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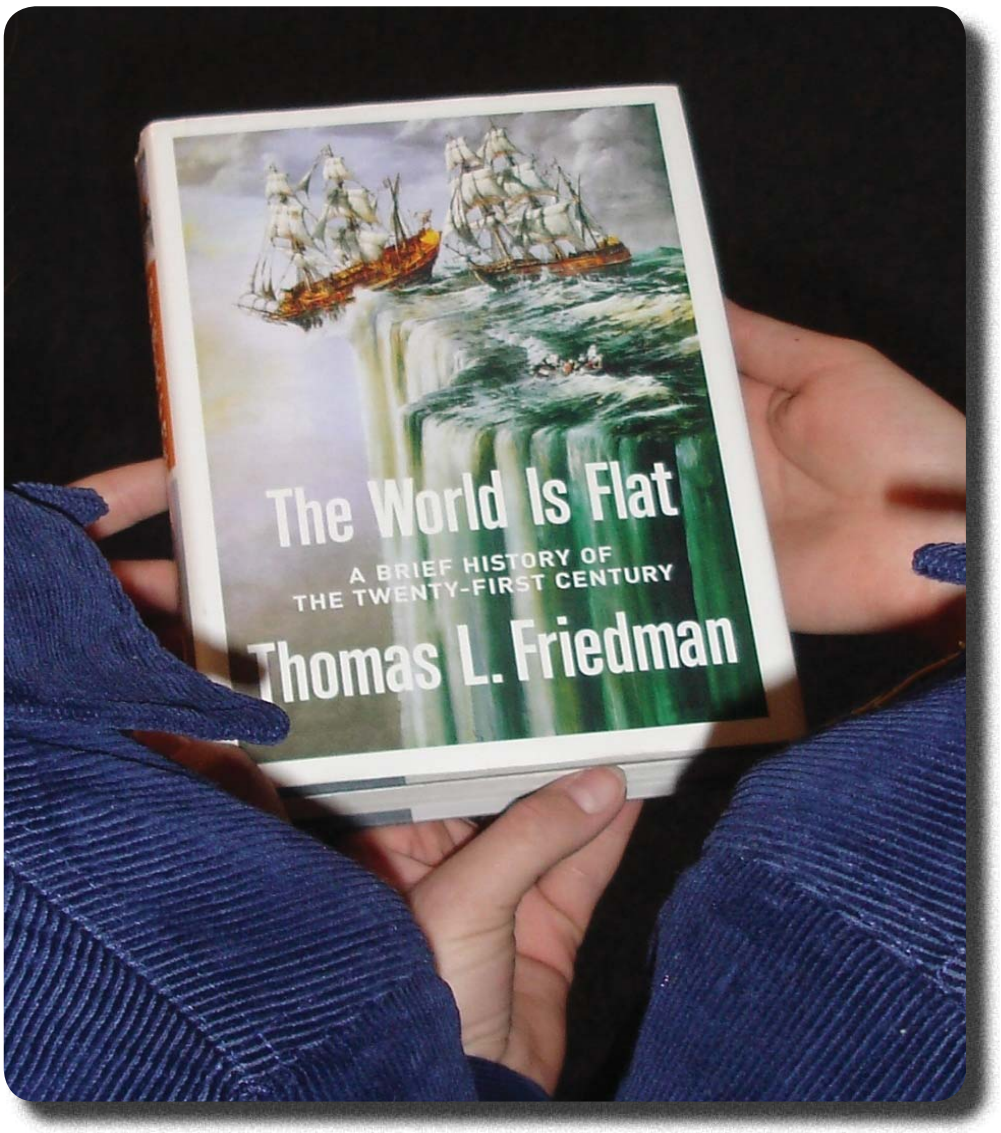

The world is flattening--
Will Agricultural Education still fit?

Flat worlds and spinning thoughts

By Billye Foster

New Beginnings

Today I am assembling my first issue of *The Agricultural Education Magazine*. This ***is*** an adventure. Learning new software is like learning a new language. Just about the time you think you've got it figured out, you see you have ordered pigs' feet instead of filet mignon. Aside from the challenge of the physical development of the *Magazine*, I have much for which to be grateful. My hat is off to my first Theme Editors: Jack Elliot, Buddy Diemler and Jason Larison. They have assembled an outstanding group of articles.

When Jamie Cano first informed me that step one of my newly acquired position was to determine the upcoming themes, I thought "piece of cake." This seems to be a real flaw in my personality--*sizing something up before I have all the facts*. On closer inspection, I realized this was a rather critical assignment. I needed to come up with themes that would simultaneously intrigue the readers, serve the profession and inspire others to share their views and experiences. Tall order.

I began by polling everyone I could find. My colleagues at the University of Arizona, my family, the woman behind me in the grocery store line. Next, I did something I don't ordinarily do. I actually began to track the news, looking for trends. Gradually the ideas began to form and before I knew it, I had a complete theme list. Next I began contacting those fortunate individuals I deemed worthy of such an assignment as theme editor. As luck would have it, I won again! Every person I asked to serve did so gladly! Surely something was amiss--I kept waiting for the other shoe to fall.

Christmas came and went in a flash and when I returned to my office I found a large box of files waiting for me. Pictures from the past and critical forms and information regarding my new charge. Panic didn't set in immediately, but definite shadows were invading my space. Things were changing and the semester had just started. Trying not to panic, I spent the first week of the semester focusing on classes and students. Somewhere in the back of my mind, snippets of Thomas Friedman's *It's a Flat World After All* popped in my head at the oddest times. During lunch, or while I was driving to work, the whole concept of being left behind began to weigh on me. I knew the issue was going to be a bit late, because the transfer process had been delayed by the holidays. But I had faith.

By January 9 I was beginning to become concerned. Friedman kept haunting my thoughts, pointing out that Americans are so self confident that we are in danger of letting the world pass us by simply because we think we have already won the race. It really is the old hare & tortoise thing. *WE have the best agricultural and food production system in the world. WE have the most advanced personal technology in the world. WE have the best medical care in the world*. The list goes on.

Unfortunately, If WE don't begin to recognize the trends of the future, WE may be at the back of the proverbial pack soon. Did you know that while we lead the world in the number of internet users, we don't even make the list of the top cellular telephone users? That may not seem too frightening, but the cell phone is the harbinger of a new age of global wireless communications. Soon we will be able to do everything from banking to grocery shopping via our favorite phone.

I kept thinking about Friedman and his belief that we have a choice--we can promote hope in this changing world--or we can promote fear. Hope sounds much better to me. But are we going to be able to step up to the challenge? Is the rest of the world really going to pass us by?

After a few sleepless nights I began to receive the articles. It was like an early birthday present. Articles about teachers moving ahead and taking students with them. Articles about people, like me, who drug their feet but finally caught the train. Articles about taking proven philosophies and making them work their magic once again. Articles about HOPE. Hope that excites our students and warms the hearts of those of us who have already lived through a number of changes.

I think you will enjoy this issue. It may not be what you expected, but I believe it will restore your faith in the future of Agricultural Education.

Billye Foster is an Associate Professor at The University of Arizona and is Editor of ***The Agricultural Education Magazine.***

Theme: The world is flattening-- *Will Agricultural Education still fit?*

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E-mail: james.h.smith@ttu.edu.

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Editor

Dr. Billye Foster, Associate Professor, Department of Agricultural Education, The University of Arizona, PO Box 210036--Forbes 228, 1140 East South Campus Drive, Tucson, Arizona, Phone (520) 621-1523, FAX: (520) 621-9889.

E-mail: billye@ag.arizona.edu

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Where Were We Hiding When the World *Flattened?*

By Jack Elliot, Buddy Diemler, and Jason Larison

After a quick 3-day trip to Washington DC I enjoyed arriving back home, getting to sleep in my own bed, and following my normal routine. Then it hit me, that is why, according to Thomas L. Friedman in "The World Is Flat," the United States has been surpassed by other countries (most notably India and China) in many facets of the global economy. We in the United States strive for routine and the comfort of knowing exactly what to expect in our daily lives.

However, recent genomic research has determined that our very nature is to strive for safe routines, so basically this desire for routine is not unexpected. In fact, there is evidence that about 66% of the population is hardwired for repetition and doing things the way we have always done them.

Jack Elliot is Professor and Head of the Department of Agricultural Education at the University of Arizona

One third of the population that doesn't fit this description has often been the renegades of society throughout most of history. They were the people who left their homelands, either by choice or by force, and started new colonies around the planet. Much of the United State's rise to being a world power is attributed to the innovative nature of its people, a characteristic not as prevalent in cultures with longer histories.

What happened?

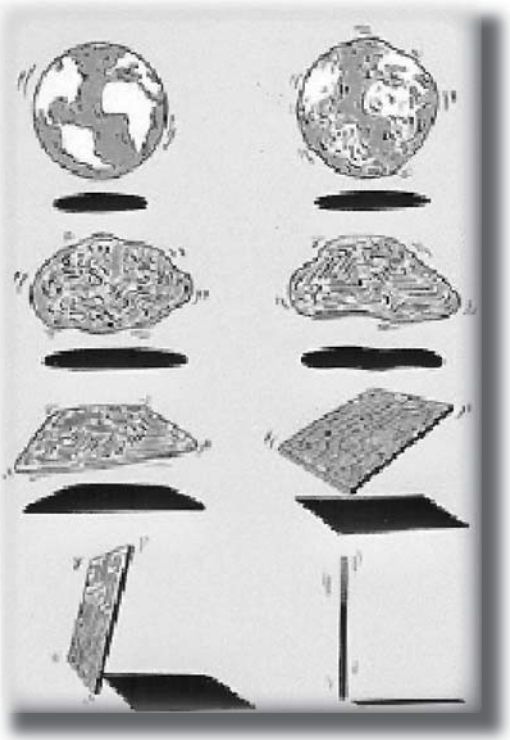
We became complacent and, as nicely illustrated in Friedmn's book, people from other countries took advantage of technology to flatten the playing field. These people hungered for innovation and the opportunities afforded them. We let the world pass us by and are now stymied in an educational system that rewards students who test well on high stakes tests. The concepts of innovating, thinking, and creating have been eliminated from our curriculums.

We have educational standards that haven't been significantly altered around the country because of our desire for normality, routine, and the idea that we can determine a student's worth on a single high stakes test. Educational standards can't be static. They must be alive and growing. More important, the delivery of these educational standards must be engaging so that all students (not just the ones with learning styles for test taking) can develop the innovative, thoughtful, and creative skills needed in this flat world. Effective educators adhere to this fact and are doing something about it.

Thank goodness there is some common sense in our educational world as illustrated by the authors in this issue. There are educators who understand that in this flat world being innovative, thoughtful, and creative remain desirable attributes. The articles describe how teachers in the classroom understand the situation and creatively delivering their educational material. If every unit we teach addresses how we can become more viable in the global society, then we have accomplished our job.

Jason Larison is an Agriculture Instructor at Holton High School, Holton Kansas

William "Buddy" Diemler (not pictured) is a CTE Specialist for the Utah State Office of Education



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When the world is flat...

