time consuming, but serving our technologically driven students with interactive technologies that enhance their educational experience is exciting and worth the time. Remember that technology can improve with age – if you have tried a technology previously and failed – try again – it might have evolved and become more user-friendly.

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Upcoming Themes

September - October *The CASE Initiative*

The Curriculum for Agricultural Science Education™ (CASE™) project has developed a structured sequence of agriculture courses and serves as a model for elevating the rigor and relevance of agricultural education. This issue will explore the successes of the CASE™ curriculum in agricultural education.

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November - December *Successful Programs and Their Traditions*

There are many successful agricultural education programs across this nation. With success come traditions. In this issue agricultural education programs will share their successes and traditions.

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Bringing the FFA Into the 21st Century

by Maegen Williams

In 1950, the 81st Congress of the United States granted a Federal Charter to the Future Farmers of America recognizing the importance of the organization as an integral part of the vocational agriculture program (National FFA Organization, 2012). At that point, the legislators in Congress probably never imagined what education would look like in the 21st century. During the 1950s, computers were just being introduced. The Electronic Delay Storage Automatic Calculator (EDSAC), the first stored program computer, was about the size of a small house (Oxford, 2009). Who would have thought that in 2012, we would have ready available access to computers in our schools and classrooms?

Just as the National FFA Organization has experienced some changes over the years, it is probably time for us as agriculture teachers to consider how we teach about the FFA in our courses. In many introductory agriculture courses across the country, students are learning about the history and traditions of the FFA. However, there is a variety of approaches to teaching the FFA unit common in most agriculture classrooms. Some instructors may lecture students on FFA history facts. Some might have students memorize and recite the FFA Creed and Motto. Worksheets might be used to have students fill in key words of the creed or mission as a substitute or a supplement to oral recitation. Although chalk, blackboards, and textbooks are still essential components for educating students today, students want a classroom experience enhanced through technologies. Therefore, in order to engage this gen-

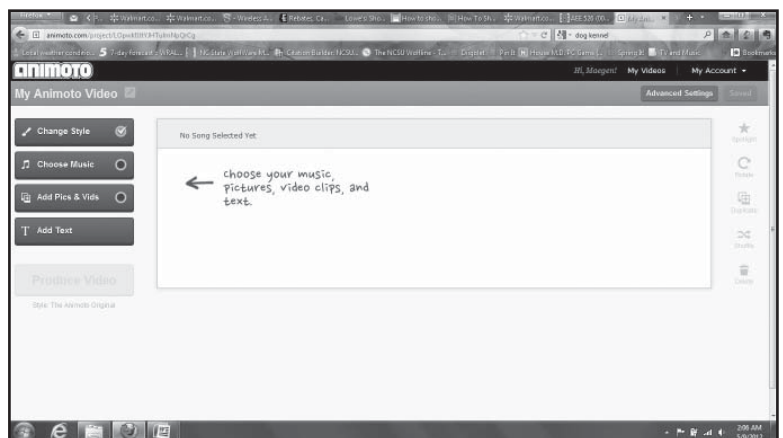
eration, we must incorporate a greater level of technology into our schools (Munro, 2012). Furthermore, enhanced technology is moving instruction to 21st Century learning environments with “instructional practices ... more rigorous (higher order on Bloom’s taxonomy), student centered (more constructivist) and relevant (real world)” (Munro, 2012, Instructional Change). This article will provide a brief introduction of several technological tools with explanations for use, screenshot examples, and ideas for integration. With access to computers in our schools and classrooms and a multitude of technology tools that are readily available and inexpensive, instruction on the FFA can easily be modified to reflect the 21st century learning environment.

Animoto (<http://www.animoto.com>) allows you to turn photos, video clips, and music into videos. Animoto can be used as an advertisement of your local FFA chapter. Pictures and video clips of your FFA chapter activities can be included to create interest among new students.

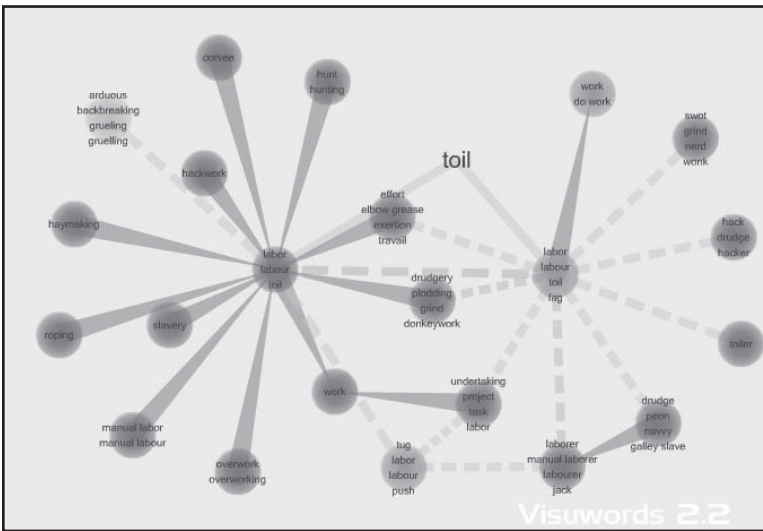
Please note that a free account of Animoto only allows 30-second videos. As an educator, you can apply for a free Animoto Plus account (<http://animoto.com/education>) giving you access to download-

able full-length videos. Creating an Animoto video is relatively easy. To begin, click “Create Video.” Next, Animoto allows you to choose a style for your video and add your images, videos, music, and text. You may also use the “Spotlight” feature to highlight images. When you are finished, click “Produce Video.” Lastly, you can share your video via Facebook, YouTube, Pinterest, and more!

Webquests are an excellent way for students to utilize and develop their 21st century skills. Johnson and Dufall (2004) define a webquest as an activity designed to allow learners to use the Web for analyzing, synthesizing, and evaluating information. As you may recall, analyzing, synthesizing, and evaluating are higher order thinking skills according to Bloom’s taxonomy (Bloom, 1956). These skills are necessary for students “to become contributing members of their communities and lifelong learners” (Alston, Miller, & Williams, 2003, p. 39). Educational Broadcasting Corporation (2004) states webquests can be as short as a single class period or as long as a month-long unit; usually involve group work, with division of



Animoto allows you to turn photos, video clips, and music into videos.



Visuwords is an online graphical dictionary and thesaurus.

labor among students who take on specific roles or perspectives; and are built around resources that are pre-selected by the teacher.

There are six essential components of a webquest:

1. Introduction – Provides necessary information and sets up the activity.
2. Task – An interesting and concrete formal description of what students will have accomplished by the end of the WebQuest.
3. Process – A step-by-step description of the process to be used for the task.
4. Resources – A collection of information resources needed to complete the task.
5. Evaluation – Guidelines on how to organize the information acquired (questions that should be answered, etc.).
6. Conclusion – A closing lesson that reviews what the students have learned (Educational Broadcasting Corporation, 2004).

A webquest is a web page including the six essential components. For

the webquest, they will need access to an internet-connected computer per group.

For one of my classes, I created a webquest for the FFA. The link is <http://ffawebquest.wikispaces.com>. In this webquest, each group will be assigned a topic. Students use the listed questions to help begin their research. As they do the research, they may find other questions that they want to answer. The resources page gives a list of websites and search engines to assist in their research. To evaluate their progress, students will then create a multimedia presentation (i.e. PowerPoint or Prezi) to share what they have learned with the class.

