The Agricultural
EDUCATION
MAGAZINE

September/ October 2013

Volume 86
Issue 2

Agricultural Education Magazine Potpourri

What's in Your Toolbox?

by Deborah A. Boone

As I headed off on my own, my father had a special gift for me…my very own toolbox! He had spent a good bit of time collecting a set of key tools he knew I would need and a few items he thought would come in handy. Knowing he could not send the tool shed with me, he included his faith in me to be able to use or adapt the array of tools to fit the occasion as needed. This issue of *The Agricultural Education Magazine* is a Potpourri of "new tools" for agricultural educators to add to their educational toolbox.

The article "*Differentiation in Action,"* clearly lays out how differentiated instruction should look and feel in the classroom to meet the various student needs. "*Skill-based Student Assessment"* provides a means to measure growth during a skill-based agricultural mechanics project. The article on using multimedia in the classroom, offers suggestions of how to improve the integration of multimedia to introduce a topic, provide an example or assess comprehension by connecting videos and YouTube to classroom objectives. "Training the Agriscience Dragon," offers insight into how to motivate students to think like researchers and seek practical applications.

"Living to Serve" taken from the last line of the National FFA motto, challenges FFA members and chapters to become actively involved in their schools and communities through service-learning. The article by Slavkin and Sabastian explores service-learning as an educational strategy while meeting the diverse needs within the communities. They walk you through understanding the concept of service-learning to how to identify a project and community partners, implementation and evaluation of the project.

The authors of the next two articles challenge us to think outside the box when looking for opportunities to expose students to the globalization of agriculture. Often we shy away from international agriculture because it is viewed as necessitating a study of a broad component. We can develop a sense of international agriculture and understanding of the cultures around the world, by infusing information about our link to other countries through agricultural commodities, their foods and dietary conditions, and by arranging opportunities for cultural interaction involving international exchange students or with residents who have lived in a foreign country. When it comes to understanding global agriculture and the need to prepare our students to think globally, there should be no box…it is wide open and fertile soil for cultivating global understanding and cultural diversity among our students both at the high school and collegiate levels. The boundaries of your school district, your county, state or nation should not be barriers to reaching out and preparing students to function in a global society.

As we look to engage students internationally, we also need to engage agricultural education students with the National FFA well beyond their high school graduation. Crutchfield describes how the Agricultural Career Network (AgCN) is designed to help fulfill the third tenant of the FFA's mission to help members achieve career success. AgCN helps students build portfolios while in high school, which can be maintained and utilized well past graduation and into their chosen career paths.

All the articles in this Potpourri issue provide unique ways to enhance the classroom experience for all agricultural education students. I hope that you find many new tools here to add to your personal "toolbox." Take the concepts and adapt them to fit your situation and classroom.

Dr. Deborah A. Boone, the September/October Theme Editor, is an Associate Professor at West Virginia University.

Editor's Comments:

Occasionally I have the problem of too much material for an issue. This issue is an example. I was on the verge of cutting two articles. By eliminating my editorial, I saved enough space to add one article. Even with this move I had to tell one group of authors that I could not publish their article. I will work to get the article in a future issue but it is difficult telling someone that their work will not be published. Enjoy the variety of articles in this Potpourri issue.

Dr. Harry N. Boone, Jr., is a Professor at West Virginia University and Editor of ***The Agricultural Education Magazine.***

CONTENTS

Theme: Agricultural Education Magazine
Potpourri

Cover Photo: Students learning about greenhouse production at Yeoju Self Management School in South Korea. *(Photo courtesy of Daniel D. Foster)*

Subscriptions

Subscription price for *The Agricultural Education Magazine* is $15.00 per year. Foreign subscriptions are $25.00 (U.S. currency) per year for surface mail, and $40 (U.S. currency) foreign airmail (except Canada). Orders must be for one year or longer. We can accept up to a three year subscription. Refunds are not available. Please allow 4 - 6 weeks delivery of first magazine. Claims for missing issues cannot be honored after three months from date of publication, six months for foreign subscriptions. Single copies and back issues less than 10 years old are available at $5 each ($10.00 foreign mail). All back issues are available on microfilm from UMI University Microfilms, 300 North Zeeb Road, Ann Arbor, MI 48106. UMI University Microfilms telephone number is (313) 761-4700. In submitting a subscription, designate new or renewal and provide mailing address including ZIP code. Send all subscriptions and requests for hard copy back issues to the Business Manager: Jay Jackman, National Association of Agricultural Educators (NAAE) 300 Garrigus Building, 325 Cooper Drive, The University of Kentucky, Lexington, Kentucky 40546-0215, Phone: (859) 257-2224, FAX: (859) 323-3919.
E-mail: NAAE@uky.edu

Article Submission

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

Editor

Dr. Harry N. Boone, Jr., Professor, Agricultural and Extension Education, West Virginia University, PO Box 6108, 2054 Agricultural Sciences Building, Morgantown, West Virginia 26506, Phone (304) 293-5451, FAX: (304) 293-3752.

E-mail: hnboone@wvu.edu

Publication Information

The Agricultural Education Magazine (ISSN 0732-4677), published bi-monthly, is the professional journal of agricultural education. The journal is published by The Agricultural Education Magazine, Inc. at 300 Garrigus Building, The University of Kentucky, Lexington, Kentucky 40546-0215.

Periodicals Postage Paid at Lexington, Kentucky and at additional mailing offices.

POSTMASTER: Send address changes to The Agricultural Education Magazine, attn: Jay Jackman, 300 Garrigus Building, The University of Kentucky, Lexington, Kentucky 40546-0215. Phone: (859) 257-2224, FAX: (859) 323-3919.

Differentiation in Action: From the Lesson Plan to the Assessment, Using Differentiated Instruction to Improve Career and Technology Skills for the Modern Workplace

by Michelle Pavelock & Julie Harlin

The term "differentiated instruction" has become a fixture in today's educational culture, replacing some of the old buzz words such as mainstreaming and inclusion (Hall, Strangman & Meyer, 2009). Many educators, however, still struggle with the look and feel of differentiated instruction. Defining it is the easy part; however, describing how to put it into practice and what it should look like is much more difficult for even experienced educators to envision. Knowing the basics from lesson planning to assessment can assist educators in breaking down the process for ease in utilization. Differentiating is as important for the educator as it is for the student.

The basic function of differentiated instruction is to reach each student at their level. The teacher must be prepared to accommodate and modify to help make learning more meaningful, but how can an educator reach every student during one lesson? The answer is simple: break it down!

Getting to Know Your Students

The key to genuine differentiation is knowing the individual needs of each student. This is important because in order to meet each student's needs we must know their current level of knowledge in order to modify work or accommodate them in any other way. Without knowing each student individually, true differentiation cannot occur.

The first week of school is difficult, especially in agricultural science. Students often pop in and out deciding which electives to take. This week should be utilized to learn about each student and assess their current level of knowledge. This can be done in many ways.

First, for special needs students, they should have paperwork that is brought to the teacher. This paperwork should outline required modifications and accommodations for each student, and although the laws from state to state vary in terms of the level of access each teacher can have, one thing is certain: teachers must follow those modifications because they are the law.

Special education is just one of the many labels that today's students walk through the door with. Gifted and talented, English as a Second Language (ESL), and economically disadvantaged are just a few. Trying to get to know and understand the needs of every student for a secondary teacher can be a very daunting task. However, it is essential that the teacher understands the needs of each learner.

Developing Meaningful and Measurable Objectives

Getting to know each student can lead into forming more meaningful objectives for the lesson. Objectives are one of the most valuable tools for educators in differentiation. It is from these daily objectives that the educator can adjust the lesson to the individual needs of students. In the following example, a standard objective is taken from an equine science course. Objectives for special education students, regular education students, ESL students, and gifted/talented students are presented. Please note, this is for the same general objective. It is only slightly modified for each subgroup. Modifying objectives will then help the educator form a lesson that is not only differentiated in terms of learning but also in terms of assessment later by setting the criteria and mastery standard.

1) The student analyzes equine science as it relates to the selection of horses. The student is expected to:

(A) recognize the importance of the equine industry; and

(B) evaluate and select horses.

This is a general equine science objective that would be evaluated through a traditional 70% mastery. For a special needs student this objective would need to be modified slightly in order for them to show mastery. The objective for the special education student should be modified to fit their ability level and reflect the level of mastery and assessment in it as well.

"Utilizing videos and teacher prompting as needed, the student will be able to list two reasons the equine industry is important in today's society when asked by the teacher on 3 out of 4 trials."

This objective is written to set a solid way to measure. The expecta-

tion for this particular student is to list two reasons the equine industry is important. If this student can do this for 3 out of 4 trials, they would have mastered this objective. This objective might also fit the needs of all the special education students in the room, or their ability level and background knowledge may vary so much that separate goals need to be made.

For the ESL learner, vocabulary is a major component of the educational process. It would not be necessary to change the general objective itself, but rather add an additional objective to cover any necessary vocabulary that accompanies this lesson. Again, this objective is for a particular subgroup and addresses their needs, which in this case is vocabulary. The teacher is also setting the mastery level at 70% and lists how it will be assessed at the end of the unit.

"The student will be able to define key vocabulary when used conversationally regarding equine selection as evaluated by teacher checklists and multiple choice questions for 70% accuracy on the end of lesson assessment."

Many agricultural science teachers will have students in their classes that are already proficient in a particular area, in this case equine science. In order to enrich this topic for these students, the teachers should require more rigor within the same lesson. To accommodate these students, an objective could be modified in the following way:

"At the completion of this unit, the student will research and present an oral report utilizing five references that outlines the ways in which the equine industry is important to the United States economy and demonstrates the proper selection criteria of horses as based on AQHA guidelines and FFA contest rules."