By Cassie Brock and Brandon Barr

"When the world is flat, you can innovate without having to emigrate."
~Thomas Friedman

Agricultural education has always tried to be proactive rather than reactive to the world around us. We have overcome many challenges and have also been on the forefront of new and innovative ideas in the classroom. Our biggest challenge is right in front of us. Our students need to be well versed, not only in the ways of agriculture, but also how those ways can be centered on technology. More food for thought! Creating students who know and understand their own strengths and are able to sell themselves in the reality of a global market opens doors never dreamed of before. No small undertaking, but certainly attainable.

It is easy to see the world is becoming flat when you call a customer service number and are suddenly talking to someone in another state or even country. Distance is no longer a concern when technology is in the picture. This article was put together by people living over a thousand miles apart through the use of technology. Without email and high speed internet or even cell phones, working on a project with someone who was not in your same area took weeks if not months, or was simply deemed impossible.

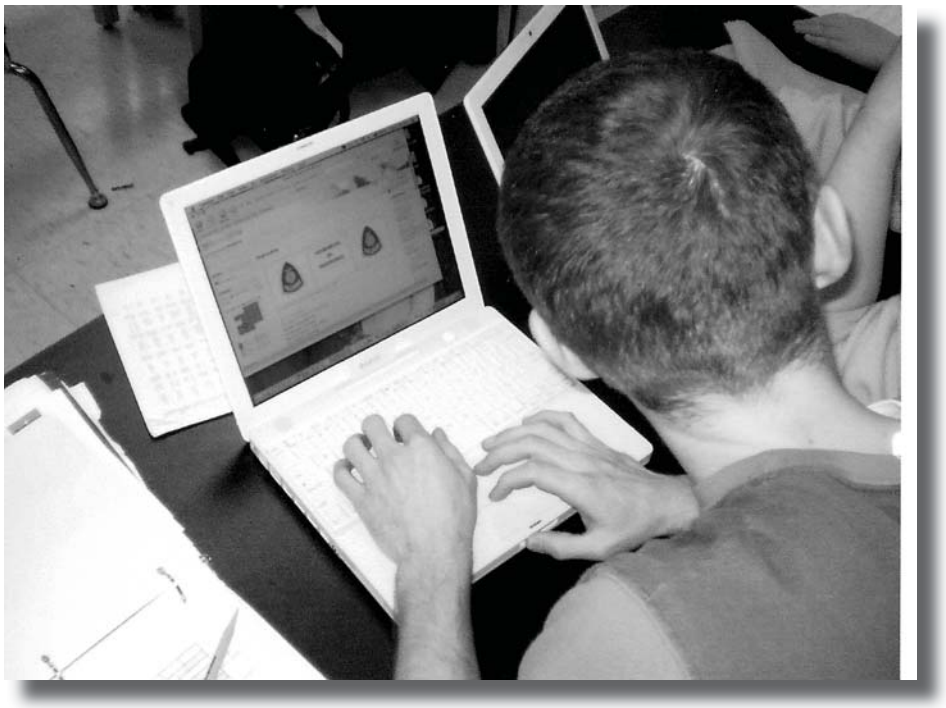
Many of us enter a technological world everyday where, even though we are more technologically savvy than our parents, our students surpass us by miles. Their focus is technology driven whether it comes from cell phones, mp3 players or computers. They are able to do things faster and better this year than last due, in part, to technology. It is essential we bring that world into our classrooms and use it to teach even the most traditional of subjects. Agricultural education has been able to survive the test of time because we truly do teach our students premier leadership, personal growth and career success. But are we tapping into the "techie" nature of our students to teach them those same skills in a world where the next job may be outsourced simply because there was no connection made?

Friedman's quote alludes to not having to emigrate. How can I use the concepts I already teach in my class to create students able to compete for agricultural jobs without having to emigrate to other states much less other countries? To find the answer, let's focus on the three aspects of a total program.

Classroom Instruction

I think it is fair to say most of us use technology in the planning and implementing of our lessons in the classroom. The Internet provides a number of sites not only designated for Power Points, but that also gather a variety of web-based materials for all teachers. It is important to show our students how we use technology beyond the Proxima and Power Point shows seen in all classrooms.

We should be encouraging our students to create new methods of doing everyday tasks through computers. The Vail School District is one of the few in the nation that has a school entirely laptop and technology based. Every student



Students in Holton, Kansas work on notebook computers in class.

is issued a laptop, textbooks are online and technology of varying sorts is seen throughout the school. What a great example for our students in showing them how computers, the Internet and the dreams of a few are now connecting classrooms with information nationwide.

Teachers have always had areas of specialty and agricultural teachers are no different. We all have peers who are better with greenhouse management or agricultural communications than we could ever dream of being. Is it crazy to think we could share our expertise with not only our own students but with those down the road too? Why not use the same technology businesses use to connect a business based in the United States with one in India? "The best teacher is the best thief" has always been a great motto to teach by, but there is still no one better to teach something than the "Highly Qualified" one who wrote it. Now we all live in a world of tight budgets and penny pinching, but if we are providing our students with the best possible education by the best teachers, are we not meeting the demand of a society that needs technologically and agriculturally literate employees who understand how their world was made flat?

In light of all the specific classroom technology, it is important we do not forget to bring technology into our classrooms, whether through real-time teaching and application or in our lessons and discussions.

Here are some ways to make it happen.

- With only 2% of our population involved in production agriculture, the burden is heavy and the cost of not keeping up is high.
- Precision agriculture helps us utilize our resources to the highest potential by maximizing production.
- GPS systems are being used to tell a farmer or agronomist applying fertilizer on a field how much to put and where.
- Combines have monitors telling us the bushels per acre being achieved.
- Animal ID systems are used to not only locate animals for tracking purposes, but also give a description of treatment applied to that individual.
- Video and Internet sites are allowing producers to market their livestock or forage crops to the highest bidder anywhere, whereas before geographical limitations played a role in not only the price paid but also where the product was sent.
- Finally, the classroom instruction that you initiate in your classes directly affects the enrollment you have in your program. If you teach with and about outdated material, your program will not survive the wave of the future.

> Our students need to be well versed not only in the ways of agriculture, but also in how those ways can be centered on technology.

FFA

When we think about agricultural education, we also think of FFA. The National FFA Organization is a great place to teach our students leadership, decision-making and people skills. We all know and teach those very things on a daily basis, but are we purposeful in our delivery? Do we tell the eager minds in our classroom how the world is changing and that they need to be able to adapt? Do we make the connections of our contests to the world applications?

More ideas to make it happen...

- How about collaborative projects between two chapters in different states, whether it is simply learning from each other or serving a greater purpose? This is something we have both experienced as our chapters have been able to not only write pen-pal type letters, but have also met in person and networked during the National FFA Convention. Our students enjoy the idea of being able to interact and meet people from around the country just as we teachers experience when we go to conferences.

FFA presents a great learning opportunity when students can ask questions and learn another perspective from someone who is involved in the same organization as they are.

We should all use FFA as the tie connecting students living in two completely different communities and geographical areas together for experiential and real world learning.

SAE

Supervised Agricultural Experiences have morphed and changed as not only the face of agriculture has changed, but also the face of our programs and the world we live in has changed as well. Teaching in a suburban program has created situations where my students have to continually think outside of the traditional SAE box. Most of my students do not have the background much less the land to own livestock or have their own cropland. It is imperative that I encourage my students to find something of interest to them and allow the flexibility necessary for them to build and grow upon that interest.

I realize that not every student is going to be a farmer, but when 1 in 6 jobs relates to agriculture, agricultural literacy and thinking become increasingly important. It is scary to change and step outside of the box for each and every one of us. There are SAEs available to our students that relate to technology and non-production agriculture that have few, if any, students completing proficiency applications. I remember our East Central District selection day last year having about 25 technology and non-production agriculture SAE proficiency areas that didn't have any applications.

SAE Innovations:

If we are going to get students to think about opportunities in agriculture, we need to make them aware of their options.

In addition, by showing students different SAEs and different options in agriculture rather than the typical beef production everyone applies for, we can be creating SAEs with our students in areas such as emerging technologies, small animal care and Agricultural Education.

It was in a conversation with one of my mentors where the idea of encouraging students to develop innovative ways of outsourcing themselves and their talents to the world of agriculture was discussed. We all have students who are truly creative and forward thinking, so let us point them in the direction of the future for the implementation of that innovation. The possibilities truly seem endless.

What will our SAEs look like in 10 years?

This past year in Kansas, discussions were held about cell phone use at contests and whether they should be allowed at all or if restrictions should be put in place. It was decided to ban cell phones from contests as it was found way too easy for students to text message class placings or answers to tests back and forth to their teammates. Even though the cell phones had a negative connotation, we need to also remember the positive attributes they have. Many of us use our cell phones to not only find our students at the completion of an event, but to also keep them aware of changes in plans during convention time.

It is essential that we introduce our students to the flat world they will be entering upon leaving our classroom. We may not all live in the reality of having all the technology in our classrooms available, but we can certainly make a point of having discussions with our students as to the possibilities awaiting them, as they are so far ahead of where we can even dream of being in a world driven and connected through technology.

Cassie Brock is an AgriScience teacher at Cienega High School in Vail, Arizona.

Brandon Barr teaches AgriScience at Council Grove High School in Council Grove, Kansas.

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no longer rest on accomplishments of the past and must prepare for the competition of the future.

Mr. Evans retired a few years ago and Mr. Hegewald is still teaching Agriculture in a high school in central Wisconsin. What would they think if they came to my classroom? Would they think that education has changed to keep pace with a rapidly changing world? Would they be surprised by the use of technology and total lack of paper in my classroom? Would they think that education has kept pace with our changing world? How will the classrooms of my former students who are now teaching agriculture differ from the program that they graduated from?

Well, I'm off to check my Facebook page. Several of my friends have probably written on my wall or posted new pictures while I was typing this article on my laptop.

Linda A. Peterson
Agricultural Education Instructor/FFA Advisor
USDE Appointee, National FFA Board of Directors
Depart. Head: Career & Technical Education
West Central High School, Hartford, SD

Staying *Relevant* in a Flattening *World*

By Daniel D. Foster and Kattlyn Wolf

How well do you really know your students?

Look at the Class of 2007. Today's high school seniors were born around 1990. The same year the personal computer celebrated its 15th birthday, and a gentleman named Tim Berners-Lee proposed something called the World Wide Web.

The Class of 2007 was in first grade in 1996, the same year the Palm Pilot went on the market. Two years later, Google made its debut. Amazing Fact: These students have never known a world without the Internet.

In the fourth grade, this class saw Sean Fanning create Napster, the first widely-used, peer-to-peer (or P2P) music sharing service. When these students entered middle school, Wikipedia was created, and the iPod was launched by Apple. Still in middle school in 2003, our students witnessed Skype (a peer-to-peer Voice over Internet Protocol (VoIP) network) enter our world.

When our future graduates were bright-eyed freshman, podcasts entered our vocabulary and began to win world wide acceptance. In fact, "podcasting" was the 2005 word of the year according to the editors of the New Oxford American Dictionary. As our group moved into their sophomore year (and became extremely wise in their own estimation), the world was introduced to YouTube (Time Magazine's 2006 Invention of the Year), a free video sharing website which lets users upload, view, and share video clips.