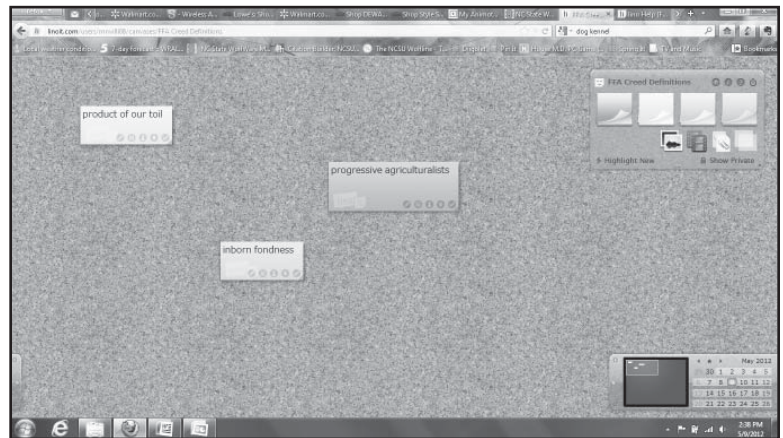
Students should use the scoring guides to assist their work.

Visuwords (<http://www.visuwords.com>) is an online graphical dictionary

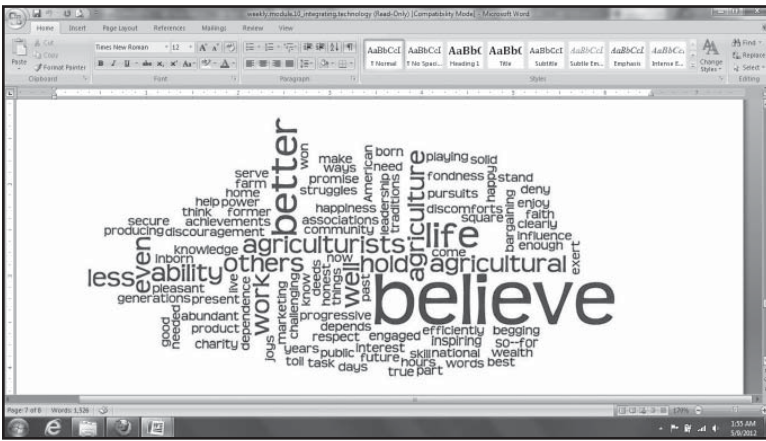
example, Google Sites (<https://sites.google.com>) provides web page templates and themes so all you have to do is add your information. For your students to complete

and thesaurus. As our students recite the FFA Creed, we, as teachers, must consider if they truly understand the meaning of each of the words and the creed as a whole. Some of the vocabulary included over the course of the five paragraphs may be unclear to students. For example, progressive agriculturalists, product of our toil, and inborn fondness can be confusing for a ninth grader. To use Visuwords, simply enter a word into the search box and press “Enter”. Then, watch the graphical connection between words appear. Students can clearly see connections between words and hover over nodes to view the definition.

Using the Visuwords online graphical dictionary and thesaurus can serve as an excellent way to open the discussion on vocabulary specific to the creed and make sure students understand the meanings. To guide the discussion, try using Lino (<http://www.linoit.com>). Lino allows users to post web-based sticky notes on a canvas. Have students post the unfamiliar words and definitions to a shared canvas. Then, use the canvas to guide a discussion to ensure the students understand the meanings of the words. To use Lino for this purpose, create a new group to share canvases and stickies with your students. When it is time to begin the



Lino allows users to post web-based sticky notes on a canvas.



Wordle allows the creation of word clouds from text.

discussion, open the canvas. All the students' unknown words and definitions will appear in one place.

Wordle (<http://www.wordle.net>) allows the creation of word clouds from text that you provide. The more frequently the words are used in the text, the bigger the words are in the word cloud. We can use Wordle in the classroom with the FFA Creed. Since Wordle emphasizes words used most frequently in the FFA Creed (i.e. believe, better, agricultural, life, work, and ability), this can lead to a discussion about why those words are important. This discussion is also a good review of the words learned from Visuwords. To use Wordle, copy and paste the FFA Creed in the space provided, and then click "Go". Wordle will automatically produce a word cloud for you. However, Wordle provides a variety of fonts, layouts, and color schemes to customize the cloud.

Many teachers have students recite the FFA Creed or at least the first paragraph. Unfortunately, memorizing the FFA Creed utilizes lower level thinking skills according to Bloom's taxonomy. One way students can use higher order thinking skills is by evaluating themselves. Therefore, try videotaping your students reciting the FFA Creed via Flip Camera or smartphone and uploading it to **YouTube**

(<http://www.youtube.com>). Under the "Basic Info" make sure you set the privacy to "Unlisted" to ensure that only people with the link can access the video

or "Private" which allows you to enter the student's email address or YouTube username. Then, share the video with the students by emailing each student their customized link (unlisted privacy) or by entering his/her email address (private privacy). Have students view their video and write a paragraph evaluating their performance (what they did well, what they could improve on, etc.). Furthermore, parents love to see what their children are doing in school. Sharing the video of their child could create some great networking opportunities.

Today, teachers have an unlimited number of ways to integrate the use of technology in the classroom. While FFA units commonly begin with history dating back to the early 1900's, I have shared just a few technology tools that can help bring instruction and activities into the current century.

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Becoming Technologically FIT: We Are Going to Pump You Up!

by Nicholas R. Brown and Marshall A. Baker

Why You Need to be FIT? Our society is changing rapidly. We are bombarded every day with advertisements about the newest workout equipment or diet pill. Lets face it – Americans know they should go to the gym, exercise, and eat more healthy foods. We also know that if we do these things we will feel better, live longer, and perform better at work. Well, we have some good news for teachers who don't particularly love eating salad or doing pushups. You never have to wear a sweatband or jump rope to become technologically F.I.T. (National Research Council, 1999). Although technological FITness does not require you to eat celery or breakout into a sweat, it does require some work. And, like a trip to the gym, maintaining technological FITness will be very rewarding to you and your students.

So what is technological FITness and what does it have to do with teaching agriculture? An educator achieves *Fluency with Information Technology* (FITness) when he or she deeply understands how information technology functions, learns to enhance educational outcomes utilizing new technology, and develops a professional habit of discovering and learning the educational utility of new technology as it becomes available (Brown, Baker, Edwards, & Robinson, 2011). Many of us who “work out” do not consistently maintain a rigorous exercise schedule. The same is true of professionals when examining their practices associated with learning to use new technology. In

fact, the National Research Council (1999) stated, “Many who currently use information technology have only a limited understanding of the tools they use and a (probably correct) belief that they are underutilizing them” (p. 1). Digital natives (those students who were born into the information age) are naturally inclined to be technologically FIT (Prensky, 2001). Agricultural educators must adopt a plan to stay ahead of the curve and engage these FIT digital natives. When students are actively engaged in the learning process they perform better on tests, are less likely to become high school dropouts, and are more effectual learners (Croninger & Lee, 2001; Greenwood, Horton, & Utley, 2002; Klem & Connell, 2004). In response, we decided to collaborate with faculty members at Oklahoma State University to develop a “workout” to establish technological FITness among our pre-service teachers.