Objectives can be modified in any way the instructor sees fit to address the needs of the students in the class, but those objectives must be measurable and appropriate for the students in the room. In order for every student to achieve mastery, they must have an objective that fits their level of knowledge and ability.

Presenting the Lesson

Once the objectives have been prepared, the teacher then must present the information in a meaningful way. Differentiation means that instructional strategies are used to reach every learner. There are several models to help the teacher determine the best ways to differentiate.

The Learning Pyramid (ntl.org, 2005) states that the highest and best form of meaningful learning is to teacher others, with the least effective strategy being listed as lecture. Teachers must utilize Bloom's taxonomy (Bloom, 1956) to address learning styles and multiple intelligences within each classroom.

Regardless of which teaching-learning model the teacher chooses to follow, the bottom line is that information should be conveyed to the students in a way that they are able to internalize and synthesize. Some lecture is necessary at times and whole group instruction can be utilized as well, but when an instructor relies on those methods of instruction too much they are not able to differentiate because they are not able to individualize instruction.

For example, when presenting the lesson in equine science, the instructor may begin with an introduction about the equine industry. From that introduction, the instructor will utilize several student engagement strategies from cooperative learning, learning stations or centers, and even games to help make the information more meaningful. Pairing advanced learners with special needs learners can be a form of differentiation as well. As the learning pyramid states, teaching others is the highest level of student engagement. Allowing students within the class to partner with or teach others requires that they are synthesizing the information, using critical thinking skills, and showing understanding. The other student is also engaged in the learning process by receiving direct instruction and being given immediate feedback.

Regardless of the instructional strategies used, as long as every student is engaged at some level, differentiation is taking place. The key is student engagement. Agricultural science uses hands-on learning as a cornerstone of its curriculum; differentiation is naturally occurring in many situations where agricultural

science teachers have often grouped students into projects based on ability level and prior knowledge.

For special needs students agricultural science classes are an opportunity to learn valuable career skills outside of traditional classroom settings. They are also an opportunity to feel successful at school, whereas in other courses, they might not ever feel that sense of fulfillment or success. The agricultural science teacher needs to understand that career and technology's challenge is to prepare students such as these for the workplace.

The agricultural science teacher must also be familiar with the career pathway of the individual students. This is determined during Individualized Education Plan (IEP) transition meetings and Admission, Review and Dismissal (ARD) meetings beginning in middle school. During this time a committee, including the student, decides the career pathway best suited for the student. Teachers should utilize this information when deciding the activities and engagement strategies for each student.

If a student desires to be a welder, is higher functioning, and who's disability is reading comprehension, teachers should focus on activities that center around that chosen goal. Other classes that may not necessarily be about welding should also, utilize instructional time to build reading skills, agricultural business skills such as balancing a checkbook, and communication skills that are important for employees to possess.

Disabled students may need more basic training such as good workplace communication skills, time management, and appropriate dress. Simply helping that student learn how to water plants, the proper tools to use in a greenhouse and the importance of cleaning up a work area can all be valuable career skills that they may not learn in any other course at school particularly if they are in a life skills room most of the day.

By referring to the IEP meeting notes and visiting with the parents and special education teachers, agricultural science teachers can choose engagement strategies that meet the needs of individual students and find the best ways to involve them in class activities without compromising safety. Not all students are created equally, so preparing objectives and lessons that reflect those individual needs are the best practice for differentiating.

Assessing Using Differentiation

Traditionally students are assessed using paper-based tests. These tests may use multiple choice questions, true/false, and essays. In agricultural science, project-based, authentic and performance-based assessments are utilized as well. With differentiation, those same forms of assessment can continue to be utilized as long as they are designed to measure what was taught and evaluated through the individualized objectives. It is important for teachers to remember that the assessment should be a direct reflection of the objectives that were originally formed, especially noting the level of mastery expected.

It is also important that teachers assess based on the way students were taught. For example, if students are taught the parts of the oxy-acetylene cutting torch using the actual rig, but are assessed using an old photocopied picture, it could be expected that students would not perform well. That doesn't mean that teachers should teach to the test, but they should be aware of assessment techniques prior to instruction to ensure that all students can demonstrate success later. Teachers should also feel the freedom to individualize assessment techniques for individual students.

In summary, the role of the educator has changed over the years. The demands on teachers are higher in terms of student success and preparedness to enter the workforce. Differentiation provides the individualized instruction that is necessary in today's diverse classrooms. Engagement and differentiation are key elements for student success. With a commitment to helping every student reach their ultimate potential while developing skills related to differentiated instruction, teachers can be decisive factor in their classroom.

continued on page 17

Michelle Pavelock is a Special Education Coordinator at Anderson-Shiro ISD in Anderson, Texas. She is currently pursuing her Ph.D. at Texas A&M University.

Dr. Julie Harlin is an Associate Professor in the Department of Agricultural Leadership, Education, and Communications at Texas A&M University.

Skill-based Student Assessment: As Easy as 1.2.3…4

by Nathan D. Clark, Kellie J. Enns, Jordan "Jo" Johnson

Need for Assessment

Assessing student growth during skill-based agricultural mechanics projects is not an easy task. Traditionally, agriculture teachers assess student knowledge on safe practices and operation of skill based tools and equipment prior to project construction. A student's work attitude or work ethic is often the measure of assessment while completing the project. Finally, there is an assessment of the quality upon completion of the project. Unfortunately, these methods of assessment do not provide any form of feedback of the student's growth *during* the project.

Phipps and Osborne (1988) state "teachers often fail to approach evaluation of student performance in the laboratory with the intensity and regulatory given the assessment of classroom achievement." Laboratory based projects often take several weeks to complete and a large amount of class time is usually spent working on project development. This significant time is validated because project based construction allows students to practice skills at the highest level of application coupled with important work-place skills such as work ethic, critical thinking, and problem solving, however regular and adequate feedback to students on their performance in class is important and should play a major role in course design. If a lab project takes several class periods to complete and the only student feedback is related to safety before the project starts, the quality of the project when finished and how hard the student is working during the project, then a vital opportunity to evaluate the student's actual growth during a project has been missed.

The stakes for assessment are higher today and the need to benchmark student growth at a more significant level is necessary. Administrators, state legislators and even the Perkins Act are tying teacher performance, evaluations and funding dollars to student performance and assessments, further justifying the increased need that adequate laboratory assessment is a must in agriculture programs. This opportunity for benchmarking student growth factors and showing progress of growth over time is essential for the justification of lab based projects. The use of practical and adequate assessment practices in the laboratory may provide additional justification for student learning outcomes where academic tests are not feasible for demonstrating student academic growth.

Utilizing Assessment Tools

When teaching in the laboratory, it is common to teach and assess students related to their knowledge about the safe operation of tools and equipment, typically done prior to starting a major project. The traditional matrix for this assessment is a simple safety test in which students must score a 100% before being allowed to operate and perform tasks in the lab. This method of assessment is adequate for determining how much knowledge the student has but does not allow for assessment of the student's performance while using a tool or piece of equipment. When a skill card assessment, like the sample pro-

Student's Name:		Class:	
Tool: Circular Saw	**Knowledge**	**Probationary**	**Qualified**
Safety:			
1. Identify parts	1.	1.	1.
2. Operating positions	2.	2.	2.
3. Material use	3.	3.	3.
4. Safety test	4.	4.	4.
5. Sensory awareness	5.	5.	5.
6. Pre/Post inspection	6.	6.	6.
7. Utilize PPE	7.	7.	7.
Operation:			
1. Selecting blades	1.	1.	1.
2. Installing/Removing blades	2.	2.	2.
3. Correct support	3.	3.	3.
4. Blade depth	4.	4.	4.
5. Rip cutting	5.	5.	5.
6. Bevel cutting	6.	6.	6.
7. Pocket cutting	7.	7.	7.
Tuning:			
1. Check/Adjust positive bevel stop	1.	1.	1.
Maintenance:			
1. Cleaning the tool	1.	1.	1.
2. Replacement of power cord	2.	2.	2.
3. Storage	3.	3.	3.

Job Operation Sheet Area: Ag Mechanics Job: Construction of a Drawer		
Step	**Procedures**	**Safety and Key Points**
Cut boards to length	1a. Use 1"x4" select pine boards 1b. Use a hand saw to cut boards 1c.Cut two boards 14" long 1d. Cut two boards 12" long	Be sure to measure twice and cut once. Be sure to allow for the kerf when measuring and cutting. Be sure your work is secured to the bench before cutting
Cut out drawer bottom	2a. Use 1/8" thick hardboard 2b. Cut out one piece that is 13½"x14"	Refer to the notes on the plan for how to cut out the bottom
Assemble drawer frame	3a. Dry fit the frame to be sure your edges are square. 3b. Refer to the diagram for assembly layout.	If you are out of square ask instructor for help

vided for a circular saw is used in addition to a safety test, not only is there evidence of the student's knowledge from their safety test, but there now is documentation that the student has proven their ability to operate the tool as well.

The use of a skills card, as suggested here, allows a teacher to document three different levels of competency achievement (knowledge, probationary, qualified) as well as individual skill achievements (skills numbered down the left side). The teacher will first identify when the student has knowledge of the specified skill and date and initial the skills card, a second set of teacher initials will be given when the student is able to perform tasks under direct supervision of an instructor, and a third set when the student can perform the tasks independently on a project – the highest level of achievement expected in high school laboratories. A skills card also provides an avenue for students to self-assess, allowing for deeper growth and understanding. Further credibility can be given to skills cards by having them validated both in competency achievement (across the top) and skills categories (down the side) by a local industry advisory committee.