As juniors, our class met MySpace, a social networking website offering an interactive, user-submitted network of friends, personal profiles, blogs, groups, photos, music and videos. In 2006, MySpace reached the 100 MILLION 'accounts created' plateau and became the third most popular site after Yahoo and Google, meaning one in three Americans have a MySpace account. In their Senior spring semester, our students on January 9, 2007 heard Steve Jobs announce the Apple iPhone, a combination camera phone, Personal Digital Assistant (PDA), multimedia player, and wireless communication device, that some experts are calling "A huge deal--this is the next home for the mind. Computers have had a nice long run, and laptops will always play at least some role. But the center of gravity is now slowly shifting from the desk to the device in your pocket" (Wikipedia, 2007).

These are our students. This is what they have seen. These are the experiences that they grew up with. Our teens are technology rich and enveloped by a wired world.
"Not my students," you say? According to a Pew Internet and American Life Report (2007)...

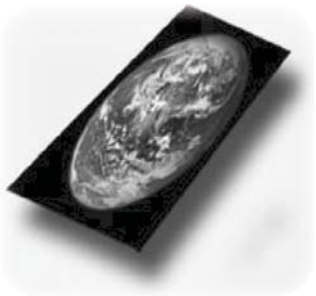
- 83% of all teens say that "most" of people they know use the Internet.
- 84% report owning at least one personal media device: a desktop or laptop computer, a cell phone or a Personal Digital Assistant.
- 44% report owning two or more personal media devices.
- 32% of teens own laptops.
- 45% of teens own MP3 players.

Our teens are multimedia multitaskers. One could say that multitasking is a way of life – and people live in a state of "continuous partial attention." Other interesting statistics to view from your agricultural education lens…

- 57% of online teens have created some type of online content.
- 33% of online teens share their creations online.
- 32% of our students have created or worked on web pages or blogs for others.

Using what Mr. Friedman refers to as *technology steroids* to improve our implementation of the fundamental principles of teaching and learning, can we as agricultural educators harness this creativity, this entrepreneurial spirit, this desire to learn and channel it into the agricultural industry and our classrooms? The question is not "Why," but "Why Not?"

The heart of every successful agricultural education program, the reason we do what we do, the recipients of the premier educational delivery system in the world….OUR STUDENTS…. are changing. That is the reason that this discussion is occurring. We all assert the neces-



sity of being student centered…. well that center is moving. ***Can we keep up?***

What the heck does a "Flat World" mean?

The Flat World is about collaboration, change and adaptability. The Flat World is a world devoid of barriers, a world that is not only connected, but maximizes those connections to generate a wealth of opportunity for all. It means intellectual minds of younger generations can work anywhere, anytime; physical proximity is becoming less essential. A globally competitive workforce is one where problem-solving and adaptability are not only useful, they are vital. The business world is becoming more and more decentralized, with increasing collaborative partnerships that span borders. Why not education? The vehicle of communication is no longer a hand-cart; it's a bus. Everyone has a seat; do you have your ticket?

What does a Flattening World mean to education?

The challenge for education is keeping pace with the times, being on the, "cutting edge." The world is changing drastically around us, but we maintain that our current educational philosophy is still sound and functional. Do we dare say this, YES! The fundamental principles of teaching and learning are still relevant and applicable. Unfortunately, many teachers, while operating with sound principals and philosophies, fail to continually update their techniques and methods. The goal is to continue educating students who are ready to take their place in the workforce and become productive members of society.

We must prepare students for a lifetime of employability; not just employment. They must be capable of adjustment in their careers; skills and competencies are not enough alone. A paradigm shift is needed to prepare students for success in a flatter world. The one size fits all model of education is quickly being replaced with a different and diverse face. "Traditional" is an archaic word without roots. Whose tradition are we talking about, yours or someone else's? The idea that there can be any single "tradition" in this increasingly diverse world is fast being dispelled.

What does a "Flat World" mean to Agricultural Education?

The goal for teachers is to remove as many obstacles and barriers to our students' success as possible, and prepare them for the realities of the "real world." We must free our students for self-discovery and exploratory education as we "guide by the side".

To effectively prepare a generation of problem-solving, critical-thinking adults, we should model our own ability to adapt and change in a flattening world. Our students need the ability to understand the rapidly expanding context of the agricultural industry and find their place in the advancement of that same industry. Agriculture is a business, and to prepare competent business people, we must increase their awareness of the ever-growing playing field. We must broaden their horizons.

Instruction

Classroom version 2.0 will be web-enabled and participatory, valued as a physical space, and most importantly made of people! This is what the technological revolution does to everyone. It makes them revisit the value they are adding to the process of education. If you, as an instructor, are just "showing" PowerPoint lessons to your class while they jot down notes, why do they need you? They could simply watch the presentation and make notes on their own.

What are you doing to help facilitate learning? Students have the ability to memorize facts, but that is not problem-centered learning. Memorization will NOT prepare students for a life in a globalized society. Students must learn the arts of collaboration, participation and emancipation from static in-

May/June 2007

Theme: Research is to Practioners as Logic is to _____.

How does research affect the day to day operations of high school agricultural education teachers? What is relevant research? How can research shape the future of agricultural education?

Theme Editor: Gary Moore
North Carolina State University
Department of Agricultural and Extension Education
Box 7607
North Carolina State University
Raleigh, NC 27695-7607

gary_moore@ncsu.edu

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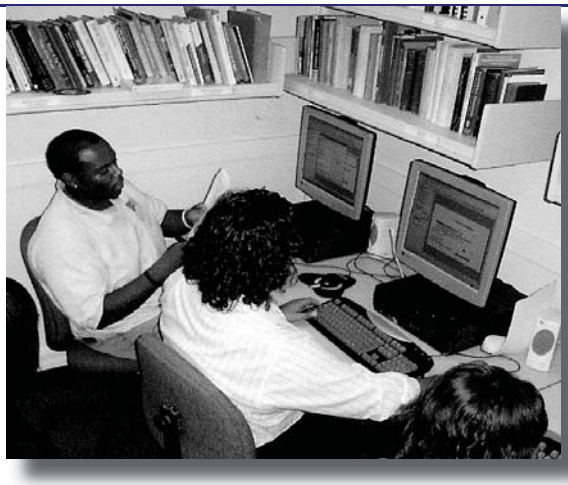

Students search for background information via the World Wide Web. No longer an unusual site in school.

formation. Dynamic learning environs are not the result of technology, they USE technology. Dynamic and exciting learning environments are the result of planning and skill, not an internet connection. If we subscribe to the fundamental principles of teaching and learning as reported by Newcomb et. al. (2004) (students must be motivated and students must inquire into rather than be instructed in the subject matter), then we must understand that these technological opportunities are as Friedman (2006) describes "as significant as Gutenberg's printing press." We must create new techniques that develop and teach synthesis skills. Our role will change from introducing information to helping students learn to sort, evaluate, and integrate information.

SAE/Laboratory

Technology in a flat world is the Supervised Agricultural Experience (SAE) tool of the future. Think about it--a student with no car, but who has a computer, can start an online business "out-sourcing" their skills to agricultural industry. For example: What stops a student from working from 6-10 PM at home on their computer inputting production records for local producers? Or from taking orders by phone for local or small sized agricultural suppliers?

Imagine going into a class to teach about SAE. You are going down the standard list of possibilities and you open the door by saying, "Want to start your own business? Why not do it on-line? Don't have a computer? To start, you can use the ones here in the ag program."
Can you imagine what our students, enrolled in the premier educational delivery system, learning about leadership, communication, and problem solving skills—given this unique opportunity and resource, would come up with? This is what experiential education is all about. We have the opportunity to cultivate the entrepreneurial skills of our students on a world-wide basis with implications that are far ranging more than we can imagine.

FFA

As we continue to look at our sound educational model, we realize more and more that the flattening world should not be a something to fear and avoid; rather it is an opportunity and a chance to excel.

Thomas Freidman (2006) said, "The world is being flattened. I didn't start it and you can't stop it, except at a great cost to human development and your own future."

John Dewey (1933) wrote, "Cooperation is as much a part of the democratic ideal as is personal initiative." He continues, "the habit of amicable cooperation…is itself a priceless addition to life….Democracy is the faith that the process of experience is more important than any special result attained."

Friedman notes the rapid rise of globalization has important implications in service learning. Dewey's theory of democratic cooperation blends perfection with the concept of home and society as global. Teachers can influence students' visions of globalization through the emphasis of service-learning on a wider playing field with a multitude of different players. Service learning is what we do. Servant leadership is what we strive to develop in our students. We have the tool of our youth organization to capture the essence of collaboration between knowledge and community interaction. Service learning, through the FFA, enables us to solve practical public problems surrounding every community. Global knowledge is obtained through active engagement and experiences in our local community based efforts.

We need local and democratic pedagogy that emphasizes problem-solving in order to successfully co-exist in a globalized world.

The job of agricultural education is the same today as it was in 1917. Our job is to make it real. This is what we do. We need our students to grasp the reality their knowledge and influence will extend beyond their local communities, their states, and our country to the entire world. They must also realize it begins at home with the first step toward success through involvement in school-based agricultural education programs.

Globalized industry enriches all of our lives through the shared experiences of many peoples and cultures. Our students need to be able to relate and thrive in an enriched environment. This increasing awareness of diversity will help prepare our students for life in a Flat World, but does it prepare our teachers to effectively work with those students? The

answer is-- IT MUST. If as teachers, we cannot embrace and facilitate positive change, how can we expect our students to do so? Our focus on premier leadership development that integrates technical training with desired interpersonal skills through initiatives such as LifeKnowledge will allow our students to move to the head of the pack. Service learning experiences will help our students navigate the interconnections and potential tensions between many diverse cultures. It is our responsibility to put our students in the position to have these experiences.

Can agricultural education remain relevant in this new, Flatter World? In the Flat World of Education, Agricultural Education is the cream rising to the top of the barrel. Why? Because our focus is, and always will be, centered on problem-solving and critical-thinking skills. Our students' success depends on their teachers instilling in them the ability to "learn how to learn." The philosophies that drive our programs will be our salvation. We must continue to expand our own definitions, methods and techniques to keep up with our target audience. We must prepare a technologically literate population that embraces life-long learning, and thereby adapts to an ever-changing world.

This is the definition of "Total Student Success." We stay relevant as long as we keep our eye on this true prize: Total Student Success. Our educational delivery system creates students with the essential characteristics of a Flat World workforce as described by Friedman (2006). Characteristics such as:

- Great Collaborators (through FFA),
- Great Synthesizers (through improved classroom instruction),
- Great Localizers: the power of global platform to local conditions (through FFA & SAE),
- Great Explainers (through classroom & FFA),
- Green: understanding of balanced ecology (through natural resources curriculum), and
- Passionate Personalizers (who is more passionate than FFA members?).