Our Workout

All good exercise programs start with a good plan and that plan, many times, includes a consultation session with a skilled trainer. We (the skilled trainers) decided to design and deliver to student teachers a three-hour technological FITness consultation session during the “block” that occurs during the first four-weeks of the student teaching semester. This session incorporated a brief discussion of the importance of becoming technologically FIT and included an introduction to several new online technologies. We only focused on online technologies in an effort to introduce tools that all student teachers could access at their cooperating centers. Student teachers were encouraged to explore these new technologies and

develop a plan to implement them in their classroom. Furthermore, each student teacher was challenged with the task of discovering a new technological resource to utilize during their internship experience. The following technologies were introduced:

Livebinders™ (www.livebinders.com) is an online resource that allows users to create virtual three ring binders for class projects, course curriculum, or other FFA resources.

Linoit® (www.linoit.com) is an online virtual “cork board.” Linoit® can be used to create and post statements/ideas to an online backdrop from desktop computers, smart phones and other devices. Linoit® is an effective sounding board for virtual discussions.

Prezi® (www.prezi.com) is a web-based alternative to the popular presentation software, PowerPoint®. Prezi® allows the instructor to display presentations via an online connection. Prezi® exhibits a more fluid navigation scheme than that offered through the traditional, slide-based program.

Poll Everywhere (www.poll-everywhere.com) is an interactive website where students can pose questions or post opinions via text message. The polling website can be a great tool for FFA chapter development.

SaveTube (www.savetube.com) is an online tool that allows the user to save YouTube videos as MP4 files. Many school districts do not allow educators to access YouTube at school. SaveTube allows educators to find videos and download them to be saved on a computer as a perma-

nent file. This software also eliminates the risk of students being exposed to inappropriate comments that could possibly be posted by random viewers on YouTube.

Gym Fees

We have great news! Unlike expensive gyms, this FITness program can be cheap! All five of the technologies we included in our FITness consultation session were free web-based tools when used by teachers for educational purposes. Our workout only required access to a high speed Internet connection, computers, and a current web browser. Student teachers were encouraged to seek out other free Internet tools before they pursued technology that required paid subscriptions or costly purchases.

Workout Results

Our workout plan was a tremendous success. Student teachers responded positively to our challenge to become technologically FIT and incorporated many of our example technologies into their lessons taught on campus before entering the student teaching field. Once in the field, the student teachers found creative means to incorporate several online tools into their lessons and FFA activities. For example, one student teacher reported using Livebinders™ to organize resources for all of the Career Development Event teams at their cooperating center. This proved to be a very effective tool due to the fact that students had access to the resources anywhere the Internet was available. Another reported using Linoit® to practice discussions of motions with their FFA parliamentary procedure team. Prezi® was quickly diffused into the classroom setting as most student teachers indicated they not only used Prezi® to teach, but also incorporated the technology into class assignments and encouraged

students to learn the new tool as well. One teacher stated “my classroom became a community of practice as we all learned how to use this fun new presentation technology together” (C. Jones, personal communication, October 17, 2011). In the end, most Oklahoma State University pre-service teachers indicated they were challenged by the FITness workout and were excited to continue their pursuit of new technology.

Planning Your Workout

So how can you plan your workout and start the adventure of becoming Technologically FIT? First, spend some time online exploring the technologies we included in our workout. Second, talk to your students – they are digital natives and they will have great ideas about infusing new technologies into your program. Third, start an informal community of practice in your school or with other agricultural education teachers in our area. Finally, have fun learning how to use new technology. Your digital natives will embrace the new you!

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Using Interactive Technologies to Enhance Career Development Event Team Training

by Katie Pound

When training Career Development Event (CDE) teams, you may use your tried and true practice methods or you may be experimenting with what works best for you and your students. However, as our students become increasingly tech savvy, the incorporation of a few interactive technologies can enhance student learning and engage them more fully. There are several technology tools you may find helpful in preparing your next winning CDE team!

One of the skills crucial to success in most any CDE is memorization. It also happens to be one of the more dull areas to teach which can hinder both student and teacher motivation. There are several technology tools that will help your team achieve learning outside the scheduled practices and make memorization more interesting. One such tool is called Ediscio (<http://www.ediscio.com/>). This website allows students to create digital flashcards with text or photos and share them with their teammates. The site offers a helpful way to share resources among all team members. It also allows teachers to monitor student progress and establish a learning schedule, digitally assigning a certain number of cards to review each day. As an example, a coach could have a Meats Evaluation and Technology team make digital flashcards for the retail meats cuts on their identification list. Outside of practice time, students can share flashcards with one another online while saving resources (paper) and being free to access them anytime and anywhere with an Internet connection. The ability to use pictures as one side of the flashcard

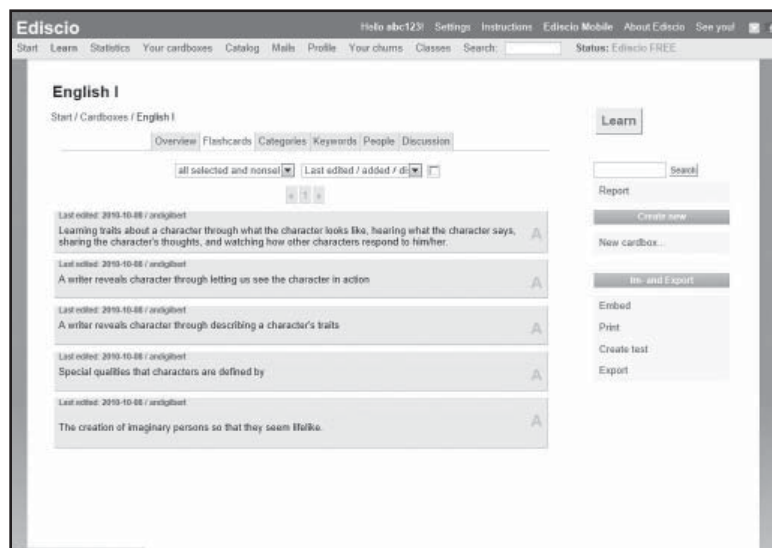
makes this website especially suitable for not only Meats Evaluation and Technology teams, but Evaluation (Livestock, Poultry, Dairy, and Horse), Floriculture, Dairy Foods, Forestry, and Nursery and Landscape teams too.

loaded, students can choose or upload their own music to sync the images too. Once completed, a slideshow will be rendered quickly and students can post them to their Facebook pages or send them to teammates via email.

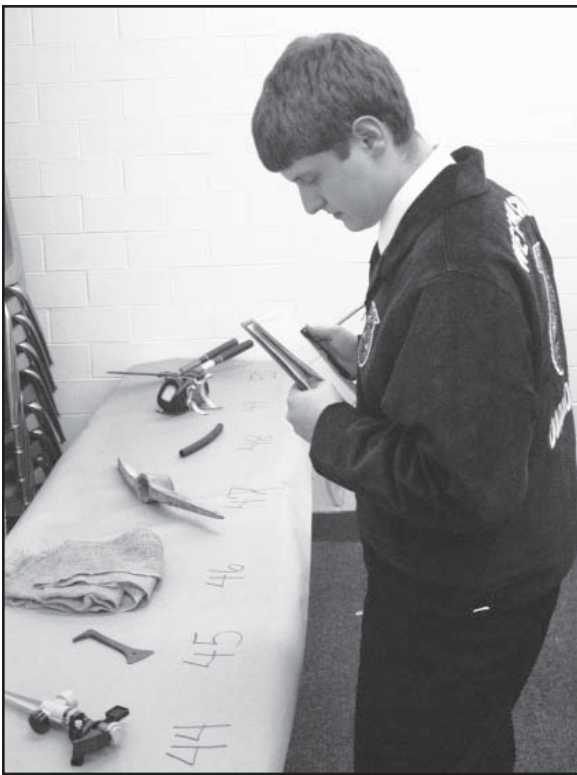
Today, teachers have an unlimited number of ways to integrate the use of technology in the classroom.