Once a student has demonstrated competence in operation of specific lab tools and equipment, then it is time for them to demonstrate competence through completion of a project. Again, the project setting does make it difficult to keep up with assessments of the student's growth during the project. In order to continue to provide feedback to students, there must be a matrix to measure growth. In many instances, instructors will start a project by providing students with a Job Operation Sheet (JOS) which indicates the steps or procedures to completing the project. A traditional JOS has three columns. The first column is labeled steps and indicates the basic step to completing the project. The next column is labeled procedures and contains more detailed information about completing the individual step. The third and final column is labeled safety/key points and is there to highlight any specific information a student may need to be aware of to be safe or help be more successful. The JOS provides students a detailed set of instructions for how to complete a project, allowing the instructor to clarify procedural questions from students. If students are provided a blank or partially completed JOS, then classroom discussions can provide further engagement for students prior to entering the lab to "go to work."

Though a great teaching tool, the JOS does not allow instructors the opportunity to provide feedback

Job Operation Sheet Area: Ag Mechanics Job: Construction of a Drawer			
Step	**Procedures**	**Safety and Key Points**	**Assessment**
Cut boards to length	1a. Use 1"x4" select pine boards 1b. Use a hand saw to cut boards 1c.Cut two boards 14" long 1d. Cut two boards 12" long	Be sure to measure twice and cut once. Be sure to allow for the kerf when measuring and cutting. Be sure your work is secured to the bench before cutting	
Cut out drawer bottom	2a. Use 1/8" thick hardboard 2b. Cut out one piece that is 13½"x14"	Refer to the notes on the plan for how to cut out the bottom	
Assemble drawer frame	3a. Dry fit the frame to be sure your edges are square. 3b. Refer to the diagram for assembly layout.	If you are out of square ask instructor for help	
Drill pilot/counter sink holes in boards	4a.Refer to the plan for hole location on boards 4b. Drill pilot hole into boards where screws will go. 4c. Counter sink the holes where the screw heads will sink into boards	Pilot holes ensure you will not crack or split your boards during assembly Be sure your counter sink hole is deep enough for the screw head to be flush with the surface of the wood	
Screw frame together in pilot holes	5a. Refer to diagram for screw size. 5b. Screw the screws into pilot holes	Be sure to not go to fast and split the wood.	
Nail drawer bottom to frame	6a. Refer to diagram for nail size and number of nails 6b. Starting in one corner, nail bottom to frame 6c. In opposite corner, place the next nail to bottom 6d. Nail bottom to frame in remaining corners. 6e. Evenly space remaining nails around the bottom of shelf.	Be sure to nail straight and do not spilt wood. Watch the seams of the frame so you do not place a nail in the seam.	
Sand	8a. Using sandpaper, sand project so all rough edges are smooth.	Be sure to sand with the grain not against it.	
Attach handle to front of drawer	7a. Find the center of the front board. 7b. Drill a hole for the handle in center. 7c. Using handle assembly attach handle to front of drawer.	Be careful to not scratch the handle or board	

to students on growth or evaluation of how they are progressing while working on completing the project. A simple solution to this situation is to add a fourth column to the JOS labeled assessment/evaluation. If each step of the JOS is an opportunity for the instructor to evaluate and provide feedback to students regarding their progress during the project, the JOS becomes more than a teaching tool or step by step procedure. It is now an evaluation tool to provide feedback and document student's growth throughout the project. In addition, the JOS assessment tool provides the opportunity for the instructor to provide structured guidance to students who may be struggling during the project. When students are responsible for each step of the procedure and an instructor signs off on their progress during the project, an opportunity is created to discuss student progress in a more structured setting. The instructor, in turn, is not tied to running around the lab searching for students whom may be struggling, or being tied up by one student because they need extra attention. The structured feedback the JOS assessment provides in the lab is another tool which helps the JOS become more than a step by step procedure but a guided tool for assessing growth and development of a student in multiple laboratory settings.

The value of assessment in educational settings has been justified by policy makers, administrators and teachers. In addition to the general practice of assessing to show student growth, providing students with project based assessments can guide student achievement and foster their growth more effectively. Though challenging, assessment in agricultural mechanics laboratories should be mastered to foster effective instruction, student growth measures and to assist with teacher performance evaluations. Implementing effective agriculture mechanics assessments through skills cards and Job Operation Sheets can assist in meeting ongoing assessment demands.

References

Phipps, L. J., & Osborne, E. W. (1988). *Handbook on agricultural education in public schools* (5th ed.). Danville, IL: Interstate Printers and Publishers.

Nathan Clark is an instructor in the Department of Agricultural and Resource Economics at Colorado State University.

Dr. Kellie Enns is an Assistant Professor in the Department of Agricultural and Resource Economics at Colorado State University.

Jordan Johnson is a graduate student and recent program completer in agricultural education teacher licensure at Colorado State University.

The Agricultural Education Magazine Article Guidelines

1. The best articles for ***The Agricultural Education Magazine*** are the ones that have a clear point and share practices that can be used in the "real world" of teaching agriculture.
2. Final copy should be two to four pages as shown in ***The Magazine*** (approximately 1500 words).
3. Articles should be accompanied by a recent headshot photo of the author(s).
4. Authors are encouraged to submit photos and drawings etc. appropriate for the "theme issue." Make sure the photos are of high quality and they tell the story. **Digital photos are acceptable, BUT must be 300 dpi or higher.** Please include a caption with each photo.
5. All photographs, drawings, etc., should be sent as stand-alone files (jpg, tif, etc.). **DO NOT** incorporate the photos/drawings, etc., into the Word document.
6. **Manuscripts should be sent to the Theme Editors if at all possible,** however articles may be sent directly to the Editor if that is the preference of the author(s). Theme articles get first priority in article selection for publication. General articles will be used when space is available.
7. Manuscripts are due to the Editor of ***The Magazine*** at least 60 days prior to publication. Work closely with the Theme Editor to have a timely submission.
8. If your article is published, you will receive a complimentary copy of the journal along with a letter of congratulations. Additional copies of ***The Magazine*** may be available from the Business Manager.

Improving the Integration of Multimedia in the Ag Ed Classroom

by Gaea Wimmer Hock

As a former high school agriculture teacher and current university professor working with teacher education students and beginning teachers, I recognize the educational (and entertainment) value of incorporating multimedia into the classroom. When I taught high school agriculture in Kansas, my students looked forward to the class period when they would view a Dirty Jobs© episode in connection to the learning objectives. I would incorporate multimedia to introduce a topic, provide an example, or assess students' comprehension of a specific concept.

The term multimedia can be defined in a variety of ways. For purposes of this article I will be using the term to encompass television episodes, movies, YouTube clips and other forms of video used as a teaching tool. The availability of multimedia resources has greatly improved the last few years. Online streaming provides agricultural educators many opportunities to reinforce learning with the help of these "edutainment" resources. However, teachers must not fall into the habit of showing a YouTube clip to students without first establishing the relevance of the clip to the learning objectives.

Based on personal reflection of how I utilized multimedia in my high school classroom, and continue to do so in my college classroom, I developed five steps to help teachers facilitate the integration of multimedia in an agricultural education classroom.

Step 1 – Identify Possible Multimedia Sources

Take a few minutes to search online for videos and multimedia resources that may be connected to your upcoming lessons. Pay attention to the shows you and your students are watching outside of school and look for examples related to your curriculum. You may be able to tie an agricultural concept to a program that may not be directly connected to agriculture. I remember watching a televised cooking competition in which a contestant did not know how lamb was raised and had it confused with veal production. The host corrected her mistake and educated her on how lamb is traditionally raised. This was a perfect example of the need for agricultural literacy and could be used in a wide variety of agriculture courses. Be an active viewer and ask your students to help you find pertinent multimedia to show in the classroom.

As you find multimedia sources for use in your classroom, please keep in mind the Fair Use in Education copyright laws. To adhere to copyright law, the video must be shown for non-profit educational purposes, in a classroom setting with only the students and teacher present, and be legally acquired. If you have questions or concerns related to copyright please visit with your technology director and they should be able to assist you.

Step 2 – Watch the Multimedia Clip

The second step can be done in conjunction with the first. Whether the multimedia is an entire movie, an episode, or a short clip, it is important to watch it before you show it to students. Do not fall into the habit of quickly searching for a video five minutes before class starts and viewing it for the first time with your students. As the instructor, you do not want to have any surprises. You need to make sure the multimedia resource is appropriate both in content and delivery. If you are showing a small segment of a larger multimedia source, write down the time to start and stop the clip. This is especially helpful for showing clips from YouTube or other online video sites.

Step 3 – Connect Curriculum to Video

After you have viewed the clip and found it appropriate and pertinent to the lesson, think about what concepts or examples of agriculture

The following list provides a sample of the many multimedia resources (television episodes and movies) that contain agricultural content:

- Deadliest Catch
- Dirty Jobs
- Dog Whisperer
- Dogs 101 and Cats 101
- Dogs Decoded: Nova
- DogTown
- Far & Away
- Food Tech
- Food, Inc.
- How It's Made
- How Stuff Works
- It's Me or the Dog
- Last American Cowboy
- Modern Marvels
- Planet Earth
- Super Size Me
- Swamp Loggers
- American Loggers
- Unwrapped

content are highlighted in the clip. You need to be able to validate the reason for showing multimedia in your classroom if your principal were to walk into your room during the viewing. You also want students to appreciate the reason you are asking them to watch the clip beyond the "entertainment" value.

In addition, you should decide when you will show the video. Will it be before or after teaching the concept? Do you desire for the clip to be a way to build interest and motivation to learn the content? Do you want to use the clip as a way to check their level of understanding and ability to apply the concepts?

The decision to use the multimedia example as either inductive or deductive instruction is important. A deductive approach allows the teacher to teach a new concept and then ask students to examine the concept by watching a multimedia clip related to that objective. An inductive approach would ask students to watch a multimedia clip and analyze it for potentially related concepts and examples. Either of these approaches would be appropriate, but the inductive approach asks the students to hypothesize and theorize why certain events are happening in the clip. The deductive approach is an excellent method to ask students to evaluate the multimedia clip based on previously taught criteria.