This idea of a Flat World is not a threat. We should embrace the paradigm shift that allows us become more invested in a society that encompasses not only our small scope of reality, but the larger sphere of the world. Staying relevant to our local schools and communities through embracing globalization, thus maintaining relevancy to our state and federal educational communities, is a responsibility that falls on the back of every local agricultural educator. It is not a charge that can be shirked. It is one that must be welcomed with the understanding that we must always be honing our craft to implement our premier delivery system. Making our system as efficient and as effective as possible with all the tools and techniques available, we must share this connection with those around us, our key partners, so they will understand and appreciate the beauty of what we do and the global, productive citizens that we are creating.

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Daniel Foster is a graduate student at The Ohio State University.

Kattlyn Wolf is a graduate student at The Ohio State University.

[End Note: The authors are continually trying to stay relevant in a flattening world. They would love for you to be their Facebook/ Myspace friends]

Who dares to teach, must never cease to learn.

~John Cotton Dana (1856-1929)

Tech No - No More

by MeeCee Baker

Along with being a Baby Boomer, I just discovered that I belong to a newly fashionable offbeat group called Tech Nos, or those who opt out of the latest technology. I do not have a television or a laptop. Saturday nights are spent with NPR and Garrison Keillor's Prairie Home Companion. My dear departed sister thought I was causing permanent damage to my now nine-year-old daughter. **I feel self-righteous**. After all, Libby read Little Women in kindergarten. I secretly worry. Will the lack of exposure to pop culture cause Libby to be the brunt of playground brutes?

Considering the aforementioned confession, I seemed an unlikely candidate to author an article regarding changing technology and the future classroom. Then I realized, while I no longer have students (I now work for the PA Secretary of Agriculture) to beckon for technological assistance, I do have young colleagues who not only do most tasks more efficiently and effectively, but also help me on a daily basis with my personal technology hang-ups. It seemed logical to ask them for help again.

Read below to find their answers to how technology will or should change our classroom delivery systems.

The use of satellite classes, on-line classes and the fact that new technology "in" the classroom provides better access to a wide variety of learners makes many things possible. This truly makes obtaining a degree/education much more convenient. Not only can you complete coursework while fulfilling other commitments - other factors can be diminished including language barriers, learning disabilities, time constraints and even monetary investments. I finished my college degree requirements through the Brigham Young University while I was student teaching and holding a part time job in rural Pennsylvania. (And yes, I am still a Catholic!)

Learners are also given a broad array of educational venues. It would be possible for students to network with scientists and/or specialists who they could have only dreamed of interacting with before. Technology also provides students the opportunity to apply their skills practically, therefore, enforcing the information learned and the purpose for which the skill is necessary.

Technologically proficient employees are sought after in the workforce. Not only is technology important in the classroom for learning skills and information, it also educates students on how to use the technology. Let's face it, in this day and age our time is taxed, our minds are laden and survival is the first priority for many. Education (on many levels) can still be at the forefront of every agenda if it remains accessible, affordable, and exciting-technology provides this!

Heidi Svonavec
Director of Consumer Affairs
PA Milk Marketing Board
2002 Agricultural Education
Penn State University

I'm probably not the best person to answer these questions, but I can tell you about my personal experience. For my generation, technology in education was almost a mythical figure - something we heard a lot about but never actually materialized. My high school had good computers, but actually integrating them into a lesson was cumbersome. It basically came down to teaching in a traditional manner (books, lecture, overheads,) with one day of "computer lab" time in which we were given dull computerized tasks (i.e., "Find ten facts about Shakespeare on the Internet" ...lame). This was partly due to the newness of

Some of us take longer on the technology learning curve.

the technology and teachers' unfamiliarity with technology. Couple that with the fear that we would all just sit down and look at naked girls or learn how to make bombs and these quickly became completely scripted, narrow "learning" experiences.

That being said, I think that students today might find some of this coming true. As technology gets closer to what we think of as "high-tech" (faster internet connections, larger storage capacity, etc.) and with more young teachers understanding technology, students may see more freedom to use computers to learn. The freedom aspect is important, because that is what the Internet is designed to provide. Being told to look three specific things up on the Internet to fill out a worksheet is not any more interesting, and does not "stimulate self-education," any more than looking them up in a book. Where technology shines for education is in the more casual sense of learning. Someone- a teacher, coach, and fellow student- says something, which sparks a question in the mind of a student. With immediate access to the Internet, a student can look up the answer instantly, creating satisfaction from learning. This could lead them to read more about the topic, and create a self-motivated learning experience. We all do the same thing here at the press office - someone says something we don't know about, so we Google it and read about it until we understand. In my opinion, using technology as a new channel to 'teach' (like putting lectures on iPods, using Smartboards instead of chalk) are just new ways of doing old techniques. Allowing students to use technology to learn on their own is a better use, and motivates them for a life of learning (Can you tell I'm married to a teacher?)

Chris Ryder
Information Specialist
Press Office
PA Department of Agriculture
2004 Communication Journalism
Shippensburg University

Technology can be used to better enhance, communicate with and well equip students of today and tomorrow. Why? Because technology has weaved its way into both the workforce and social fabrics of our world and has become a norm amongst facilitating everyday life. Students of today need to be prepared to operate in the workforce of tomorrow. Many of these skills can be developed early in the classroom by utilizing technology to enhance the learning experience of students. Familiarization of technology "speak" should begin early in the school career by utilizing computers and the Internet to develop a sense of understanding of how technology can be used for things such as research and exploration of new ideas. Technology can also be used to bring the students closer to an educational opportunity by offering a means of communication and experience through digital video/images and email. The Internet and technology can bring far away places and experiences right into the classroom as can communication tools such as email and video conferencing.

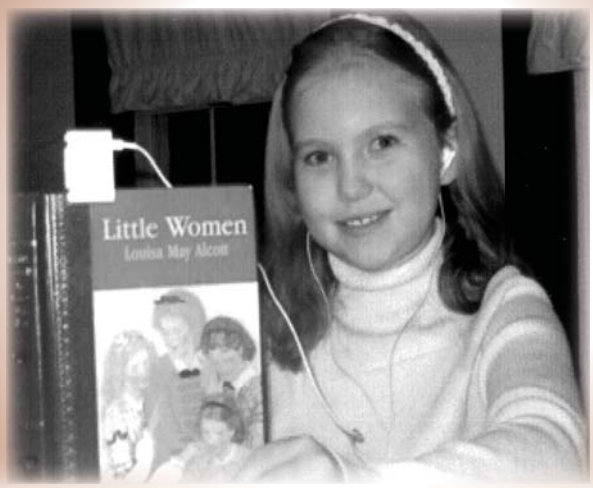
Students today can travel worldwide by a click of the mouse and typing a few words into an Internet search engine.

Technology can also be used as great tool for interaction with parents and students alike. Teachers can post notes, study guides and presentations to students via classroom websites. Teachers can also build a closer bond with parents by listing assignments and important notices on the web or via email. Considering the proliferation of instant messaging and email among today's youth, teachers have a vast world of opportunity made possible by technology that did not exist in the past. All the while this digital interaction readies these students for the reality of the technology "head first dive" they will take as they pursue higher education or tackle the working environment.

Sean E. Crager
Chief Information Officer
Pennsylvania Department of Agriculture
2002 Geoenvironmental and Geographic Information Systems
Shippensburg University
US Navy Veteran

With the many new implements of technology, the world is at our fingertips. Students today can travel worldwide by a click of the mouse and typing a few words into an Internet search engine.

Research has been simplified with the use of search engines such as Google and Lexus Nexus. We have entered the information age where anything and everything is literally at our fingertips. While teachers and parents should use technology with caution, it is an incredible tool that will create culturally and globally aware students.



Libby reading "Little Women," proving the love of reading is not a lost art.

Kendy Gable
Legislative Assistant
PA Department of Agriculture
2006 Dairy Science and Ag Communications
Cornell

Students are now able to research information more quickly and deeply than ever before with use of the Internet. The technological resources are endless. I am considering an on-line master's program. This would have been impossible in the past. Some Pennsylvania fairs and our state Farm Show, in essence our state fair, offered wireless Internet on the grounds. This service was met with great appreciation.

Eric Cowden
Fair Fund Administrator
PA Department of Agriculture
2003 Agricultural Business Mgt.
Penn State

I began this article with a confession, and will end in the same mode. I do have an iPod. Dare I admit that my Libby assisted with the downloading procedure? Further, my state- issued Blackberry is always within reach. So while I may be the only one who walks next door (in lieu of emailing) to ask an office mate a question, I will concede to the significant impact that technology has had on society. My 82-year old Father emails his WWII Navy buddies daily, and some of my Amish neighbors have cell phones (just like my Blackberry, business use only). So I will be a Tech No, no more. Still, I worry about losing the human element in education. It is that personal connection that inspires and moves students to achievements they never dreamed possible. Miss Glenn did that for me.

PS Libby, left without television, continues to ponder the great questions of the universe such as, "Who do you want to be, Meg or Jo". Jo wins every time.

MeeCee Baker, PhD., is the Agricultural Education Coordinator for the Pennsylvania Department of Agriculture. She also serves as an adjunct professor for North Carolina State University. MeeCee served as NVATA President in 1997.

Did you know???

- The Egyptians believed that the god of agriculture, Osiris, taught humans how to make beer.
- About 99% of today's agricultural production depends on only 24 different domesticated plant species. Of those, rice, wheat and corn account for most of the world's caloric intake.
- Einkorn is a variety of coarse grained wheat, and is believed to be the ancestor of all modern wheat varieties. DNA studies indicate that it originated in southeastern Turkey some 10,000 years ago, at the very beginning of agriculture.
- Per day, a cow spends 6 hours eating and 8 hours chewing cud.
- A cow stands up and sits down about 14 times a day.
- A newborn pig, weighs 1-2 kilograms
- The American uniforms during the Revolutionary War were blue(well those who actually had one). They were blue due to the fact that indigo was the primary plant grown in the south, thus it was one of the only colors the states had.

Agricultural Education has come of age. By that I mean we have evolved to meet the needs of the students we serve. We are adept at what we do, and now it is time to begin to fill in the missing pieces.

We understand today what our early forefathers did not—any program that has the ability to affect lives to the extent of agricultural education/FFA, **MUST** be made available to all students. But how do we do that? Just opening the door and saying, "Come on in!" isn't always enough. Students need to feel valued and welcome. For the next three years this area of *The Magazine* will be devoted to tips for making all your students and potential students feel valued and welcome. Each issue will provide tips to help you reach that goal. Please feel free to send any ideas you might have to the Editor. We will work to find space for all of them.

Maslow was right. We have created safe, secure havens of learning. We call them public schools. These places strive to maintain order, provide adquate security and appropriate nutrition. Further, in agricultural education we endeavor to make students take ownership in their own education. We teach them basic leadership and communication skills to accomplish this. In turn this creates a sense of belonging and the creation of friendships. Through FFA we have a plethora of ways students can improve their self-esteem. So, by my calculations that puts us right up to Maslow's SELF-ACTUALIZATION level.

Wow, that means we are responsible for guiding our students through the process of understanding morality, creativity, spontaneity, problem

solving, lack of prejudice, and acceptance of facts! That sounds like a tall order, but it can be accomplished easily after the first step. Once a teacher makes a conscious decision to create the best atmosphere for these lofty goals, it soon becomes part of the daily routine.

Where to begin?