Another tool to help with memorization related to photo recognition of plants or animals is called Animoto (<http://animoto.com/>). This site that allows students to create and share photos by creating slideshows. Team members could utilize Animoto to make 30 second slideshows with a variety of pictures illustrating either identical (all pictures of Redbuds) or multiple (breeds of cattle) parts of similar items. The website allows users to enter text and PowerPoint slides (saved as .jpg files) so written information can be included as slides too. Once the 12-15 frames of images or text have been selected and up-

Another collaboration tool that will help students learn by compiling and organizing their own information on a topic is Google Docs (<https://docs.google.com/>). Many of us are aware of the beauty of Google Docs as a collaboration tool and cloud storage site and it can also be applied to CDE practices. Students can use the Doc component to take group notes and the Presentation tool to compile photographs and information when



Ediscio allows students to create digital flashcards with text and photos and share them with their classmates.



ate and improve outside of practice time. As a teacher you can also benefit from these videos by using them to recruit interested students and coach future teams. For example, a Livestock Evaluation team could videotape themselves discussing how to give oral reasons and then provide an example for the camera. This technique could also be used with Extemporaneous and Prepared Public Speaking, Creed Speaking, and Agricultural Communications CDEs.

Beyond practices and assignments for team members, there are other ways teachers can use technology to enhance their CDE teams.

It would be useful to become a member of the social bookmarking site Diigo where you can bookmark and tag online resources for teams as you find them throughout the year. This site is convenient because it allows you to bookmark as many web links as you want without crowding your browser. Also, the use of Diigo or another social bookmarking site allows you to tag items based on topic so they are organized and easy to find when needed. You have the option to follow what other CDE team members are bookmarking, which can actually save a lot of the work of finding these resources. Teachers could also form a network with other agriculture teachers coaching the same CDEs in an effort to share bookmarked resources.

Another technology tool teachers might find beneficial would be to have a Google Blog, through Blogspot.com, dedicated to the team that the members are responsible for updating. Participating in this blog could perhaps increase the value of the ex-

perience to administrators who could gain a firsthand account of the practices and competition. The upkeep of a blog would also be a good writing exercise for students, increasing the academic value of CDE participation. Parents or other groups supporting the team through donations of supplies or funds can also be invited to follow the blog. Lastly, the blog can also be something to show off when recruiting team members for CDEs.

Using technology to facilitate collaboration and engagement of students can assist in the preparation of better CDE teams. The technology highlighted here allows students to create their own resources and share them among teammates. This provides the agriculture teacher with a responsibility to supervise and ensure the materials are correct but not shoulder the entire workload necessary for the accumulation of preparation materials. And if you are particularly anxious about using technology, one of the great things about our students being so comfortable with technology is that they can often show us how to use it, so don't hesitate to use them as a resource as well. Hopefully, you will enjoy the benefits of incorporating technology into coaching your CDE teams and perhaps translate some of it into your classroom as well!



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both are necessary. For instance, a Floriculture team could assign each member of the team a greenhouse pest, disease, or disorder to research independently and the pictures and information on the life cycle and management method could be compiled together in the presentation where all the team members can access it for independent review. Teachers can also use the Forms component to create online surveys for students in order to figure out what CDEs students are interested in participating in at the beginning of the year. Motivation is a key component to having a successful team, so student input will improve your chapter regardless of the CDEs they choose.

For events involving less memorization and more oral presentation, many students would benefit from videotaping themselves practicing or explaining the event. Most cell-phones, smart phones, and digital cameras have video cameras ready for use. Videotaping and watching the footage allows students to self-evalu-

Win Big With Flipping (Without Being an Olympic Athlete)

by Sarah Quigg

Flipped classrooms are a hot topic in education. Instead of spending valuable class time lecturing, teachers are asking tech-savvy kids to obtain the notes at home for use during class time to complete activities, projects, or labs. The concept makes perfect sense and kids are buying in, but are there resources out there for the already overworked agriculture teacher? Let's take a look at several interfaces, websites, and web tools that are readily available alternatives to chalk and talk, maximizing our face-to-face time with students.

The central element to every flipped classroom is some form of a website. Essentially, students must be able to access course materials (videos, websites, review games, files) completely online whether they are at home, at the local library, or on the bus with their iPhone. If your district does not provide an interface like Moodle or Blackboard, creating your own free website using Edmodo, Wordpress, or GoogleSites is now easier than ever before. Edmodo (<http://www.edmodo.com/>) shares a similar format to Facebook and is equally as easy to create, making it convenient for setup and easy for students to follow. Wordpress (<http://wordpress.org/>) can create extremely professional sites and is starting to be used by several secondary institutions to manage their homepages. Finally, GoogleSites (<https://sites.google.com/>) is very user friendly and requires very little experience for a teacher to develop and make changes to the website. In addition to providing convenience for students, these online venues allow busy

teachers to make updates at home as well as at school.

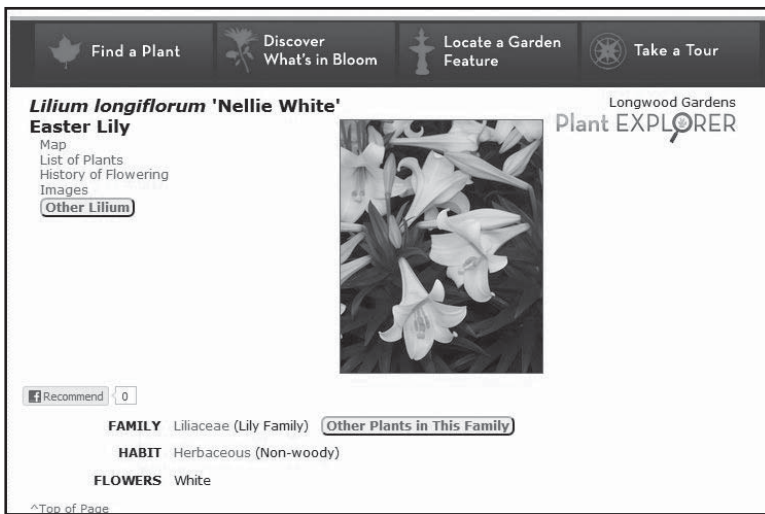
Next, one of the biggest challenges with flipping is finding good replacement material for lecture. Assigning textbook and ancillary reading material is a good start, but most students benefit from hearing content being explained in addition to reading or advancing through PowerPoint slides. Obviously recording your own lectures would be ideal, but not all teachers have the tools or time to make this a

as well as certifications achieved. Finally, for material that simply cannot be covered by someone else, Jing (<http://www.techsmith.com/jing.html>) is a free screencast software that allows for the narration of 5 minute videos. Usually, these resources are not blocked like many similar videos on sites like YouTube. By providing links to these resources on their interface, teachers can select key information needed by students to build a foundation of knowledge at home before applying it in the classroom.