Step 4 – Prepare Students to View Multimedia

Many times teachers will say, "I want you to watch this short clip" and then after the clip has finished ask, "What did you learn?" If you have very attentive students, this strategy may work for you. For other students, teachers should ask a question or explain the purpose for viewing a clip to help provide students with motivation and encouragement to actively watch the video. As the teacher you should write guiding questions to help students focus their attention as they watch the clip. (Examples of guiding questions are provided below.) You also need to set the scene for why they are being asked to watch the clip. This will help build anticipation and focus the students on the task at hand. The viewing of a multimedia clip should be utilized and applied just like any other learning activity in the classroom. As you use this approach more, students will soon learn the importance of actively watching and assessing the multimedia they view.

Step 5 – Make the Connection Clear

Finally, after students have viewed the multimedia resource take the time to tie the concepts and content back to what they just watched. Students should be given the opportunity to answer the guiding questions (either verbally or written) and tie those observations to the learning objective(s). If you are using the multimedia clip as an assessment tool, ask students to write their reflections. If the clip is to help facilitate further discussion of the content, allow students to verbally respond to the questions. As the teacher, you must clearly communicate how the video demonstrated the objective and make any final clarifications.

Deductive Example:

Rank (Movie on Netflix about bull riding)
Start at 55:12, end at 58:30 (~ 3.5 minutes)

"*We have been discussing embryo transfer and artificial insemination. What are the terms and concepts you remember?* (Capture them on the white board)

As you watch this clip, listen closely to the reasons this bucking bull breeder gives for using ET and any concepts that we have already discussed. Record them on your paper and be prepared to discuss them after we watch the clip.

Inductive Example:

Dirty Jobs- Dairy Cow Midwife (on Netflix, Collection 4 Ep. 9)
Start ~ 4:00 end at 8:45 (almost 5 min total)

Today we are going to start talking about the dairy industry. How many of you have ever been to a dairy? (Allow students to raise their hands).

Well, Mike Rowe recently went to a dairy and we are going to tag along with him. What might we see in this dairy? (write on board)

As you watch this clip, write down the steps in the milking process. After we watch the clip we will discuss the steps and begin our unit on the dairy industry.

continued on page 17

Dr. Gaea Wimmer Hock is an Assistant Professor in Agricultural Information Science and Education, Mississippi State University. She taught high school agriculture at Centre High School, Lost Springs, KS.

Training the Agriscience Dragon

by Kellie Enns & Sophie Testerman

Welcome to Dragon Training."
"Whoa, whoa, wait, aren't you going to teach us first?"

"I believe in learning on the job!" (Arnold, DeBlois & Sanders, 2010).

Teaching students to develop great agriscience projects is often like Dragon Training: big, scary, complicated, intricate, challenging and can even seem insurmountable for students. Motivating students to think like a researcher, be inspired by their interests in agriculture and seek practical applications to the often sterile scientific method can provide the necessary progression to making it possible to train the agriscience "dragon."

"It is the wings and the tails that you really want. If it can't fly, it can't get away. A downed dragon is a dead dragon" (Arnold, DeBlois & Sanders, 2010).

Agriscience projects are often dictated as assignments for after school or SAE participation. Without the student motivation and the teacher direction, the inquiry process can be uninspiring for students and result in downed or dead projects, even before successful implementation has occurred. It is also hard for teachers to inspire students, given the vast opportunities that exist for projects. Simple refinement through student interest surveys and personal interviews will provide the first critical step to project planning. Surveys should offer broad areas of interest, and then narrow down to detailed refinement through additional questions such as what are some areas that interest you (beef cattle, poultry, vegetables, grain crops), what areas would you like to investigate (growth rate, nutrition, light requirements) and what resources and skills do you have that might help you with your project?

Follow up semi-structured interviews can help determine student resources and background information needed to read the project. For example, perhaps a student is interested in beef cattle production and would like to learn more about beef cattle nutrition. When meeting with the student the teacher can then help the student narrow down which component of the ration they would like to experiment with- the amount of roughage, the type of concentrate fed or the types of micronutrients available to the animal. It is essential the student is truly interested in the area of research and not just settling; this is the primary source of student engagement in the project and prevents the "downed" projects.

"Hiccup, I need to speak with you, too, son. You get your wish: Dragon Training. You start in the morning."

"Well, I was thinking, you know, we have a surplus of dragon fighting Vikings. But, do we have enough bread making Vikings? Or small home repair Vikings? I don't want to fight dragons!"

"Oh come on, yes you do."

"Rephrase: Dad, I can't kill dragons…. No, I am really extra sure I won't kill dragons."

"…This is serious son. When you carry this axe, you carry all of us with you. You walk like us, talk like us, think like us. No more of 'this…" (Arnold, DeBlois & Sanders, 2010).

Traditionally in our science classrooms across the nation and reiterated in our agricultural education classrooms, the scientific method has been taught as a serious of steps, beginning with an observation and question, background research, a hypothesis, performing an experiment, analyzing data and drawing a conclusion. This is, unfortunately, not typical to the scientific process. Rather, like the 5E Inquiry Model, the scientific process should be circular, allowing for students to reflect and return to a previous step at any point in the process. While this traditional technique of teaching the method is contrary to "walking like us and talking like us" as described in the quote above; it is the reflective process that will allow students to "act like scientists."

Three recommendations are suggested to enable students to apply this reflective scientific thought process. First, teach each step of the process through a structured curriculum and model this with the movie *How to Train your Dragon* (Arnold, DeBlois & Sanders, 2010). Students can identify the steps involved in the inquiry process by following the main character, Hiccup, as he makes an observation of the downed Night Fury dragon, Toothless, and begins to research the topic, preforms multiple trials to find a way for the injured dragon to fly again. Throughout the movie students call out "stop" when they see one of the steps of the scientific process occurring. The teacher should pause the movie to discuss the step taking advantage of the opportunity to discuss the flexible nature of the scientific method.

Second, the scientific process should be modeled through a class agriscience project during which students work as a team to complete each step. The third step is to give students the opportunity for individualized learning through independent, student selected projects. These projects allow students to ***live*** science and experience the process as a researcher would. The experience of engaging in research will allow students to im-

Hiccup's Scientific Method in "How to Train Your Dragon" *(Arnold, DeBlois & Sanders, 2010)*	
Make an observation	Hiccup makes the observation that Toothless does not fly away when he frees him from the trap. He makes a quick sketch of Toothless. (approx. 21 minutes into movie)
Ask a question	Hiccup verbally asks "Why don't you just fly away?" (approx. 21 minutes into movie)
Background research	Hiccup utilizes the dragon slayer's textbook in an attempt to find information on Night Fury dragons. Finding little information in the book he consults his teacher and eventually finds the key piece of information he is looking for, dragons cannot fly with an injured tail. (approx. 24 minutes into movie)
Form a hypothesis	Hiccup returns to his original sketch, applies the information he gathered during his background research and generates his hypothesis: if Toothless' tail is repaired using a prosthetic tail fin to show bilateral symmetry then Toothless will be able to fly. (approx. 34 minutes into movie)
Conduct an experiment	Hiccup conducts multiple trials to create a fin that allows Toothless to fly. This process shows students one variation of the scientific process. (approx. 35 minutes into movie)
Analyze the results	For each trial Hiccup uses a pass fail system to collect his data and takes note of potential issues in his design that may be effecting Toothless' ability to fly. After each trial Hiccup uses his analyses to determine if he needs to return to the previous step. (approx. 37 minutes into movie)
Draw conclusions	Hiccup accepts his hypothesis based on Toothless' ability to fly with the prosthetic tail fin. (approx. 45 minutes into movie)

Figure 1. The Reflective Scientific Method

prove their depth of understanding.

It is crucial that teachers facilitate this learning process. One method to accomplish this is by modeling each step for the students before they complete it in their project. Completing a class experiment at the same time can provide the opportunity for teachers to model the step the student is about to use in their project. It is likely that students have completed many "cookbook" lab experiments throughout their education. Therefore, the teacher can smooth the transition from a structured experiment to student driven experiment by allowing the students to work together to complete the class experiment and providing guidance only when necessary to ensure good research practices. Breaking the class experiment and student projects into the individual steps is useful since the process is fresh in the student's mind when they apply the step to their own project.

A final step in the process is to have students articulate their understanding of agriscience through presentation of their personal projects, either through an oral or visual presentation (or both). If this can happen within class time, it allows students to see other research further reinforce the reflective scientific process.

Inspiration and natural inquiry can be found in many places. Linking the scientific method to the movie *How to Train Your Dragon* is a natural connection to which students can relate. Allowing students to then see agriscience modeled through group research projects and live it through the personal experience of individual projects enables them to develop their ability to conduct research in the manner of professionals in the agriscience industry. In the words of Hiccup's father, "it turns out all we needed was a little more of this," (gesturing to Hiccup) a little more Hiccup, to teach students the scientific method in a unique way and further their understanding of research in agriculture.

Reference

Arnold, B (Producer), DeBlois, D. (Director) & Sanders, C. (Director). (2010) How to train your dragon [Motion picture]. USA: DreamWorks Studio.

Dr. Kellie Enns is an Assistant Professor in the Department of Agricultural and Resource Economics at Colorado State University.

Sophie Testerman is a graduate student in Agricultural Education in the College of Agricultural Sciences at Colorado State University

Living to Serve: National FFA Organization and Service-Learning

by Michael Slavkin & Stefonie Sebastian

Learning to Do, Doing to Learn, Earning to Live, Living to Serve." The last line of the National FFA Organization's motto sets the tone for the model of service-learning that has become a hallmark for positive difference that FFA members make every day in their schools, communities and the world around them. The current article explores the impact of service-learning as a learning strategy that helps our students work alongside agricultural education teachers, community partners and industry professionals in meeting the needs of diverse communities.