Discover who you are

Knowing who we are is the first step to appreciating those around us. We must understand our own culture in order to appreciate others.

- **Define culture.** One definition of culture is "a set of learned beliefs, values and behaviors the way of life shared by the members of a society." It is important to remember that there are many cultures, such as:
  - *Gender culture*
  - *Ethnicity culture*
  - *Religious culture*
  - *Family culture*
  - *Regional culture*
  - *Workplace culture*
  - *School culture*
  - *FFA culture*
  - *Athletic culture*
  - *Music culture*

Almost any group we spend time with that affects our behavior and beliefs can be defined as a culture.

- **Learn about your own culture.** Have a day that students "discover" the agricultural culture of their home area.
  - Who were the first farmers, ranchers or other producers in their area?
  - What country did they come from?
  - What types of practices did they establish?
  - How did those early agricultural life styles, values and beliefs affect the way we behave and believe today?

- **Learn to accept different cultures and values as valid and things can be understood or learned**.
  - Give each student a paper lunch bag. Their assignment is to bring it back with 1 or 2 objects inside that represent their own family culture and connection to agriculture. Then each day let 2 or 3 students (however many time allows) share their objects and their own backgrounds. This activity provides insight into each student's attitudes and allows everyone to share and build trust.

It is amazing how many things people value the same regardless of ethnicity, gender or belief.

Check back again for more ways to make your program inclusive for all interested students.

Billye

Flattening Classroom Walls

By Jason Larison

For evidence of how the world is flattening, we need to look no further than our Agricultural Education classrooms. Since the start of my teaching career in 1995, I have seen technology flatten the "walls" of my classroom tremendously. Early in my career, grades were limited to my grade book, parent communications were limited to an FFA event or SAE visit, and my major form of teaching in the classroom was with a marker board, overhead projector and my creativity. Fast forward to 2007, the grades on my laptop are instantly uploaded to the web for parents and students to log in and check, the ease and speed of e-mail and cell phones has parent contact definitely happening on a more regular basis, and a few minutes after my class is over the notes from my electronic whiteboard are uploaded to our MOODLE website where students can access them as well as many other electronic resources available for students to learn critical concepts. Yes, our world is flattening and the "walls" that used to block my classroom from the rest of the outside world are continuing to be knocked down faster and faster. As I write this article, our high school is in the process of going completely 1:1, as every student will have received a new laptop by the end of January. Lets explore how technology is flattening the walls of the Agricultural Education classroom in little, small-town Holton located in Northeast Kansas.

MAXIMIZING STUDENT LEARNING

With technology allowing an "open" flow of information and learning opportunities both in and out of my classroom, students have more options and flexibility than they ever had before. First off, the basic tool of the Internet puts a wealth of agriculture information at the touch of students' fingertips. Concepts such as mapping the beef genome and mandatory animal identification are just simply too new and ever changing to be in our textbooks or purchased curriculum, but can now be in front of students in a matter of seconds. However, the Internet bringing information into our classrooms is only scratching the surface.

Using the test building website Quia (www.quia.com), I do 100% of my testing online and have not graded a paper test in almost 5 years. In my opinion, the impact on learning is huge. Students get instant feedback on the correct answers and their possible test scores just seconds after they press submit. Early in my career, I remember carrying bundles of tests and papers from school to home to grade. By the time I got some tests graded, scores calculated and returned, many students did not even recall that we had taken a test much less why they marked the answers they did. With Quia, I am also given statistics on every test so I can evaluate what concepts were mastered and which need some more review. I also give more frequent mini-quizzes to check for understanding which research has proven can help long-term learning and retention.

Remember the times of the chalkboard or the marker board? Right in the middle of the lesson, you get some great notes or diagram written on the board just in time to erase it "forever" to move on to the next concept. Soon it comes time to pause for a "technology reset" to pull out the overhead or TV/VCR to show another concept. Now in today's classroom, technology and learning can be seamlessly transitioned. The notes that I used to erase and lose forever are now captured on my InterWrite electronic whiteboard, and at the end of class they are uploaded onto my MOODLE website as a PDF file. In the process I may have used a portion of a PowerPoint or shown a video clip from a source such as United Streaming or my DVD player through my ceiling mounted projector. If a student is gone, they can download the notes, access any electronic files that I have used in class, and most importantly check the iCal calendar on their laptops which will have a short description of assignments due and class activities published from my laptop directly to their own instantly every single day. Gone are the excuses of, "I didn't know we had homework" and "I lost my notes or

The notes that I used to erase and lose forever are now captured on my InterWrite electronic whiteboard...

worksheet."

The tool that ties all of these learning opportunities for my classroom together is **MOODLE**, which I have mentioned a few times already. Moodle stands for Modular Object-Oriented Dynamic Learning Environment. It is an open-source (FREE!!!) alternative to WebCT or Blackboard. I have each of my courses set up in Moodle which is a great resource to not only facilitate learning inside the classroom, but also to connect to opportunities for learning outside of it. Moodle is available to students 24 hours a day providing opportunities that did not exist before. When I locked the doors to the Agriculture room in the past, the learning opportunities it contained often stayed locked inside. This year, I have seen students log in to study for a test, find a link to a website, use a Quia learning activity, print off notes from class, download a worksheet they have lost, review a PowerPoint, or submit an assignment online at 5:00 in the evening, 11:00 at night, and 6:00 in the morning. Using Moodle's chat feature, we have even hosted evening chats to answer student questions as they prepare for an upcoming test.

One of the newest tools that I have been experimenting with has been podcasting. Using Garageband and/or Profcast on my computer, I have made podcasts reviewing difficult classroom concepts, captured portions of a classroom discussion, and created a review for an upcoming test. Now that students have the laptops in their hands, the integration and usage of these technology tools can impact student learning more than I ever could have imagined. The walls and barriers to student learning have definitely been flattened.

COMMUNICATIONS

New opportunities to communicate with students, parents, and Ag Ed partners are developing on an almost daily basis. What was limited to a newsletter, phone call, or newspaper article in the past is now possible through almost unlimited choices. We have over 250 FFA Alumni and parents signed up on our FFA Alumni website (also using Moodle) that allows us instant access to communicate via an electronic news forum going directly to their e-mail inbox. The use of Powergrade and Powerschool has given parents and students instant access to my grade book to monitor their progress in learning in my classroom. From the main DreamWeaver website, anyone can access the "blogs" from my teaching partner and myself highlighting what has been going on in our classrooms.
Technology is also positively impacting our communications efforts in FFA. Our leadership team publishes a newsletter once every 9 weeks, and sends out an "E-Update" once a month. They are also experimenting with podcasting as a new communications tool. We are also making plans for students conducting exploratory SAE's to use blogs, podcasting, and iMovie as a means to communicate the learning objectives they have achieved. The potential for parents and partners to stay informed with what is going on in the agriscience classrooms and FFA chapters has never been as great as it is today.

Finally in the area of communications, one unique tool that Kansas Agriculture Teachers are utilizing is the KAAE Online Professional Growth Community. Along with sharing information for our professional association, we are using Moodle to communicate at a level never available for teachers in the past. Teachers can post a question and get a response from another teacher, and electronic resources and information can be shared between teachers with ease. This tool is allowing us to evolve from a basic list serve into an interactive "community" of teachers and knowledge that we can access anytime we need it.

A few minutes after the bell rings and this freshman agriscience class ends, all of the notes captured on the electronic whiteboard will be saved as a PDF file and posted onto the class website for any student who might have missed that day or others who want a refresher for the test.

> Technology will continue to make positive impacts on student learning and that technology will spread.

PROFESSIONAL LEARNING COMMUNITIES

Using cool technology tools are not the only item to completely flatten the "walls" of my classroom. The days of teachers teaching alone in their rooms isolated from the rest of the building is also a thing of the past. Professional Learning Communities is a movement that has been sweeping schools across the nation for some time and Holton High School is currently in its second year of PLC's. My teaching partner sits on the Career and Tech Ed PLC and I have joined the science PLC. We have a late start every Thursday, which affords teachers to meet together every week to have focused conversations about student learning. We use protocols and structures to guide our discussions and maximize our time. I have learned more about what is going on in classrooms throughout our building in the past year and a half than I had in the previous ten years combined. Whether analyzing a test, looking at student work, or having a conversation about a thought provoking article with my colleagues, I am without a doubt a better teacher in the classroom today because we now have a system in place that allows us to trust and learn from one another.

WHAT DOES THE FUTURE HOLD?

I never could have predicted the changes that have occurred thus far, so I am definitely no expert on predicting the future. I have been very fortunate to teach in a school that is on the cutting edge of technology and has made a commitment and focus on student learning. From my experience, I have developed two expectations for how the Ag Ed Classroom will continue to be impacted by an ever flattening world:

1. **Technology will continue to make positive impacts on student learning and that technology will spread.** There is still a huge gap in the technology available in our schools and although there is a big gap between schools currently with 1:1 laptop initiatives and those that are just now getting projectors and PowerPoint in their classrooms, those gaps are starting to close and will do so fast.
2. **This technology will allow our students to have access to an ever-changing agriculture industry and global environment.** Let's face it, as fast as the agriculture industry is changing, portions of most agriculture textbooks and curriculum are outdated as soon as they are printed today. Technology can be the tool that helps students learn about and prepare to compete in the global agriculture economy of the 21st Century.

In Holton High School with 350 students and our little community of Holton with a population of approximately 3,500, a flattening world provides opportunities for students, and it is critical that we do everything in our power to have them ready to live in that world. Although our main agriculture is still primarily cow/calf, soybeans, corn, wheat, and grain sorghum production, it has never been more important for all students to know about the diversity of agriculture around our country and the global opportunities and challenges they will face during their lifetime. Therefore, it is equally critical that we have our Agriculture Education programs positioned to allow students to do so

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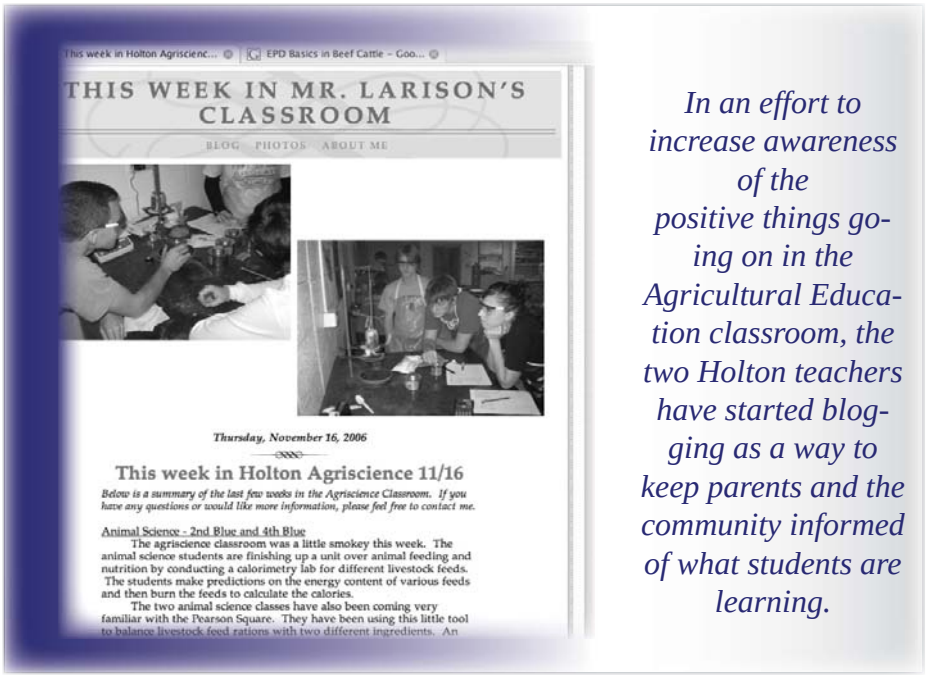

In an effort to increase awareness of the positive things going on in the Agricultural Education classroom, the two Holton teachers have started blogging as a way to keep parents and the community informed of what students are learning.