In a flipped classroom students must be able to access course materials completely online.

reality. Luckily, Bozeman Science (<http://www.bozemanscience.com/>) and Khan Academy (<http://www.khanacademy.org/>) have excellent text-based lectures that can be referenced to help students build a foundation in biology, plant science, genetics, and anatomy. TED (<http://www.ted.com/>) also has great lectures by scientists applying fundamental concepts or explaining new discoveries, helping students see the relevance of what they are studying. Briggs and Stratton's Power Portal (www.thepowerportal.com) also allows students to watch videos and take quizzes to earn certificates in several engine areas including compression, ignition, fuel, troubleshooting, and diagnostics. The site also allows instructors to closely monitor certificate attempts

Another instructional element is vocabulary acquisition. Although some in-class practice will be necessary, shifting the bulk of practice to homework can make class time more productive. One free web tool that is excellent in helping students review vocabulary is Quizlet (<http://quizlet.com/>). Students can create their own flashcard sets to share with classmates, or the teacher can create the flashcards and share the web link for the set with students. Quizlet allows students to practice the words in several ways, including matching, spelling, and quizzes. Students can compete against classmates or against themselves to improve their times or scores. The Ohio State University also has an excellent interactive skeletal anatomy game that allows students to match the names with



Larger companies often provide interactive websites that are beneficial to students.

bones to a skeletal diagram (<http://www.vet.osu.edu/assets/flash/education/outreach/games/skeleton/skeleton.html>). Students can study vocabulary concepts using photo organization programs like Pinterest (<http://pinterest.com/>). Rather than just studying and memorizing a photo of a specific living specimen, they can make boards on specific trees, wildlife, or dog breeds to see similarities and identifying characteristics. By incorporating these study tools into a class webpage, students will be able to come to class with the necessary vocabulary to be able to participate in meaningful class discussions. Labs can also be more productive when students are prepared with the objectives and protocol prior to class. Teachers can allow students to preview labs by providing links to online simulations, lectures, or other webpages that can help them complete guided pre-lab questions. To encourage completion, teachers can grade pre-lab activities or simply insist students only be allowed to begin the lab once the pre-lab questions are complete. Students will quickly learn that doing the work at home is expected in order for them to spend class time doing hands on activities.

Providing links to homepages, YouTube videos, and other virtual tours can expose children to the concepts without even leaving your classroom or even their own homes. For instance, virtual farm tours like the Kreider's Dairy Farm (<http://www.kreiderfarms.com/farmtour.php>) can lead to discussions on animal rights or management issues while live webcams of eagles' nests (<http://www.outdoorchannel.com/Conservation/EagleCam.aspx>) can spark interest in a wildlife course. Additionally, larger companies like Longwood Gardens now provide interactive websites that can also help students become oriented with their grounds/facilities before ever setting a foot on the premises (<http://plantexplorer.longwoodgardens.org/ecmweb/FindTour.html>). Even if you can take field trips, teachers may still use these resources to help students gain an understanding of where they will be going, what they can do while they are there. For instance, before visiting the world-renowned garden, the teacher can provide each group of students a list of plants to photograph, and they can use this web tool to locate the plants within the garden to make the most of their time while there. Finally, online services like

Finally, flipped classrooms can provide cost-friendly, liability-free field trip counterparts. Although physical exposure is preferred, sometimes online resources can provide the next best thing.

Skype (<http://www.skype.com/intl/en-us/home>) can also be used to virtually bring professionals into the classroom without the hassles of commutes and visitor badges. Having scientists or business owners appear on screen could immediately bring relevance to or increase the vigor of an activity, debate, or experiment.

In conclusion, there are already several free online resources for lectures, vocabulary practice, and online field trips for busy agriculture teachers that can effectively engage students in the learning process outside of their classrooms. If the resources are carefully selected and students are properly taught how to use them, teachers will be able to devote more class time to explaining complex material and providing additional hands-on experiences rather than having students mindlessly copy down notes or vocabulary words. So, if you want to make the best use of your teaching skills, take a leap of faith; trust that your students can use technology to teach themselves the basics, and devote your time to helping them apply their newfound knowledge. Remember, the resources are out there, so you don't have to spend hours training or secure sponsorships like Olympic athletes in order to flip (your classroom) like a pro.



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Smart Judging via SMART Board

by Andrea M. Kneer

Can you remember when you were new at something that now seems as if you could do it in your sleep? Take teaching as an example; while in college, was learning how to teach harder than you expected? Was developing lesson plans and defending your teaching methods a cloud of confusion when you first started? Did you ever wish there was a tool that could dissolve the cloud and set everything straight in your mind? Well, I found the answer for the FFA horse judging team members who were trapped in their own cloud of confusion.

This year I started coaching my third FFA horse judging team at Southern High School in Harwood, Maryland. Just as we improve our lesson plans for our classroom instruction from year to year I have been working on ways to improve my coaching methodology and delivery. The FFA chapter I am working with is in its first year of existence and the students that I am coaching have no prior competitive horse judging experience. We started with the basics: parts of the horse and coat colors. The students easily grasped the basics off of the printed handouts and worksheets I distributed mainly because they ride and show horses regularly and they had some knowledge of the subject already. When I started teaching them about conformation and balance, they got lost.

Even though the students were given several manuals describing balance through comparative graphics they were still confused and becoming frustrated. I tried simulating how a change in the angle of a horse's shoulder can affect the angle of the

hip and the proportion of the length of the back to the length of the underline by using my hands and some rubber bands. One day at practice an idea struck me and I lit up the Interactive Whiteboard (IWB).

IWBs are also termed SMART Boards which are electronic devices that connect to a computer, and are in turn connected to a multimedia projector. The projector casts the image from the computer onto the IWB and the user can control and manipulate the projected image from the com-

puter or by touching the IWB through software installed on the computer (Digregorio & Sobel-Lojeski, 2010). Even in our technology centered society, students who have never lived in a world without a computer are in awe of this interactive tool. Furthermore, allowing students to facilitate learning to their peers through the use of an IWB creates an experiential learning environment which is at the forefront of pedagogical teaching methods.

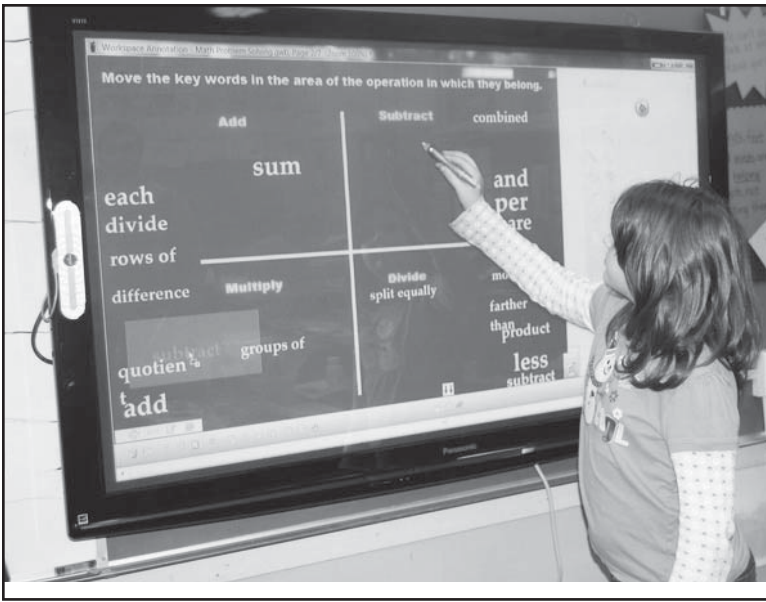
Interactive whiteboards, can provide a valuable coaching tool for preparing judging teams.