Introduction to Service-Learning

As opposed to community service, service-learning connects agricultural curriculum with authentic community needs. As a formal definition, service-learning is a method of instruction that emphasizes both the service and the learning goals in such a way that both occur and are enriched by each other (Allen, 2003). Many people think that community service and service-learning are one and the same. While service-learning involves community service, they are two different concepts. Community service is defined as a form of volunteerism. It is done within a defined community, which could be a classroom, town, city, etc. It has no intentional tie to learning; the emphasis is strictly on the service.

Service-learning combines service to the community with in-depth student learning in a way that benefits youth, schools and communities. Service-learning extends volunteerism because it increases youths' involvement in academic and civic life (Allen, 2003). One unique facet of service-learning is the ability for students, teachers, parents and citizens to be involved as equal participants in resolving the pressing needs faced by a community. While youth and advisors are active members engaged in exploring the problems that a citizenry faces, a critical component to effective service-learning requires that citizens have an active voice in sharing their concerns, guiding the learning process, and being involved in all phases of project completion (for further information visit www.FFA.org/livingtoserve).

National FFA Organization and Service-Learning

The USDA Rural Youth Development (RYD) Program was the catalyst to move FFA from a model of community service to a much more rich and meaningful model of service-learning beginning in 2007. Through the program, FFA was able to create resources for agricultural teachers and students on service-learning and civic engagement. Through the youth governance model of the FFA delegate process, youth representatives from across the country stated that although the FFA model of traditional service was beneficial to the community, the impacts to the participants, beneficiaries and the community were not as deep or meaningful. Thus, the FFA youth delegates put forth a request of the National FFA Board of Directors that put into place the move from a model of service to a model of service-learning. The official acceptance of the programmatic shift was announced during the 2007 National FFA Convention.

In an effort to increase service-learning opportunities for agriculture students the National FFA Organization currently offers funds through three programs: the Rural Youth Development Grant Program, FFA: Food For All Grant Program and the Living to Serve: Environmental Grant Program. These service-learning programs offer FFA members and advisors the opportunity to become active partners in meeting community needs. Students develop and utilize critical thinking skills and higher order thinking skills while working through the following steps of their service-learning project:

1. Identify a community need and learning goals
2. Identify community partners
3. Develop and implement solutions in partnership with community
4. Evaluate project (service and learning goals)

Over the past six years, data about FFA chapters' service-learning projects have been gathered. The narrative that follows includes information that can help any agriculture educator to construct powerful service-learning experiences utilizing the steps above.

Identifying a Community Need and Learning Goals

To ensure a service-learning project has a strong foundation, the first step is very important. Identifying a community need creates learning goals for the class. True service-learning happens when the project meets an authentic community need and service is integrated into the classroom curriculum and aligned with

Walton FFA members (NY) designed a more effective composter.

academic standards. Service-learning programs enhance learning through real-life, experiential activities. Academics come alive and knowledge is applied through interaction, research, critical thinking, literature, problem solving, discussion and planning for action. Students should be expected to be active in the development and planning of programs, as well as program evaluation.

As a part of the Rural Youth Development Program, Walton FFA in New York, created a survey that they distributed to students, the school board and members of a local advisory board to help them identify a need. Starting a recycling program, access to fresh produce and quality garden compost were found to be the main needs. From the identification of the needs Mrs. Miner-James, FFA advisor, helped students develop a curriculum for educating their community about recycling, waste reduction, composting, vermiculture and resource recovery. An innovative concept of the program, to ensure academic relevance, was the creation of a scientifically-designed research project to compare homemade and commercial composting techniques. During the first year of the project, students focused on recycling and composting, but methods were largely trial and error. In the second year with the use of the study, FFA members were able to qualify which compost system was more effective, finding that their own design was more effective than some of the market-brand composters. Compost generated from the school recycling program was used as fertilizer in the local community garden and the school district benefitted from the reduced waste hauling costs.

Identifying Community Partners

The second step to a service-learning project is identifying community partners. Students should engage in the development of partnerships to share responsibility of meeting the need with teachers, parents and community members. These relationships present opportunities to interact with people of diverse backgrounds and settings. Service-learning experiences provide students and community partners the opportunity to learn about each other, resulting in mutual respect, understanding and appreciation. Mapping community assets, inviting speakers from local organizations, and holding discussions with students are effective ways to identify partners. Exploring organizations that may already provide a similar service is also important. It is also vital to think outside of agriculture when engaging community members in the project.

As part of the FFA: Food For All Program, the South Rowan FFA chapter in North Carolina wanted to provide fresh produce to those in need. The chapter identified two partners in their community who were already providing food to low income community members and grew vegetables to supplement donations. The chapter partnered with a local food pantry and the local Meals on Wheels program. An unplanned need that arose was homebound seniors not knowing how to easily prepare fresh vegetables. The chapter partnered with another community member to develop microwave recipes that they could distribute to the senior citizens.

A benefit to students working with partners as part of their service-learning projects was that it opened them up to facets of the community they had not previously explored. Students were more adept at seeing their biases and working beyond them to ensure project success. One South Rowan FFA member said the highlight of the project was “getting to work with people that I usually wouldn't think of working with and learning more about them.” An FFA member from a funded Rural Youth Development chapter in West Virginia shared, “the main thing I have to think about as a community member is to never be surprised by what someone else can bring to the community. Every person is going to have a different story to tell and every one of them is going to be respected for whatever they are and wherever they come from.” Additional benefits of working with community partners are their new view of youth as change makers and increased support for agricultural education programs.

Develop and Implement Solutions in Partnership with Community

The third step in the service-learning process is developing and implementing solutions with partners to the community's need. Engaging students in the process to develop and implement project plans with partners provides more ownership and greater learning opportunities. Active youth voice improves students' perceptions of their ability to impact their community and the relevance of these projects toward community growth. Further, it helps them to recognize the power of the curriculum in developing active senses of citizenry and civic mindedness. Students involved in the grant programs shared that they had impact, as well as an improved understanding of the influence that they hold with members of their schools and communities. While members and advisors shared that engagement with the community is a natural extension of FFA culture, many state that this outcome was heightened by involvement in service-learning projects.

The State College Little Lions (Penn.) FFA chapter's land stewardship project, as part of the Living to Serve: Environmental Grant Program, was created with the intention of developing solutions to negative impacts of manure and farm wastes on the environment. Members partnered with a Young Farmer Chapter and local governmental agencies to develop animal operator's "Manure Management Plans" that meet local and state regulations. Their community has farms that vary greatly in size as well as animal species; from 100 acres to more than 800 acres; raising dairy, goats, horses, sheep and swine specific operations. To add to the farm diversity, these farms are situated on varying soil types and in several different watersheds. All of these factors presented many challenges as well as many opportunities to better educate and provide leadership in assisting and connecting with the local animal agriculture and governmental service industries. The project provided a unique connection between many generations and groups in the community for FFA members to have a "hands-on" experience.

As part of the FFA: Food For All Program, Salmon FFA (Idaho) worked with a cross-section of community organizations that drafted a Salmon Valley Local Food Action Plan. The plan identified an asset of hundreds of local fruit trees, but a challenge of fruit going to waste. A specific action item included starting a gleaning program, as well as providing education to community members about food preservation and cooking. Salmon FFA partnered with the groups to implement the action items associated with increasing food security and self-reliance in the county. The chapter took the lead on identifying the orchards available, mapped them with GPS technology, performed orchard maintenance, assisted in the harvest, supported the marketing of the product and aided in the educational classes that were offered as part of the project.

Kimball FFA in South Dakota worked with numerous community partners to complete a multi-year project through the Living to Serve: Environmental Grant Program. The National Resource Conservation Services, a Native Prairie Garden Committee, and the local National Guard Unit partnered with the chapter to build a native prairie garden in their community. The project was developed to assist in showing and preserving native South Dakota plants, as a legacy to the life of pioneers and settlers, to serve as a respite for travelers and as an outdoor classroom for students, natural resource people and history buffs.

Evaluate Project (Service and Learning Goals)

The final step to any service-learning project is evaluating the service and learning goals. Throughout the service experience, youth and adults should analyze the process (what was done) and the impact (results) of the service. Effective evaluation is essential for assessing the outcomes of service-learning programs, for making decisions about improving the program, and for strengthening support for the program in the chapter, district and community. The best evaluation efforts are woven into the fabric of the program from its inception. Initial questions focus on information that is needed and desired, identification of those who will use the evaluation information, and determination of the appropriate methods for collection of the needed information. In order for students to learn from their service experience, teachers must provide structured opportunities for students to reflect critically on the service experience. As the problem-solving process becomes an integral part of programs, students will be able to demonstrate stronger learning outcomes and powerful impacts in their communities. The majority of FFA advisors who participated in the grant programs stated that service-learning projects were woven into their agriculture curriculum. They used the service to drive learning, therefore providing an authentic opportunity to "learn by doing."

The goal of service-learning is to help students become responsible citizens, while simultaneously learning curriculum. This method of teaching can be used in agriculture classrooms as an alternative to traditional methods or it can be incorporated as a part

of other experiential methods. Information gathered from the National FFA Organization's three service-learning grant programs shows that students working in partnership with their teacher and the community to identify and solve community issues create numerous educational opportunities.

References

Allen, R. (2003). The democratic aims of service-learning. *Educational Leadership, 60*(6), 51-54.

Rama, D. V., (Ed.) (1998). *Service-learning.* American Association for Higher Education, Washington, D.C. http://www.service-learning.org/article/archive/35

Wade, R.C. (1997). *Community service-learning: A guide to including service in the public chapter curriculum.* Albany, NY: State University of New York Press.