The World is flattening--Where will Agricultural Education fit?

By Nathan Torrance

Isn't it amazing that after some 2000 years of man traveling the earth that we now are using some of the same terms they did back in the beginning? "The earth is flat." Just as Christopher Columbus and many other explorers during the 1400's began to question that the earth was not flat but actually round, think now how ironic it is we are talking that the earth is flat due to our technological world. Just as amazing as it was for all the early explorers to take risks and see the future, we now in agricultural education are facing those same challenges and opportunities to either change and march ahead or get left behind and lose our prominence and need in the public education arena.

Where does Agricultural Education fit in?

In education, in our schools, in our communities, in our country, in our world, in the economy, in health, in research, in politics, in feeding the world, in training young leaders, and so on. These are thoughts that many of us in Agricultural Education have been asking ourselves, and now others are asking us the same questions. We must have an answer, for if we don't, our very existence is at stake in this fast paced, technological world. What is our overarching goal in Agricultural Education? I believe that we do fit in and that our ultimate answer is one that the National FFA has coined as-"Every Student, Every Class, Every Day!" We as agricultural education instructors must reach every student, every class, every day, or we are truly doing them a disservice for their future and success. For us to say that we are reaching every student, every class, every day, we must make significant changes and stay in the forefront of teaching styles and using the current and future technology.

As I think about what I do as an agricultural instructor and how I am keeping up with the changes, I am sometimes overwhelmed by how much more my students know about technology than I do. Ed Barlow made some statements at the 2006 National FFA Delta II Conference that really made me stop and take note of what I am teaching- the content, the validity and the need. Listed below are a few comments that he made that will be driving much of the thought of this article. All comments given credit to Ed Barlow:

- "75% of the information that kids have today is coming from the Internet."
- "The future isn't bad it is only different. Be willing to change and create change."
- "70 % of today's manufactured goods will be obsolete in 6 years."
- "80 % of the jobs today's kindergarteners will occupy sometime in the future don't even exist yet!"
- "Every 90 days 20% of information becomes obsolete."
- "Every student should take 3 online courses before graduating high school.
- "Kids who have been connected to something (ex. FFA or church), loved and nurtured are less likely to turn to drugs, etc.

After reading some of these thought provoking questions, you might be asking yourself the same three questions I am going to try to answer in the rest of this article. (1) What are we doing right? (2) What new ideas and concepts must we embrace to ensure our necessity in today's student's educational journey? (3) Putting the once round world with the now flat world and seeing success!

What are we doing right?

I believe that we in the agricultural education system have been doing things great since 1917 when it was recognized that there was a need to be teaching young men and now women about agriculture and train them to be competent leaders of tomorrow. How have we been doing that? Agricultural Education was founded on the three circle principle-Classroom, SAE, and FFA. Researchers are now saying that students learn best when they can apply the information learned in the classroom in a real world situation and that the top scoring schools in the nation are schools that are emphasizing character education, all three of the previous principles we have been applying since 1917.

National FFA and numerous states are beginning to set national and state standards that are cross-walked with science, reading, math, social studies, and humanities requirements for national and state standards to validate the existence of agricultural education in the public school system. Dr. Willard Daggett states that, "The top 25 schools in America are schools that the foundation of their curriculum is character education." Validating our existence is and will continue to be a top priority to keep our programs available to every student on their educational journey.

One of the most outstanding programs/curriculums that National

FFA has produced is the LifeKnowledge curriculum. This program/curriculum is the easiest and most effective teaching tool that I as an agricultural education instructor have ever used. LifeKnowledge is a curriculum that has over 250 scripted lessons that include activities, worksheets, answer keys and uses the most advanced teaching methods available. It is also linked to core subject material that allows a teacher to directly relate leadership qualities to core content. In the past two years National FFA has been developing a program for agriculture teachers to validate the good things that we do dealing with the aspect of Leadership. They have developed a series of tests that will allow a teacher to see where a specific student or class is on a given leadership continuum line. It then gives the agriculture teacher the information and ideas on how to further develop that specific student or class in their weak areas. What a powerful tool!!! "To educate a man in mind and not morals is to educate a menace to society." ---Theodore Roosevelt

What new ideas and concepts must we embrace to ensure our necessity in today's student's educational journey?

Many agricultural education instructors are in the forefront in using technology and making sure what they are teaching is relevant and useful for students. We in agricultural education have seen the change in the type of students who are entering our classroom. They are no longer the farm boy or girl who plans on going back to the farm and has a pretty good understanding of the agriculture industry before entering class. I teach in a rural community of 13,000 people. The two major industries are oil and gas and cattle and wheat. Yet out of 150 agriculture students currently enrolled, only 15 students come from off the farm and only 2 students come from families whose sole income is from agriculture. As we see this trend continuing, we must ensure that we are teaching a current and valid curriculum so that we can continue to receive the students heading for college, vocational programs or straight to the work force after school.

With our world becoming flat, due to the technological age, we must transition with our students in using technology and challenging our students to think futuristic and reflective. ***Scenario One***: Think for a moment--your class walks in, takes a seat and get their iPods out. You have the assignment already podcast and the students begin completing their assignments and activities assigned for that day or unit. They turn their work in by email to you or you have a "Clicker" system and they answer the assignment, test or quiz and it is automatically graded and put into your gradebook. Scenario Two: You have developed two of your classes to be accessed by Internet and can be taken as an online courses. Students turn their work in via email and you meet 3 times a semester- at the beginning to explain expectations and how class will work, mid-semester for test and updates and then end-semester for final test and class survey. These two scenarios might sound a little far-fetched for some agricultural programs, but if we are to keep up with the way education is being conducted, we MUST continue to stay current and even futuristic with our programs. Most of you are thinking the same as I have in the past – When do I have time to do all this? I don't even know how to use some of those programs or technology. But if you and I don't prepare our students, not only to be successful in the agriculture industry as well as life, we aren't doing them justice. Remember that we are the elite when it comes to leadership development, and for us to continue to carry that title we must challenge not only ourselves to continue to use the technology that is making the "world flat," but also prepare our students to succeed in a "flat world."

We in agricultural education will succeed in this new flat world.

We have succeeded in the past, we are succeeding now, but for our future success we must be willing to change how we do business. We must get out of the box of how agricultural education has been taught in the past and prepare ourselves, our students and our children to keep up and lead the world not only in agriculture, but also in leadership and character training. If we are in the business of developing Every Student, Every Day, in Every Class, we must make the necessary changes and advancements not only in our classrooms, but also in our teaching styles, strategies and the modes of delivery to each and every student. Whether it is podcasting, online courses, using new equipment to help deliver information and experiences to our students or

"To educate a man in mind and not morals is to educate a menace to society."

~Theodore Roosevelt

even changing what we are teaching to stay current and keeping our students competitive in the global market, we MUST challenge ourselves as a group to continue to get out of the box of traditional agricultural education.

Our job as educators is to develop the potential of every student. In developing students for premier leadership, personal growth, and career success, we must challenge, inform, educate and provide valuable skills so that every student, in every class, every day is being prepared to be competitive on the global-"Flat World" market. This will mean that we must embrace curriculum and programs such as LifeKnowledge, go to conferences such as Delta, become active in our state and national curriculum development so that we can continue to call ourselves the premier leadership development program in the nation. Learning how to use new technology and preparing students to use all the gadgets and programs that are the wave of the future will prepare them for future education and jobs. If we don't stay current and even futuristic, we are allowing some other country's young people to have the advantage, especially as the world is becoming flatter and flatter. Just as Christopher Columbus said that the world is round not flat, we must begin seeing our world through communication, education and technology as flat not round, and that there are many other countries that are challenging us in every aspect of the economy. Let us as the profession of agricultural education, stay current and futuristic. To reach the goal of Every Student, Every Class, Every Day, we MUST challenge ourselves to see the world as flat not round.

Nathan Torrance Agriculture Instructor at Woodward High School, Woodward Oklahoma ~Picture unavailable

THEME ARTICLE

Flattening or Moving Uphill?

By Linda A. Peterson

What a difference a couple of decades make! The high school Agricultural Education program that I graduated from in central Wisconsin in 1980 differs some from the program that I teach today. What strikes me the most, is how incredibly different the world in which we live has become over that passing time. I was so fortunate to have been a student in Mr. Evans' and Mr. Hegewald's agriculture classes. They were my ag teachers, FFA Advisors, and later, when I became an ag teacher, they served as mentors and friends. I wonder, while they prepared their lesson plans for the classes that my classmates and I would sit in, did they, in their wildest dreams, imagine what our world would be like today? What changes would they have imagined that our education system would make to keep pace with our changing world?

American high school students today are more techno savvy than any generation before them. They communicate with friends around the world or merely across the room with rapid ease without saying a word. Their infatuation with technology is surpassed only by their love of pizza and junk food. So, some things haven't changed all that much! The high school student who does not own a cell phone is a rare animal. Nearly as rare as the student who has difficulty sending a text message slower than 60 words per minute!

Today, my students pull their lecture notes down from my webpage, complete tests and quizzes as well as participate in review exercises by clicking the appropriate answer on infrared remote controls. Assignments are turned in via email or simply by saving a file on a folder on the server; they keep up with the latest news through podcasts and check their academic progress by logging onto the school's grading portal. My students regularly use the words Google, mp3, and dot com in complete sentences. While the use of technology in education is a positive change, let's make sure that we're not trading "bells and whistles" for rigor and relevance! The really important question is this--are we, in agricultural education doing all we can to help keep our students at the top of the world's graduating class, or do we have a marathon or two to run before we're within shouting distance of the frontrunners? Will our students be ready for the challenges of a global marketplace, or will they be running to catch up?

Today's high school students take more math and science than my classmates did. We require more literature, composition, computer science and foreign language than was required of me. But still I ask, are we doing enough? It comes down to a delicate balance between the old and the new. Technology speeds our ability to gain and analyze information. When technology replaces our students' abilities to think and problem solve, then perhaps it's time to pull out the paper and pencil and put the calculator away to brush up on our math skills. We must make sure that we teach the principles and processes and check for understanding. It is imperative that students are able to apply what they have learned to their own lives and problems.

In an age of high stakes testing, are

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we doing our share to improve student performance? Are we providing real world relevant educational experiences every day in our classrooms or are we merely teaching our students to pass the next standardized test? Are the courses we teach preparing students for living and learning in a changing and very competitive world, or are we simply covering units that interest us or are easy for us to teach?