On the IWB I showed a picture of a balanced horse. In front of the students, I used the accompanying IWB pen to trace along the slope of the shoulder, the length of the back, the angle of the hip, and the length of the underline, creating a trapezoid. I also selected the protractor tool and asked a student to approach the board and use the enlarged protractor to

find the angle of the shoulder in degrees. We repeated the process for an unbalanced horse. I was able to drag the trapezoid from the unbalanced horse over top of the balanced horse to show the difference. Immediately, there was relief. We continued in this manner with pictures of horses that the students found from home until everyone had a clear understanding. We were also able to effectively compare the structural correctness of the horse's front and rear legs from the profile, front view, and hind view

by drawing lines along and through the legs on the IWB. This method of teaching balance and structural correctness to beginner judges proved to be effective as the scores of the students during practice improved from high 30s to high 40s out of a perfect score of 50.

The IWB was also valuable in the instruction of note taking, reasons formulation, and performance classes. While viewing a class I would ask a student to write their descriptions of a horse on the board as though they were taking notes on a class in a contest. After each horse had a list of grants and faults I could easily print the notes and pictures for each student. Asking them to come up and write on the board in front of their peers encouraged them to study on their own time and be prepared for practices because they did not want



Interactive Whiteboards can enhance the preparation for career development events.

to appear uninformed. As Schroeder (2007) states: "Because students know they will be reporting back to the class, not only do they have to answer the questions involved in their scenario, they also need to master the skills involved well enough to teach them. The learning is affective; students can see their skills and knowledge valued by peers as they also begin to value those traits in others. Students begin to regard one another as teachers" (p. 5).

Formulating reasons on the IWB took on a Mad Libs© approach as I utilized a fill-in-the-blank worksheet. The worksheet contained the script that is consistent for every set of reasons, the introduction, first pair, second pair, third pair, and closing statement. The students used their own notes to fill in the blank areas of the script. We were able to discuss terms and grammar as we worked on the reasons as a group. Once the reasons were complete everyone read the set aloud and I could print it directly from the IWB. During performance classes I was able to freeze video footage of horses at various gaits and (by using the IWB pen) show the length

of stride, head set and carriage, frame, and rider errors. As we progressed through all areas of competitive judging the use of the IWB also changed. I began practices with interactive quizzes and games made specifically for the IWB

that highlighted areas of horse anatomy, math, English, and quick decision making.

Eventually our practices at the school concluded and we began practices at local stables so we could view live classes. I have found that the students I am working with are more proficient and confident in their class placements than my other teams. The oral reasons to justify their class placing have also shown more logical organization, higher level vocabulary, and more comparative terminology. Overall, their progress is exceptional.

The students expressed that the interactive nature of the practices at the school were enjoyable and made them feel less intimidated. The group evaluations and reports of the classes also make them feel more comfortable about vocalizing their opinions in front of other people. IWB technology is fun, exciting and a bit edgy, students experience heightened emotions during the reporting phase (Schroeder, 2007). The atmosphere created from these methods kept the students interested in the contest and consequently, the FFA.

While the use of digital media such as judging DVDs, tapes, web-sites, and PowerPoint presentations has opened up animal judging contests and careers to every FFA and 4-H member, there is no substitute for the experience one gains from the live evaluation of animals. I believe that the use of IWBs as a coaching tool for judging teams can be easily included with the digital media we utilize today and harness the interest of our students through a technology driven learning environment. The FFA members of this century are so fortunate to have the answer to every question literally at their fingertips and the ability to present information in a vivid, novel learning environment through the use of interactive technology.

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Connect, Network, Create, Share, and Be Productive with Social Media Tools

by Drew Bender and Jenna Genson

“There can be infinite uses of the computer and of new age technology, but if the teachers themselves are not able to bring it into the classroom and make it work, then it fails.” – Nancy Kassebaum, U.S. Senator

In the past fifteen years, communication and marketing strategies have changed drastically. Not only are FFA chapters publishing newspaper articles, they are now publishing websites, blog posts, Facebook statuses, tweets on Twitter, and much more! Internet applications and social media sites continue to grow exponentially. Our students are very technologically savvy, therefore in order to communicate and market agriculture programs, we must be present in these realms.

Interactive technologies are becoming more ingrained in our culture each day. The use of technology inside the classroom is critical for learners to better understand and apply their knowledge outside of school. As technology continues to be integrated into our schools, there are many tools that can be beneficial for educators when preparing lessons and working with others. Internet networking sites such as Facebook, Twitter, YouTube, and Blogger or Wordpress have become important to many educators.

The Social Media Tools

Facebook allows individuals to connect with those they know personally and professionally. In addition, individuals can join groups and business/organization pages to further connect with others of similar interests. Twitter allows users to

quickly express a thought or message in 140 characters or less and follow users with similar interests. YouTube acts as an online public library of videos created by users and posted to the Internet. Blogging websites provide a unique opportunity to openly publish thoughts, video, pictures, and information with an unlimited amount of space. Blogger and Wordpress can be used in a variety of ways, educational and otherwise.

professionally. Through use of Twitter, it is easy to build a Professional Learning Network (PLN). This can be accomplished by following other users that have similar interests or by following categorized tweets (messages) through the use of hash tags. Hash tags use the # symbol to mark keywords or topics in a tweet. #AgEdu, for example, is a tag that is used to mark tweets related to agricultural education. This allows a user search-

To market agriculture programs we must be technologically savvy.

Connecting

Connecting with students, parents, community members, and stakeholders is imperative to the success of an agriculture program. Many FFA chapters across the nation have developed chapter websites to share recent activities and achievements as well as upcoming events and deadlines. Internet sites such as Facebook have become another tool for educators to use in the development of a chapter’s image. Creating a Facebook page for an agriculture program increases visibility and promotes communication. Additionally, it is very simple to post pictures, video, updates, and chapter reminders. Since Facebook users are connecting with others for a variety of reasons, there is a high amount of visibility when using this site.

Networking

Using Twitter is a great way to network with others personally and

ing for others users to follow others who are interested agricultural education. Once you find a user or a topic of interest, you can then interact to start building relationships.

Last fall, I (Bender) had 16 students enrolled in my Agricultural Business Management course sign-up and begin using Twitter. After going over basic instructions, the students had assignments to assist in building their networks with friends and other users. The “wow” moment was when one of the students followed the CASE IH Twitter account (@CASE_IH). The student then sent a reply tweet to the CASE IH account about the new line of combines that would be showcased at an upcoming trade show. This began a conversation back and forth between the student and the CASE IH account that continued through the class period. The students were quite impressed that a large company like CASE IH would interact with them through Twitter.