Dr. Michael Slavkin is the Director of Teacher Education at Manchester University.

Stefonie Sebastian is an Education Specialist with the National FFA Organization.

*Differentiation in Action: ...****(continued from page 6)***

References

Bloom, B. S. (1956). *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain.* New York: David McKay Co Inc.

Hall, T., Strangman, N. & Meyer, A., (2009). *Differentiated instruction and implications for UDL implementation.* Wakefield, MA: National Center of Accessing the General Curriculum. Retrieved June 25, 2013 from http://aim.cast.org/learn/historyarchive/backgroundpapers/differentiate-dinstruction

National Training Laboratories Institute for Applied Behavioral Sciences (2005). *The learning triangle: Retention rates from different ways of learning.* Online source: ntl.org

*Improving the Integration of Multimedia ...****(continued from page 11)***

Where to start?

Currently, a number of online resources are available to locate multimedia examples at little or no cost. Websites such as Netflix, Hulu Plus, YouTube, Expert Village, and Teacher Tube provide a variety of videos and video clips. United Streaming and NBC Learn both require a subscription, but check with your technology director or librarian to see if your school district already has an account. There are also curriculum and educational resource companies (such as CEV) that are moving more of their traditional VHS and DVD content to online availability. If your school district restricts website access, you can always purchase DVDs of television shows and movies which contain agriculturally related content (see examples below and on page 10).

Conclusion

Today's student enjoys a classroom where they are entertained and allowed to learn with the use of multimedia resources. Teachers should embrace the technology they have and work to make the "edutainment" resources work to enhance their curriculum. I hope the steps outlined above will allow more teachers to put into practice effective teaching strategies while utilizing multimedia resources.

Many television networks also offer various programs that feature agricultural topics:

- RFDTV Shows
- Animal Planet
- Discovery
- Travel
- Food Network
- Outdoor Life
- HGTV
- PBS

Infusing Globalization into the Agriculture Classroom

by Kristin Kovar

In a recent conversation with an agriculture teacher friend of mine, I asked him how he incorporated global concepts into his high school classroom. As someone who has traveled abroad, I thought he might mention using his personal experiences in global settings. The story I heard in response to my question was very interesting and a little surprising. When discussing fruit varieties in his horticulture class, the star fruit and the kumquat, which are considered international agricultural products, were mentioned to the class. Since the students had never heard of these fruits before, the teacher went to the local grocery store and purchased these items to bring to class the next day. Not only were the students unaware that these fruits even existed, but were fearful to even try them. Leading by example, this teacher was able to show the students the dreaded star fruit was not dangerous and that learning about new and different things can be fun. It was after this experience that this particular teacher began to infuse globalization into his agriculture classroom.

What do you think of when you hear the word *globalization*? The term globalization can be perceived in a variety of contexts, including concepts from international trade and economic development to culture and the environment. When bringing this idea to the high school classroom, globalization can be defined as a global consciousness. This global consciousness is an awareness of people, places, cultures and beliefs that are not their own (Mansilla & Gardner, 2007). Increasing the global consciousness of high school students can lead to many educational outcomes such as an increased sensitivity to differences in cultures, beliefs and practices, an increased understanding of the global supply chain, a sense of social and environmental responsibility and expanded career awareness.

Many high school students are limited in their exposure to other cultures. In order to be successful in an ever-changing world, students need to be able to think globally and consider culturally different perspectives (Crawford & Kirby, 2008). Creating opportunities for students to think outside of their own personal perspective is important. By infusing globalization into the classroom, we are able to offer many beneficial returns to the students. With a growing interdependence of the world economy and the globalization of agricultural products, increasing global awareness in students encourages the development of young agricultural leaders.

What Does this Look Like?

As each classroom is unique, so must be the approach to incorporating globalization into the classroom. Only you can decide what is right for your class. It could be a single activity in a lesson, one lesson, or an entire unit discussing global concepts. Another suggestion is the *infusion* of globalization into the agriculture classroom. This method is reliant on the teacher to supply not only the model of global consciousness, but their personal and professional experiences in the global environment. The teacher is the model and is responsible for bringing global concepts into the classroom. The following are practical applications for increasing worldly perspectives of students in the classroom:

International Agricultural Issues

Presenting agricultural issues from an international perspective can create a direct link from "global" to student. Examples of issues that could be presented to students include disputes in the global sugar trade, the environmental impact of the banana industry, and fair-trade coffee and cocoa. Students can connect to something tangible in their everyday lives, such as bananas or sugar, and from exploring these concerns see the link between themselves and these issues. A great method for discussing international agricultural issues is through case studies. In addition, including student reflection based on case studies offers valuable outcomes, such as cognition and problem solving.

International Animal Agriculture

As animals make up a large portion of what we produce and eat in the United States, this is also true in most countries, as meat provides a valuable protein source. It is important to expose students to not only what other people eat, but how they obtain their food and how animals are treated around the world. One lesson may focus on sustenance whaling of aboriginal peoples, while another may discuss the sacred cow of the Hindu people. While these topics are extreme in addressing the differences of cultures, others may show similarities.

Country Spotlights

An engaging way to expose students to multiple countries and cul-

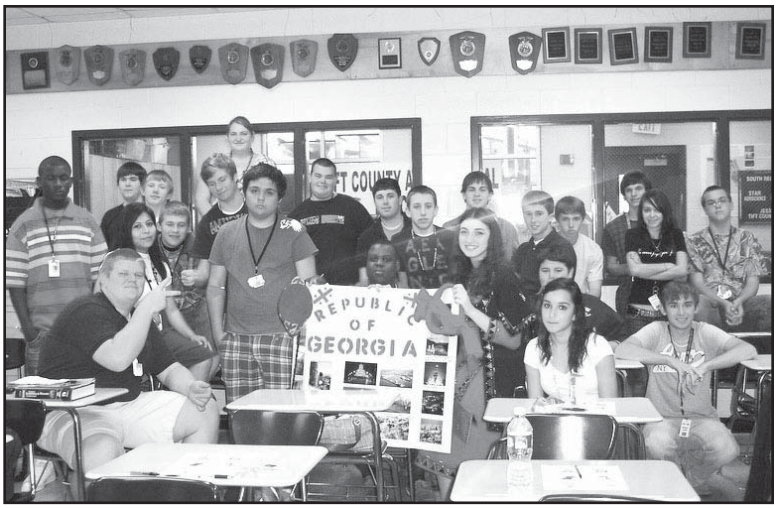
tures is by assigning each student their own to investigate. In order to canvas the entire globe, it is important to make sure the options of counties are from all continents. The options should be unique in their agriculture, customs, and values. Examples of countries might include Ghana, Belarus, Mongolia, Iran, Ecuador, and Iceland. This project allows students to not only research specifics about a country, such as their agricultural products, but it also allows them to become familiar with a different way of life. Students can then present what they have learned to the class in a variety of forms.

Agri-"culture"

The idea of Agri-"culture" is rooted in how different cultures obtain and provide food for families in a community. The purpose of this activity is to expose students to the multitude of foods and diets from around the world. In the book *Hungry Planet: What the World Eats*, families from around the world are showcased through a photographic study revealing what the entire family eats in one week (Menzel & D'Aluisio, 2007). Students could utilize this information by comparing and contrasting not only the weekly food consumption of families from two different countries, but the agricultural products most commonly seen in those countries. Comparing a developed country with a developing country adds an additional element to the activity. This topic also lends itself to the incorporation of international dishes. We all know the power of food when attempting to gain the attention of students.

Guest Speakers with Global Experience

One of the agriculture teacher's greatest strength is resourcefulness. It is the ability to see something and find a way to use it for the betterment of their students. This resourcefulness can also be utilized with the people you meet. There may be a foreign exchange student in the school that would be willing to talk about their country and culture. A fellow teacher or parent may have experience abroad. You may personally have a global experience that you are willing to share with your students. Showing students that global experience is commonplace allows students to see the possibility of available opportunities in their future.



A presentation given to students in the Agricultural & Environmental Sciences Career Academy in Tifton, Georgia by an exchange student from the Republic of Georgia. The presentation of her country, given in her native attire, included a language exercise. Photo provided by Lynne Cook, Agriculture teacher at Tift County High School, Tifton, Georgia.

These activities could easily be utilized in the agriculture classroom. In addition, here are some general tips for increasing global awareness in the classroom:

- Make connections between local and global issues so students begin to understand the interconnections of the world.
- Create opportunities for cultural interaction.
- Incorporate various learning styles and teaching methods.
- Explain the relevance to their day-to-day life.
- Help students understand the world and their place in it.
- Model tolerance and acceptance of others.
- Focus on impact rather than testing their knowledge.
- Activities should be participatory and experiential.

Think outside the box…

There are also several opportunities to indirectly expose students to international people and places. An organization such as Heifer International is a great way to illustrate agricultural practices in various coun-

continued on page 24

Kristin Kovar is a Doctoral Candidate in the Department of Agricultural Education and Leadership at the University of Missouri.