Another important factor in all of this is the importance of personal relationships in education. This is something that ag education and the FFA have been ahead of the pack with. In a world with growing impersonal connections, we as ag teachers help our students to believe in themselves and give them the positive mentorship necessary for personal growth. That personal connection will become increasingly important in the schools of the future as more students connect to their education through the Internet. Our students will need to develop appropriate social skills to compete in an increasingly technological world. If they spend the bulk of their education plugged into a computer, accessing files through one of the numerous platforms like Blackboard or WebCT, where will the personal contact come from? We will have to work to help our students learn about healthy relationships and the importance of teamwork in the workplace.

The Ag Ed Family has adopted the lofty goal of 10,000 quality ag programs by the year 2015. We affectionately refer to this initiative as the 10X15 plan. The collective minds of the family have developed a list of 38 initiatives to help us to work toward the achievement of this goal. In our efforts to meet our 10X15 goal, we must remember the dynamics of our changing world and our role in it. American Agriculture is still number one in production in the world. What will we do in ag education to ensure that ranking? Will we provide the education and hands-on, relevant and rigorous education to keep our students as the most efficient producers of food and fiber in the world, while also preparing a breed of people who protect the environment while urging as much from the land as possible? How will the FFA change and grow to meet the educational needs of our members and future members? Will our Career Development Events and SAE based awards need to change to reflect the assessment of the application of more upper-level industry specific knowledge?

In a recent class discussion with my junior and senior students, the overwhelming opinion was that we place too much emphasis on testing and forget to really see if the students can use the knowledge we've passed along. Have we foregone the teaching of skills with our hands in lieu of teaching each standard for regurgitation on some test?

Our society has become apathetic. We've sat quietly by while India and China have used our infrastructure and technology to build their own economy and moved our jobs overseas. In order to bring those jobs back to the United States or at least replace them in our country, American Education will have to change, and so will the American mindset toward education. Education will have to become a priority again within each family.

In the future, our schools will need to require and offer more technology, more foreign language and choices of those languages. Technology will continue to be a way of life; we will continue to depend on technology in more and more ways for daily activities. More school consolidation will occur as schools in sparsely populated locations fail to meet the needs of their students. Students will get more of their education through online or distance education. School systems will be forced to think of their students and patrons as customers, not a captive audience. In a time of open enrollment in many states, schools will have to compete in more than just football for quality students. But isn't that the way it should be in the first place? We now have to prepare our students to compete with children in India and around the world for the jobs they want. Will our students be competitive in the global job hunt, or will employers opt for the better skilled, more highly trained and more productive student across the pond?

They say that our world is flattening. It looks to me like we have an uphill climb to regain our position in the world economy. It's time to take a step back and learn from our history. The ingenuity and determination of post World War II helped to put our country in the front in so many ways. In the recent past we've become too comfortable and sure with our place in the world. We can

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It's time to take a step back and learn from our history.

Living in a Flat World: What Globalization Means for Agriculture and AgriScience Education

by Karen Hutchinson and Jim Collins

Thomas L. Friedman's book, *The World is Flat*, is a fascinating look at the extraordinary changes that have taken place in our world during the twenty-first century. Friedman writes about the ten forces he believes "flattened" the world and how they have affected our lives. Unbelievably most of the "flatteners" Friedman cited have occurred within the last ten years. How does this rapid change and globalization affect the Agricultural Industry and AgriScience Education?

Agricultural Industry

There are a number of trends and uncertainties, over which we have no control, that have a significant impact on the agriculture industry. The global population is increasing. Energy demand is increasing, and we are all aware of the price of oil. In some parts of the world, there are shortages of critical resources, such as land, water, and capital. There are fantastic emerging agricultural markets in India, Brazil, Argentina, and parts of Southeast Asia. But access to these critical resources is a constraining factor. There is a tremendous uncertainty about what is going to happen to agricultural subsidies and global trade policies. Exchange rates have a huge impact on our industry, as does global unrest and terrorism, the economic balance of power, natural disasters, and the regulatory environment.

Global population growth is about 1.3% every year and is expected to reach 7 billion by 2015 and 9 billion by 2050. Forecasters have estimated that the number of cities greater than one million people will double to 60 over the next decade. These new cities will be in developing countries, placing significant pressure on the food supply infrastructure. World income is rising annually at 1.3%. More disposable income impacts peoples' diets as they demand more protein.

We are seeing the highest change in Gross Domestic Product in places like Argentina, China, and India where we are seeing a wealth build-up. Likewise, the percentage change in total GDP in the developing world is astounding. That money is being spent on food and infrastructure and is placing unique demands on the agriculture industry. So, in thinking about where to target business growth, it will not be the traditional countries.

Another leading metric that DuPont looks at very closely is carryover stocks of grain. In 1999-2000, the industry had high stocks for traditional crops, like rice, wheat, corn, and soybeans. By 2005, productivity had gone up. A good example is Brazil. Brazil is producing five times the amount of soybeans they were producing just a few years ago. During that time frame, the amount of grain that was left over at the end of consumption went down every single year. We can expect these carryover stocks to continue to decline, which complicates the logistics of moving limited supplies to the place where they are needed most to feed the world's growing population. Companies and countries will upgrade the efficiency of their distribution systems to address this issue.

As Brazil's soybean production grew, U.S. production remained flat. You might expect that Brazil flooded the market with all these new soybeans and that the prices fell dramatically because of the supply glut. The fact is, however, that the additional supply was directed to China. China made a fundamental decision that it is better at other activities than producing soybeans and partnered with Brazil to set up a bilateral trade agreement. It has become a fantastic agricultural partnership, and similar agreements between other countries can be expected.

Biofuels are a huge opportunity. The concepts of renewable supply, reduced greenhouse gases, and energy security are driving biofuels opportunities globally. Today, about 1.6 billion bushels of corn are being used in ethanol production. We expect that to approach 4 billion bushels over the next decade. Most counties in the Midwestern U.S. have one to two ethanol plants that have received building permits, and this is not even counting the facilities already in existence. It will be interesting to watch the price of corn as it moves into new markets.

AgriScience Education

Does AgriScience Education have a future in helping our nation keep up with globalization? Will the current three-component model of agriscience classroom/laboratory instruction, supervised agricultural experience programs (SAE), and the FFA, serve us into the future? The answer is yes.

Throughout his book, Friedman stresses the need for scientists and engineers while lamenting the decline in American students entering these fields. Friedman describes

science and engineering as being "about work ethic – the willingness not only to slog through all the fundamentals but also to stick with an experiment even when it fails the first twenty times."(p. 339, 2006) The AgriScience classroom is about learning by doing. Students work through experiments and projects, practicing until they understand. After gaining the knowledge in the classroom they are then expected to have a work-based learning experience or SAE, outside the classroom.

One of the newer types of SAEs is Research/Experimentation and Analysis. This type of SAE encourages students to conduct research or analyze information to discover new knowledge (www.ffa.org), which is exactly what our students need to encourage them to stay competitive in this "flat" world. Agriscience educators, at all levels, need to encourage more students to participate in the Research/Experimentation and Analysis SAE. One only needs to attend a National FFA Convention and hear about the projects students in this category are conducting, to know our students do have the desire and ability to keep pace with other students around the world.

National FFA has other programs to encourage and recognize students who are interested in pursuing a deeper understanding of the sciences. The AgriScience Fair provides an opportunity for middle and high school students, at the local, state, and national level, who are interested in the scientific principles and emerging technologies in the agricultural industry to develop research projects. Using the scientific method students can pursue research in the areas of botany, engineering, environmental sciences, zoology, and biochemistry/food science/microbiology. The AgriScience Fair continues to grow in the number of participants every year.

The Agriscience Student Program recognizes high school students who are studying the scientific principles and emerging technologies in the agricultural industry. The program provides scholarships to FFA members planning to pursue a college degree in agricultural science while helping to provide a reliable supply of agriscience graduates to meet the private and public agribusiness sectors' needs. (www.ffa.org)

The best part of programs such as the AgriScience Fair and the Agriscience Student Program is the opportunity they provide to expose thousands of students to the exciting world of sciences, research, and emerging technologies. As an agriscience educator it is rewarding to expose a student through a field trip or career awareness activity and have them say they have found what they want to do with their life. More of our nation's students might want to enter the fields of science and engineering if they were exposed to them in a meaningful way during their middle and high school years. Agriscience education can do that.

Passion and Education

In his book Friedman writes, "Give me a kid with a passion to learn and a curiosity to discover and I will take him or her over a less passionate kid with a high IQ every day of the week. Because curious, passionate kids are self-educators and self-motivators. They will always be able to learn how to learn, especially on the flat world platform, where you can both download and upload." (p. 304, 2006) Agriscience education does a great job in creating curious, passionate kids. Students are given the opportunity to pursue deeper understanding of subjects that are of interest to them. Agriscience educators must make sure they are feeding that passion.

Friedman also writes, "You can't light the fire of passion in someone if it doesn't burn in you to begin with." (p. 305, 2006) Think back to who your favorite teachers were. More than likely they were the ones that instilled a love of learning and were passionate about what they taught. If our students are going to be prepared to compete in the "flat world", agriscience educators need to be passionate about educating students in the science and engineering of agriculture.

How can agriscience education produce curious, passionate students? First, we need to make sure we have quality programs, meaning programs need to include all three components of the agriscience education model. Classroom instruction is critical in providing students with an opportunity to learn by doing. The agriscience classroom needs to be one of contextual learning where students are given a variety of learning experiences so they can make meaningful relationships between abstract ideas and practical applications. Having a laboratory component to classroom instruction provides students an opportunity to make that connection. This also means agriscience educators need to be aware of the changes in the agricultural industry and eager to learn about them. This can be done through good professional development, active advisory committees, and participation in conferences.

The SAE component encourages students to take something they have learned in the classroom and expand or deepen their understanding through a learning experience outside the classroom. The SAE program is the actual, hands-on application of concepts and principles

learned in the agriscience classroom supervised by Agriscience Education teachers in cooperation with parents, employers and other adults who assist students in the development and achievement of their educational and career goals. The SAE compontent is unique to Agriscience Education.

The FFA component provides students an opportunity to participate at the local, state, and national levels in a variety of programs and activities designed to allow students to demonstrate what they have learned in their classroom. The AgriScience Fair and Agriscience Student Program were mentioned earlier in this article, but there are a number of other programs and activities. The Agricultural Proficiency Awards program rewards FFA members at the local, state, and national levels for exceptional accomplishments and excellence in an SAE program. The Agri-Entrepreneurship Awards honor FFA members who have recognized a market opportunity and designed a plan to pursue it. The FFA also provides students an opportunity to participate in the Global Program. This program helps members develop a global perspective and become more culturally aware as well as increase their awareness about the ever-changing global marketplace. National FFA also offers 23 Career Development Events that create an opportunity for students to demonstrate meaningful connections between classroom instruction and real-life scenarios. (www.ffa.org)

Globalization has had and will continue to have a huge effect on the agriculture industry. Agriscience educators have an obligation to make sure students are ready to enter this rapidly changing industry. By providing an agriscience program that is built on the three core components of classroom/laboratory instruction, supervised agricultural experience programs, and FFA student organization activities/opportunities, agriscience students will be well on their way to finding success in a "flat" world.