As I (Bender) have connected others during “chats,” I have built my own Professional Learning Network (PLN). In my network, I have connections with business leaders, agriculturalists, and school officials. I use this network of experts to help improve and validate the lessons I teach in the classroom.

In an effort to assist other agricultural educators, the creation of #AgEduChat surfaced. #AgEduChat is a weekly discussion that occurs on Twitter and/or Facebook. The purpose of #AgEduChat is for agricultural educators and supporters to come together and discuss current events or issues that surround the profession. #AgEduChat has been successful in providing a network for teachers to interact and share ideas, opinions, and information that we can use to enhance our skills and profession.

Creating & Sharing = Productivity

To be productive and efficient while using social media tools, it is critical to create content and share information with others who share the same topics of interest. One of the most common questions I (Bender) am asked while presenting workshops is, “What should I share and why?” This can be a difficult question to answer since each social media tool can be used differently and each person has a different goal in mind for the content they want to share.

The simple answer is that the “right” network wants to know what you do. Teachers across the curriculum are constantly looking for activities or information to help enhance or engage lessons, activities. This can lead to using networks to collaborate on class projects and even research. This can also be an opportunity to advocate for our profession. By creating and sharing content, we can enlighten others who might not be aware of

career technical education or agricultural education.

Here are a few examples of proven strategies that can be implemented using Twitter, YouTube and blogs.

Twitter

- Tweet to students and parents about upcoming assignments and due date reminders.
- Connect with the local community organizations.
- Follow current issues by following hash tags or user accounts.
- Take and share notes with students and parents.
- Connect and chat with industry professionals.
- Post sample questions to assignments or quizzes.
- Stay connected with others on field trips or at conferences and conventions.

YouTube

- Make tutorial videos about classroom and/or lab safety and machine operation.
- Use existing videos to share examples or experiences with students virtually when unable to provide a live experience in the classroom.
- Make a time-lapse video of a science or construction project.
- Add depth to lessons by expanding upon what is taught in classroom.
- Create video practice quizzes.

Blogging

- Communicate class/school information with parents and students.
- Post summaries of daily lessons and handouts for students who were missing from class.
- Have students keep a journal for

lab projects to post hypotheses, data results and conclusions.

- Create a professional reflection journal on lessons that you teach to analyze strategies and techniques that work or do not work well.
- Have classes post reflections or observations after field trips or conferences.

The way we reach students, parents, community supporters, and key stakeholders continues to become more tied to technology. Whether it is through e-mail, social media, blogging or otherwise, it is imperative to understand how our marketing and communication strategies can affect agriculture education programs across the country. Many of these options can endorse support from traditional and non-traditional supporters and take very little time to implement.



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Interactive Polling Through Text Messages

by Nathan W. Conner

Students of the millennial generation are not content with simply sitting in class and listening to a lecture. Today's students are eager to learn, but they want the learning to be on their own terms (Carlson, 2005). One way to help students control their learning is by incorporating current technology into the learning environment (Berk, 2009). One technology that has been used to encourage student engagement is the personal response system, otherwise known as the clicker system. This technology allows the student to answer questions while seeing how other students answered the question. It also allows the teacher to immediately evaluate the class, but the clicker system is costly and it is just another item that the teacher must be responsible for. Incorporating an online text message polling system into the classroom may provide a better option and would incorporate interactive technology into the classroom.

Polleverywhere is an audience response system that can be easily implemented in an agricultural classroom. This technology is simple to use and only requires the classroom to be equipped with one computer, a projector, and Internet access. To participate in the poll, the students will need access to a cell phone or computer. Due to cell phone policies in schools, you may need to get special approval to use text messaging polls in your classroom. Later in this article there is a list of possible reasons for the use of text messaging polls that you may present to your administration. The texting message polls are quick and easy for the teacher to

develop. The following steps may be used to create and implement a texting poll through *polleverywhere.com* (2012).

1. Navigate to *polleverywhere.com*.
2. Choose one of the following options:
 - a. Continue without an account
 - b. Register for a free account that allows for up to 30 responses at a time
 - c. Purchase a subscription account

3. Click on create a new poll.
4. Input your questions into the textbox. Your questions may be multiple choice or open-ended. When finished click continue.
5. In order to insert your questions into a PowerPoint, follow the instructions provided on the website.
6. Insert your slide(s) into the PowerPoint.
7. Use your PowerPoint in class in the same manner as you normally would. When you reach the slide with your question, instruct students to take out their cell phones and follow the instructions on the

screen.

8. Student responses will appear immediately.
9. Student responses can be used to provide feedback, spur discussion, and assess student learning.

My experience using the audience response system *polleverywhere* as an interactive learning tool is at the university level. The students indicated the use of texting polls made them feel more comfortable sharing their ideas and opinions in class. They were also more likely to participate in class (Conner & Roberts,

Millennial generation students
are not content with sitting in class
and listening to a lecture.

2012). The use of the *polleverywhere* and cell phone technology seem to be an effective method of incorporating technology that the students want to use as well as increasing student engagement in the course.

Texting technology would be a great way to actively engage secondary agricultural. Most students have cell phones with them at school and all teachers know that students are constantly trying to send text messages during class. Incorporating *polleverywhere* into your class not only gives students permission to use their cell phones for learning, but it also allows students that typically do not share their thoughts and ideas out loud to anonymously share their

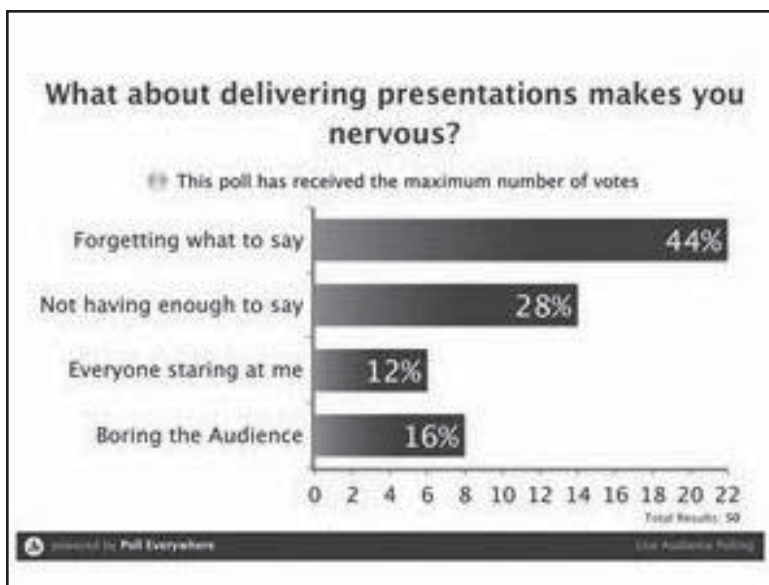


Figure 1. Screen Capture of a Texting Poll on PowerPoint after the poll is completed.

ideas. If you have a student that does not have access to a cell phone, you can have the student complete the poll on any computer that has access to the internet.