Globalizing School-Based Agricultural Education: Are We Preparing Students to Help Serve the World?

by Daniel D. Foster & R. Kirby Barrick

Why are we here? As agricultural education professionals, we "show up" every day with a singular goal: student success. Of course, student success can be different from professional to professional, but a key aspect is that we want to develop college and career-ready students to be prepared to tackle the pressing issues facing society in the world, specifically: how are we going to feed and clothe more people with fewer resources. The world agriculture system is becoming increasingly integrated and interconnected. Colleges of agriculture have been challenged to transform their role in higher education and their endeavors to provide a capable workforce for the ever-changing global food and agricultural system. Global-ready graduates have an understanding of cultural diversity as well as the social and communication skills to effectively work with diverse individuals in a variety of environments. Researchers point to the importance of understanding globalization and an appreciation for the interconnectedness among society, environment, politics, history and economics. This combination of attitudes, knowledge and skills appears to be the recipe for success in a global context. With the changing nature of agribusiness and the ever expanding technological revolution, we cannot expect a future of less integration or more isolationism. So, the question posed is: ***As agricultural education professionals, are we effectively utilizing our programs to develop global ready graduates?***

In this article, we will discuss the role of teacher education programs in developing globally competent agricultural educators, examine opportunities for professional organizations to provide in-service opportunities for school-based agricultural educators, and investigate opportunities for local programs to "globalize" their school-based agricultural education programs in all three components: FFA, SAE, and Classroom Instruction. Before we address those objectives, we must clearly identify why we need to pursue globalization in our agricultural education programs:

Why as teachers? Two reasons really, both of which are extremely interconnected. One: building global competency in ourselves as teachers is critical to having the capacity to build global competency in our students. Two: to develop empathy and multicultural competency in our teaching. Every student walking through our classroom doors should have equal opportunity to succeed. Even a short-term global experience by preservice teachers can impact the context and content of their teaching and their multicultural competency or empathy. The United States is more diverse ethnically and racially than at any time in history, a trend that no one can say will reverse. International education experiences have long been regarded as one means to prepare individuals to participate in a world with increased ethnic and cultural diversity. Walton (2002) reported that an enhanced international perspective, or "global-mindedness," has a direct effect on a teacher's classroom communication skills and, by inference, student learning.

Why for our students? To develop their global citizenship. Preparing future leaders to be positive agents of change on the global stage continues to grow in importance as global systems become more intertwined and the world population increases, even as natural resources become more limited. In this challenging environment, agricultural education,

Seoul National University, University of Florida, and Penn State University students after teaching at Suwon School for Agri-sciences.

particularly school-based programs will persistently play a vital role in the success and prosperity of humankind. Such programs need to go beyond viewing agriculture only as a technical field, because agricultural production, processing and distribution are in fact deeply woven into the cultural fabric of all aspects of daily life, including diets, clothing, work and recreation options, immigration policies, and more.

Why us? Why now? To help solve fundamental real world issues, specifically world hunger and equality in global food economy. School-based agricultural education programming is uniquely positioned to help empower youth voice and student engagement in tackling a real-world issue involving the global food economy through instruction in the applied STEM content of agriscience and natural resources education. School-based agricultural education has an incredible opportunity to contribute to achieving social justice. To helping develop the kind of world that each and every one of us wants for our children and children's children. Perhaps no other educational programming has more opportunity to engage in these critical issues with students than ours, but are we prepared as instructors to assist our students in reaching the point of development needed for success?

Role of Teacher Education Programs

Internationalizing teacher education is most effectively done when global awareness and developing international understanding and perspectives are built into the teacher education preparation program. True internationalization is not as easy as creating a new major or inserting readings or assignments into existing courses. True internationalization requires new pedagogies, which could include experiential, service and collaborative learning. Teacher education programs need to provide relevant context for pre-service students. Thus, to cultivate global competencies in teacher candidates, teacher preparation programs are tasked with the challenge of organizing and offering such learning opportunities. International experiences are valuable learning opportunities that universities need to continue to develop in response to the demands of the workforce, however, the National Research Council (2009) reports that the most beneficial international global experience being those experiences highly related to the career goals of the participating students.

Recently, the authors partnered with their institutions and Seoul National University to provide a contextually relevant short-term study abroad course in school-based agricultural education. The exchange was successful and has been followed by continued collaboration because: 1) Korea and the U.S. are among the few countries in the world that both teach agricultural education in the secondary schools and also prepare and certify teachers at the university level; and 2) Korean schools welcome the possibility of university students from both countries collaborating on developing and teaching micro-lessons in a secondary school agricultural education program. While early field experiences and "micro-teachings" are common in teacher preparation programs in the U.S., this was a new experience for the Korean teacher candidates. In addition, Korea is a nontraditional country for agriculture study abroad programs; however, a partnership with Korea is particularly valuable because it introduces agricultural education students to culturally specific food products (i.e., rice, fish, kimchee). These attributes contribute significantly to the value of the study tour, by giving students from both countries the experience of working together, and in the process learning about each other's culture and agriculture.

Korea was an exceptional country for this program and enabled U.S. students and teachers to stretch their perspective about the world, its agriculture, and the multiple challenges others face. Korea retains deep cultural traditions that gave U.S. participants a rare opportunity to see West meeting East and an ancient culture interwoven with contemporary values and opportunities. We look forward to continuing to develop the relationships with South Korea and our U.S. based institutions. We are planning on visiting again in 2014 with expanded opportunities for engagement with students.

An interesting fact in consideration of our agriscience educator supply situation in the U.S., in Korea on an annual basis nearly 700 individuals will be certified to teach agriculture with only an average of 20 openings a year. Perhaps the opportunity for importing human resources could exist in the future to address our glaring shortage of professional agricultural educators in the United States.

Opportunities for Professional Organizations

While we have spoken of the need in pre-service education and the opportunity to develop candidates entering their classrooms for the first time, what about those teachers in the field who have not had the professional growth opportunity of engaging in international work? Nothing will make the lesson come home more solidly in the local classroom, than when teachers can share their

own experiences traveling and their firsthand accounts of global agriculture at work. There are several factors at work here. We know that we "lose" several teachers between their third and fifth years of instruction. Perhaps, it is because they do not feel valued or do not see opportunity for upward mobility/growth in their current position. We must value and promote the unique skill set that our experienced agriscience educators possess! They have the capacity and abilities to be highly sought after in many international development efforts. Professional organizations should provide contextually relevant in-service experiences that include global perspectives.

In addition, how are our professional organizations developing relationships and networks with agricultural teacher associations from other nations? Wouldn't it be cool if there were an annual exchange between the Korea Agricultural Education Association (KAEA) and the National Association of Agricultural Educators (NAAE)? It is interesting to note that there is a National Association of Agricultural Educators that serves New Zealand and Australia. The website is: http://www.naae.asn.au. Could there be unique synergistic opportunities for educators in the same discipline from different continents?

When we look to our student's professional organization, The National FFA, we can commend them for doing a good job of rebranding/reinventing the FFA Global Programs including seminar programs for college FFA members, state officers, and the proficiency travel seminar to Costa Rica. How can we grow and expand that? What about hosting a student exchange between FFA and FFK (Future Farmers of Korea)? What about serving as a global clearinghouse for exchanges between local FFA Chapters and members of student driven agriculturally related organizations across the globe? How can we recognize global engagement on the national level as part of the FFA Award System? What about conducting an International Agriculture Fair similar to Agriscience Fair at the National Convention? Perhaps in addition to the Hall of States, we have agricultural education around the globe where those individuals and organizations that are engaged in meaningful youth empowerment in agriculture in developing nations could share their good deeds and opportunities for local chapters to participate, engage, and make a difference. The opportunity exists for investment in infrastructure, specifically human resources, to facilitate the connections between our outstanding chapters and others working across the globe.

Application for Local Teachers

We know that school-based agricultural educators are influential to future generations of agriculturists. Global competence is the knowledge, skills, and dispositions needed to function successfully in the globalized world. More specifically, researchers report that global competency includes the ability to speak, understand, and think in a foreign language, knowledge of the global system and world history, geography, and other global issues such as health and economics, and knowledge of other cultures. How are we using all aspects of our school-based agricultural education programming to accomplish this? Below, you will see one idea for each component of the total agricultural education program shared. It will be followed by a listing of other potential ideas that could be built upon. No doubt great conversations could happen in the Global Agriculture Community of Practice on NAAE.

Classroom. Wouldn't be cool if....You built a unit of instruction (from materials found on NAAE CoP in Global Agriculture) on Food Security in the World. As part of the unit, you connected with the organization My Community, Our Earth (http://www.aag.org/gce) to utilize technology to connect students from across the world to your classroom [all you need is Internet and Skype!] and have conversations about issues facing them. As a final assessment to the unit, you have students complete the World Food Prize Essay in a cross-curricular assignment with the English department with students being selected to advance as the school's representative to participate in the World Food Prize Youth Program. (http://www.worldfoodprize.org/en/youth_programs/). Other ideas to consider::

- Compare/contrast agricultural commodities across national boundaries;
- Evaluate the effect of free trade agreements;
- Identify factors that cause other nations to refuse GMOs;
- Investigate import/export data and policies;
- Share curriculum and lessons on NAAE CoP in the Global Community; and
- Engage in a cross-curricular program with your language department where students participate in short-term language immersion experience to learn about Spanish in Agriculture (for more information, contact: Dr. Melanie Miller-Foster; (mjm727@psu.edu)

FFA. Wouldn't be cool if....your chapter identified a need in a developing country and contacted

organizations involved in working on the development projects asking how they could assist. The experience could culminate with potentially sending the students as community ambassadors to the developing country in need for an international service learning experience. Other ideas to consider:

- Host FFA chapter student & program exchanges within U.S. to investigate differences in agriculture and schooling;
- Recognize global engagement in local FFA award system
- Conduct an international agriculture fair (like agriscience) for your school highlighting education and agriculture systems from around the globe;
- Sponsor short-term international study programs for teachers and their students; and
- Connect with other civically minded community organizations and see how they are engaging globally.

SAE Wouldn't be cool if... a student as part of his/her home and community development SAE analyzed different agricultural development projects to find one that spoke to the hearts and minds of the community in which they live. Then, contact an organization on the ground and conduct a public awareness campaign throughout the community with school and community civic organizations raising funds with a specific goal to contribute to the community in the developing nation that was in need. Other ideas to consider:

- Include international market decision-making in skill development;
- Have a student organize an immersion experience for his/her SAE;
- Have a student arrange community events focused on hunger and food security; and
- Investigate micro-financing for agrarian operations across the world through websites like kiva.org.