Karen C. Hutchison, Agriscience Education Associate, Delaware Department of Education

James C. Collins, Jr, Vice President and General Manager, DuPont Crop Protection and National FFA Sponsors Board

The world stands aside to let anyone pass who knows where he is going.

~David Starr Gordon

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and challenges they will face during their lifetime. Therefore, it is equally critical that we have our Agriculture Education programs positioned to allow students to do so and they might just be carrying much of that information on their iPod. Using technology to maximize learning, communicating the good things in our programs to the public, and working with our colleagues to fine tune our craft of teaching is definitely flattening the walls of our classrooms, and our students will be the ones to reap the benefits.

Links of Interest:

http://www.holton.k12.ks.us/hhs/agriscience/
http://www.quia.com/
http://www.moodle.org/
http://www.apple.com/macosx/features/ical/
http://www.powerschool.com
http://unitedstreaming.com
http://www.profcast.com/
InterWrite School Board http://www.gtcocalcomp.com/index.htm

Research on the Advantages of Classroom Testing from Washington University in St. Louis, MO. http://news-info.wustl.edu/tips/page/normal/6715.html

Jason M. Larison is the Agriculture Instructor for Holton High School in Holton, Kansas. He also serves on this month's team of Theme Editors.

Life Skills Through Agricultural Education

by Rudy S. Tarpley, Brian K. Warnick, and William L. Diemler

Maybe there really is something to this talk about a flattening world. A few weeks ago we had the opportunity to host a delegation of career and technical educators from Malaysia. They came to tour secondary and postsecondary career and technical education (CTE) programs in Utah, including agricultural education. As they toured facilities, the Malaysian educators met with state CTE specialists, high school teachers, technical school instructors, and teacher educators. One might wonder how a group from Malaysia ended up in Utah. The answer is as simple as an Internet search engine. While looking for information on "Life Skills," the delegation found information related to Utah Career and Technical Education (CTE). From this simple search, global professional relationships have been established.

How did a search for "Life Skills" return Utah's CTE programs as a result? Utah Career and Technical Education programs, especially agricultural education, are committed to helping students develop skills they can use for a lifetime, especially those needed in a complex and global society. In this article we explore how agricultural education in Utah is working to meet these needs for our students.

The Call For Life Skills

In January 2006, the Utah State Office of Education (USOE) responded to legislation, state board resolutions and educational research by producing a "Life Skills" document (Utah State Office of Education, 2006). The publication was intended to help multiple audiences integrate well-identified competencies and dispositions more effectively in the academic core and classroom instruction. Those involved with the Life Skills initiative noted an educational belief that, "academic knowledge is not sufficiently comprehensive to prepare a child for the complex future and a lifetime of learning" (p. iii). Further, the authors noted that students need knowledge coupled with the important life skills that develop quality behavior. Once this union of knowledge with life skills occurs, several outcomes should be expected. These outcomes include the maintenance of democracy, safer schools and the honoring of diversity. Moreover, students will be better able to choose alternatives, pursue options, make decisions, think and reason, solve problems, appreciate nature, art and music, communicate effectively, and live full and happy lives that come because of a comprehensive education and the opportunities it brings.

Utah Life Skills

The Utah Life Skills document was divided into seven domains:

- Thinking and Reasoning
- Social and Civic Responsibility
- Character
- Aesthetics
- Communication
- System Skills
- Employability

Thinking and Reasoning

Thinking and reasoning are the use of cognitive and logical skills or strategies that increase the probability of a desirable outcome. Thinking and reasoning are intellectually disciplined processes of actively and skillfully conceptualizing, accessing, applying, analyzing, synthesizing, observing, experiencing, reflecting, reasoning, or communicating, as a guide to belief and action. Thinking and reasoning skills enable students to make logical choices in their lives. Students will become independent thinkers, able to apply thinking and reasoning skills strategically to solve new problems (Utah State Office of Education, 2006, p. 1). Indicators of thinking and reasoning include the ability of students to: (a) evaluate information and make decisions; (b) integrate new learning with existing knowledge and experiences; and (c) generate new and creative ideas in a variety of contexts.

Social and Civic Responsibility

Social and civic responsibility is the commitment to exploring and promoting the common good and meeting the needs of individuals and society without infringing on the basic rights of others. This includes participating in democratic processes, recognizing our commonalities, valuing diversity, respecting others, promoting social justice, and supporting the use of research for the improvement of the quality of life. Social and civic responsibility is critical to full participation of the individual in society and for society to support the individual. Students will expand their abilities to fully participate in community service, civic, and societal activities (Utah State Office of Education, 2006, p. 2). Indicators of social and civic responsibility include the ability of students to: (a) assume responsibility for personal actions and act ethically; (b) par-

ticipate in service learning; and (c) demonstrate the ability to resolve and mediate disputes.

Character

Character is the acquisition, internalization, and application of commonly held and time-honored principles which promote optimal personal growth, establish an upright citizenry, and support the common good life. Personal growth and character development are the foundation of a successful and independent lifelong learner. Students will develop personal qualities such as self-esteem, self-discipline, integrity, honesty, responsibility, sociability, and personal wellness for healthy living (Utah State Office of Education, 2006, p. 3). Indicators of character include the ability of students to: (a) identify their strengths and weaknesses; (b) demonstrate leadership attributes; and (c) display honesty, courage, integrity, kindness, morality, and respect.

Aesthetics

Aesthetics is the capacity to sense, appreciate, create, and respond emotionally to beauty in both human endeavors and the natural environment. Aesthetics helps us connect emotionally to what is being taught, making learning more meaningful and powerful. Aesthetics encourages innovation, creativity, and new ways of seeing and doing through a variety of disciplines and help develop emotional beings who are alive and contributory (Utah State Office of Education, 2006, p. 4). Indicators of aesthetics include the ability of students to: (a) engage in activities for aesthetic enjoyment and personal growth; (b) distinguish the qualities that define excellence in human endeavors; and (c) consider aesthetic qualities when creating, designing, or performing.

Communication

Communication is the art of expressing and exchanging ideas and feelings. Communication is a reciprocal process that includes the selection, analysis, and dissemination of information of information to others using a variety of methods. Communication skills are essential to successful performance in the workplace, society, and interpersonal relationships. Students will learn techniques to communicate clearly and use modern technology effectively (Utah State Office of Education, 2006, p. 5). Indicators of communication include the ability of students to: (a) select, plan, and organize ideas to communicate; (b) communicate with clarity, purpose, and understanding of audience; and (c) integrate and use a variety of communication forms and skills (e.g., verbal, non-verbal, written, electronic, and listening.)

System Skills

Systems thinking is the understanding of the roles within complex systems and how they function. Systems thinking requires an understanding of how parts of the system are connected, anticipation of the consequences of change, and the monitoring and correction of performance. Systems thinking is necessary to understand one's work in the context of those with whom one works. Students will identify systems, function within them, improve upon existing systems, and design new ones (Utah State Office of Education, 2006, p. 6). Indicators of systems thinking include the ability of students to: (a) gather information about how the system is intended to function; (b) know how social, organizational, and technological systems work and operate efficiently within them; and (c) work cooperatively with others and contribute to group goals with ideas, suggestions, and effort.

Employability

Employability is the capability to move self-sufficiently within the labor market to realize potential through sustainable employment. For individuals, employability depends on the knowledge, skills, and dispositions they possess, the way they use those assets and present them to employers, and the context within which they seek work. Employability is about being capable of obtaining and keeping meaningful work. Students will be able to obtain and practice the skills necessary for successful performance in the workplace (Utah State Office of Education, 2006, p. 7). Indicators of employability include the ability of students to: (a) demonstrate flexibility, adaptability, the capacity to cope with and manage change, self-motivation, dependability, loyalty, and initiative; (b) participate as an effective ember of a team; and (c) exhibit leadership abilities.

Meeting Utah State Office of Education Standards

The Utah State Office of Education mandates standards and objectives for public school administrators and teachers. In agricultural education 20 courses have been approved with specific standards and objectives developed. These courses include agricultural systems technology, animal science and technology, equine science and technology, floriculture and greenhouse management, nursery operation and landscape management, plant and soil science and technology, agricultural business management, natural resource management, and agricultural science and technology (Utah Skill Certificate Program, 2006). Within the agricultural education curricula exists specific standards relating to the FFA and Supervised Agricultural Experience (SAE) programs. These standards affirm that all Utah

agricultural education students should develop an understanding of the role of FFA in agricultural education as well as understand the benefits of an SAE program. From these standards, 14 learning objectives relating to the FFA program and 20 learning objectives relating to the SAE program are mandated and assessed. Annually, the USOE Agricultural Education Specialist in a cooperative effort with agricultural education faculty at Utah State University analyzes Utah agricultural education courses with respect to how they meet curricular standards, academic skills along with life skills. From these yearly analyses, it is clear that Utah Life Skills are consistently being met in the agricultural education program. Further, a majority of the Life Skills are being met primarily from the FFA and SAE programs. In the animal science curriculum alone (Tarpley and Warnick, 2004) Life Skills were being met in 168 instances by USOE objectives. Further, all Life Skills were addressed in some form by objectives related to the FFA/SAE programs.

When Utah students master the objectives "utilize parliamentary procedure in an FFA meeting" and "explain the benefits of the SAE", they are developing thinking and reasoning skills (Life Skill #1). As students "explain the characteristics of a good FFA leader" and "identify standards to follow in keeping records on an SAE program", they are increasing their knowledge of social and civic responsibility (Life Skill #2). While students are learning in their agricultural education classrooms about "FFA officer duties and responsibilities" and "the skills needed for career success through the SAE program", they are applying character skills outlined in Life Skill #3. When students "recite and explain the meaning of the FFA Creed" and "develop an appreciation for the history and development of agricultural education and the FFA", they are appreciating human endeavors (Aesthetics – Life Skill #4). As agriculture students in Utah classrooms "explain and construct an FFA Program of Activities" and "develop a training plan and/or agreement in an SAE program", they are refining their communication skills (Life Skill #5). When students "explain the history and organization of FFA" and "identify the steps in planning an SAE program", they are developing their understanding of systems (Life Skill #6). Finally, when agriculture students in Utah "develop plans and carry out activities related to degree programs, proficiency awards, and Career Development Events" and "determine the benefits of an SAE by explaining the importance of goals and career ladders", they are in reality preparing for meaningful work (Employability – Life Skill #7).

"It is important that all students receive the opportunity to learn and apply essential life skills so that they may become active members of society" (Utah State Office of Education, 2006, p. 9). Through the agricultural education curriculum, Utah students can obtain these essential life skills through participation in a proven model – FFA/SAE.

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Rudy S. Tarpley is an Associate Professor in the Dept. of Agricultural Systems Technology & Education at Utah State University.

Brian K. Warnick is an Assistant Professor in the Dept. of Agricultural Systems Technology & Education at Utah State University.

William L. "Buddy" Diemler is the Agricultural Education Specialist for the Utah State Office of Education.