Texting technology can be used in many different ways in agriculture courses. Texting polls are effective ways of beginning a unit. If you are introducing a unit on plant science you could use *polleverywhere* as a pre-test to assess the current knowledge level of the students. The immediate results will allow you to assess the students as well facilitate a group discussion based upon the students answers to the questions. *Polleverywhere* can also be used as a tool for allowing the students to express their thoughts over an assignment, a topic, or a concept. If you have been studying genetically modified organisms (GMOs) and you want the students to share their personal views on GMOs, *polleverywhere* would be an effective means to accomplish this because it would allow the student too anonymously share their opinions. This would be done though an open-ended question. After the responses ap-

pear on the computer or screen, the students should be given time to read the responses. This will allow the student time to think about their viewpoint while learning about other people's viewpoints. *Polleverywhere* technology can

also be used during student projects. As the instructor, you could introduce *polleverywhere* to your students and let them know that they can incorporate *polleverywhere* into their projects. This would allow the student an opportunity to develop their own questions and to evaluate the audience. *Polleverywhere* should be used as a tool to increase student engagement and ultimately increase student learning.

Due to cell phone policies in the schools, you might have to get approval from your administration before implementing text messaging polls in your class. The following is a list of reasons that could be presented to your administration to help you gain approval for the use of text messaging polling in class.

1. Technology integration
2. Active learning
3. Increased student engagement
4. Increased student learning
5. Evaluation/assessment tool

6. Free or low cost

Polleverywhere technology can be a great way to increase student engagement, promote active learning, and integrate technology into your curriculum. My suggestion is to start out simple. Create one text messaging poll and try it out. Observe your students reaction to the texting poll. If it goes well, try it again and over time try implementing more text messaging polls.

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The Real Ag Teachers of America: A Practical Guide to Increasing Instructional Technology in Your Classroom

by Christopher Hart

Today's agricultural teachers are faced with real world challenges and dilemmas. Between FFA meetings, CDE practices, SAE visits, service projects, chapter fundraisers, and classroom instruction, it is difficult to find the time to discover and experiment with new technologies for the classroom.

I recently began teaching agriculture at Chatham Central High School. One of my biggest challenges was increasing the amount of technology used in the classroom. I will admit this still posed a challenge, but with continual effort I have been able to implement strategies and resources that have benefited the program tremendously.

Over the past couple of years, I have read many articles on the use of instructional technology. While reading I often cannot help but wonder, "How do these teachers find the time to develop and utilize such technologies?" The level of technology these teachers were implementing seemed unattainable and quite overwhelming to a beginning teacher. Just like the easy and simple lives that many reality television stars seem to lead, the following article describes a few easy and simple ways I have found to integrate instructional technology in my classroom.

Rome Was Not Built In A Day

As I sit at my desk, I cannot help but stare at the countless boxes of projector slides still utilized in my

classroom. Although I inherited a very successful program, there is always room for change and improvement. I will admit that some of my lessons use "vintage" techniques. Some lessons utilizing outdated technology still work great, while others do not. However, the number of lessons relying on retro technologies is slowly being replaced with a goal to move all images to PowerPoint slides or other appropriate technology.

It is difficult to find the time to discover and experiment with new technologies for the classroom.

At first, I assumed that I needed to make this change immediately. However, as the school year progressed I discovered that the best approach was to gradually incorporate the new technology into the classroom. Please do not feel like you have to revolutionize your entire classroom in a short period of time. Instead pick one or two technological tools, resources, or programs and begin experimenting with them. When attempting to increase your use of classroom technology, don't be hesitant to involve your students. Regardless of how proficient or inept you may think you are with computers, your students are probably much better! Encourage students to assist in the development of new materials. Do not be afraid to empower your students! It may seem a bit intimidating to implement technology at first but increasingly you

will become more comfortable and proficient. Take a minute to consider...what are two new technologies you would like to incorporate into your classroom this year?

Tweaking is Easier than Creating

As I increase the level of instructional technology utilized in my classroom, I feel that I am simply tweaking my "old" method of teaching to

be increasingly tech-friendly. I would often give several pop quizzes and would spend hours each night grading papers. I now upload and give quizzes via **Moodle**, a free learning management system. I simply create a quiz and answer key in Moodle and the computer calculates student scores at the conclusion of the assessment. Better yet, quizzes and tests are saved from year to year. What technology might be used to help reduce a bit of your workload?

Don't Reinvent the Wheel

Remember those slides that I talked about earlier? You are probably still wondering, "who still uses a slide projector?" The content of slides is excellent; however, the quality of the images is usually poor and the projector is not very mobile. As I work to replace the old slides, I am

using my own images that I have collected while on various FFA trips. All my photos are stored on **Picasa**, a free photo management program. The program allows me to easily store, edit, and view countless images. As well, my students who are interested in subject matter provide excellent assistance in archiving and organizing the numerous images and creating new slides that do not require a slide projector to view.

Everything is Connected

When selecting technologies to implement into your classroom, ask yourself, "How will this ultimately benefit my department?" One has to consider the future and establish long-term goals. The technologies implemented should reduce your workload, increase student comprehension, prepare students for college or career, and increase the overall quality of your agriculture department.

One group of programs that I have become familiar with is the **Google suite**. Some of the programs included are Google Sites, Gmail, Calendar, Documents, and iGoogle. The programs have revolutionized how I am able to organize and manage my professional responsibilities, plan and facilitate FFA events, promote collaboration among my students, and serve as a way for students to collect and store data related to classroom activities. Key information and important procedures developed and disseminated in the classroom are now documented and reinforced through the use of Google. For example, students are able to record and monitor crop data such as pH and soil electrical conductivity using Google Docs.

As an educator, you have likely heard the words *rigor* and *relevance*

used to describe ways to promote learning in the 21st century. Instructional technology and its various tools and implementations provide educators with outstanding resources to increase rigor and relevance while at the same time promoting mastery of concepts and improvement of the department. In conclusion, the programs below have helped to bring my classroom and agriculture department into the 21st century:

Picasa

Picasa is an online photo management and editing tool. It allows for the organization, storage, and editing of photos. My Picasa account is also linked to my Google Sites account, allowing me to upload photographs and slideshows. In Picasa, images can also be archived by people, so images of students can be quickly located by simply searching for the student's name.

Google Docs

Google Docs allows for the creation, upload, storage, and modification of a variety of documents including word processing, presentations, and spreadsheets. Documents can be shared with students for review and editing and accessed from any computer with an Internet connection.

Google Sites

Google Sites provides user-friendly templates for the development of websites. The website can be used to upload assignments, store course documents, showcase student work, provide information regarding fund raising projects, serve as a source of promotion for the department and a method in which to post information FFA information such as meeting dates and practice times.

Moodle

Moodle is a free course-management system that can host complete courses. One can post all course resources including notes, assignments, videos, and activities. Student data can easily be collected and maintained using Moodle. A teacher can create self-grading quizzes, minimizing the need to grade every single paper and limiting unnecessary paperwork.

Download Helper

Download Helper is an add-on extension program easily added to your web browser. The program allows for the download of various videos located on any webpage, including YouTube. By having the videos already downloaded, the added time usually required for videos to load is eliminated. You can also embed the video into programs such as PowerPoint or upload and post them on Moodle or Google Sites.

With these simple, easy to use web tools, you will be well on to increasing the amount of instructional technology in your classroom. Technology integration can quickly become a reality, much more of a reality than what you will see on TV!



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Theme Ideas *for the 2013 Edition of* ***The Agricultural Education Magazine***

Please send all ideas to:

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