These are only some ideas to consider and make your own. *A Strategy for Enhancing Global Engagement in Agricultural Education* developed by The National Council for Agricultural Education and found online in the Global Agriculture Community on NAAE CoP has a wonderful additional matrix of ideas for total program implementation.

Conclusion

As our article suggests, agricultural education around the world needs to incorporate a global perspective reflected in teacher education, curricula, classroom activities and more to ensure a prosperous future. The world needs school-based agricultural education to be at its best; to be in a position to empower youth voices in the dynamic agriculture, food and natural resources systems. We would like to applaud the National Council for Agricultural Education, who functioned as a cross-organization task force in developing in 2011 *A Strategy for Enhancing Global Engagement in Agricultural Education*. We hope that the strategic partners of U.S. school-based agricultural education can step forward to help fund more global outreach opportunities for agricultural educators and their students; however, we know the best way to move forward is from action at home, on the local level, in your program. The call has been issued. Ideas have been shared. Now, we encourage you to continue this conversation in the NAAE online community of practice for Global Agriculture at: http://communities.naae.org/community/instruction/global-agriculture. Post your ideas. Ask your questions. Create the opportunities you wish to engage in as a professional and for your students. If you do not articulate your vision for what can be, how can you be disappointed in what does not happen? Today is indeed the day that together we can make a difference.

References

Cano, J. & Martin, R. (2010). Preparing Teachers for Diverse Audiences. In R. M. Torres, T. Kitchel, & A. L. Ball (Eds.), *Preparing and advancing teachers in agricultural education* (pp. 257-267) Columbus, OH: The Ohio State University.

Food and Agriculture Organization of the United Nations. (2010). *Price volatility in agricultural markets*. Policy Briefs, Economic and Social Development Department.

Gardner, H. (2004). How education changes: Considerations of history, science, and values. In M. M. Suarez-Orozco & D. B. Qin-Hillard (Eds.), *Globalization: Culture and education in the new millennium* (pp. 235-258). Berkeley: University of California Press.

Green, M. & Olson, C. (2008). *Internationalizing the campus: a user's guide*. Washington, DC: American Council on Education.

Hunter, B., White, G. & Godbey, G. (2006). "What Does it Mean to Be Globally Competent?" *Journal of Studies in International Education, 10*(3), 267-285.

Koziol, S., Greenberg, J., Schweighofer, A., & Christensen, L. (2011). *The Internationalization of Teacher Education: The GATE Fellows Program as a Foundation for Systemic Change.* Paper presented at the Hawaii International Conference on Education. Honolulu, Hawaii

Park, T. & Rudd, R. (2005). A description of the characteristics attributed to students' decisions to teach agriscience. *Journal of Agricultural Education, 46*(3), 82-94. DOI: 10.5032/jae.2005.03082

Pence, H. M., & MacGilivray, I. K. (2006). The impact of an international field experience on preservice teachers. *Teaching and Teacher Education, 24*, 14 – 25.

Reimers, F. (2009). Educating for global competency. In J. E. Cohen & M. B. Malin (Eds.), *International perspective on the goals of universal basic and secondary education* (pp. 183-202). New York, NY: Routledge.

The National Council for Agricultural Education. (2011). *A strategy for enhancing global engagement in agricultural education*. Retreived from: https://www.ffa.org/thecouncil/Documents/Ag_Ed_Global_Engagement_Strategy.pdf

Williard-Holt, C. (2001). The Impact of a short-term international experience for preservice teachers. *Teaching and Teacher Education, 17*, 505-517.

Zhao, Y. (2009). *Catching up or leading the way: American education in the age of globalization*. Alexandria, VA: ASCD.

Zorn, C. R. (1996). The long-term impact on nursing students of participating in international education. *Journal of Professional Nursing, 12*(2), 106-110.

Dr. Daniel D. Foster is an Assistant Professor of Agricultural and Extension Education at the Pennsylvania State University.

Dr. R. Kirby Barrick is a Profesor in the Deaprtment of Agricultural Education and Communication at the University of Florida.

Infusing Globalization ... ***(continued from page 19)***

tries in conjunction with giving to a valuable cause. An additional opportunity for conversing with people from a variety of countries is though a website such as Postcrossing.com, which allows people to send and receive postcards from all over the world. Finally, an excellent resource for in-depth issues, teaching tools, globalization curriculum, and videos for classroom teachers is the website, globalization101.org.

Final Thoughts…

The ultimate goal of infusing globalization into the agriculture classroom is that students learn to respect, value and celebrate other people and other cultures. The experiences they have in the high school classroom can set them up to see and value opportunities of global interaction, allowing them to consider a study abroad or even an international career. If students are able to gain a positive outlook on the differences that make other cultures so unique, ultimately it only expands the horizon that is their future.

References

Crawford, E. O., & Kirby, M. M. (2008). Fostering students' global awareness: Technology applications in social studies teaching and learning. *Journal of Curriculum and Instruction, 2*(1), 56-73.

Mansilla, V. B., & Gardner, H. (2007). From teaching globalization to nurturing global consciousness. In M. M. Suarez-Orozco (Ed.), *Learning in the global era: International perspectives on globalization and education* (pp. 47-66). Los Angeles, CA: University of California Press.

Menzel, P., & D'Aluisio, F. (2007). *Hungry planet: What the world eats*. Napa, CA: Material World Books.

AgCN: Engaging Agricultural Education Students for a Lifetime

by Nina Crutchfield

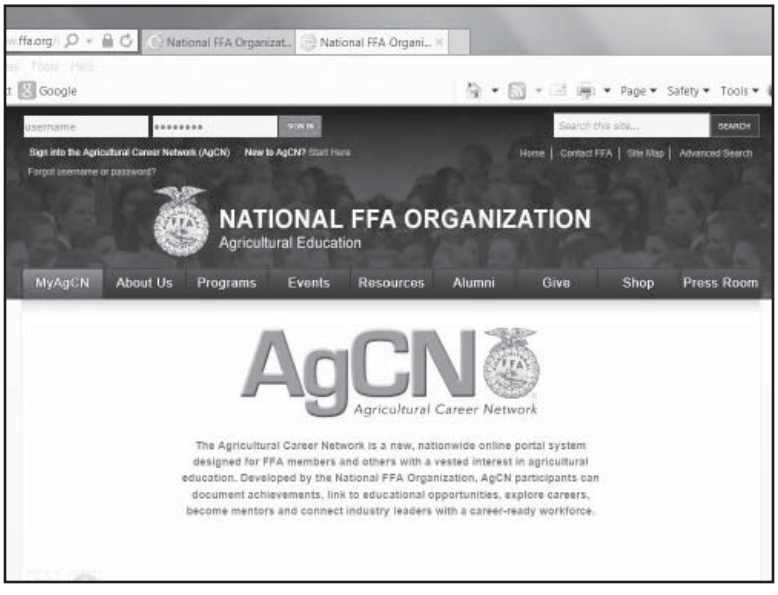
FFA exists to make a difference in the lives of students. The national organization, its state associations and local chapters have done an amazing job fulfilling the first two tenets of FFA's mission to develop premier leadership and personal growth in students. However, the third precept, career success, receives less impact since engagement with our youth often ends at graduation. This is why the National FFA Organization has designed the Agricultural Career Network (AgCN). It is FFA's major tool to engage students and members across all life stages, from the first time they enter an agricultural education classroom and throughout their careers. Ongoing efforts to build and deliver AgCN is a commitment to strengthening student achievement, leveraging FFA's educational programming and enhancing the value of FFA experiences for students. AgCN was built for current secondary students and collegians, as well as alumni and supporters already engaged in their careers.

Secondary Agricultural Education Students

AgCN was built for students. Once they receive an initial invitation to AgCN from their FFA advisors, the system is available to them in the classroom, on their smartphones and tablets, and for as long as they wish to engage with FFA. They can log in to create their profiles (addresses must be current to receive their copy of the *FFA New Horizons* magazine), track their accomplishments in school, FFA and other activities, apply for scholarships and SAE grants, build resumes, locate internships and eventually apply for jobs.

AgCN is built around the idea of *portfolios*. Students enter information about their activities and accomplishments related to classroom instruction (certifications, proficiencies obtained, STEM results, LifeKnowlege assessments, and CASE records), leadership development (all FFA and non-FFA activities, degrees earned, awards and recognitions received and events attended), and experiential learning (SAE accomplishments, internships, job shadowing experiences, service projects, community service events, global experiences). Mesh all this information with a robust electronic record keeping system and the student has a wealth of information with which to build senior graduation portfolios and future resumes.

The latest feature to be added, developed and branded for FFA is the Discover/Inspire Ag Careers component of CareerCruising.com. All agricultural education students with profiles in AgCN can move seamlessly through the portfolios into exploring the agriculture sector for potential careers, postsecondary training and locating career mentors in agriculture companies. Notice the focus is on *agriculture*. There is no other career exploration website or software that exists with a comparable depth of concentration on the industry of agriculture. The system allows students to take a career matchmaker assessment to identify careers that align with their interests and skills, helping them focus their explorations. Once they've identified potential careers of interest, students can search for colleges, universities and technical schools for postsecondary training. Those searches can be close to home or extend throughout the country, helping them narrow their options based on their career choices.



Collegians

Once students graduate from high school, AgCN becomes a resource for launching them toward higher levels of FFA awards and recognition, as well as toward their chosen career. After having logged their vital information throughout high school, students are able to easily submit American FFA Degree and proficiency award applications. As they continue to enter information

beyond FFA, collegians can generate resumes that highlight their experiences, making them much more desirable in the competitive job market. They can then access the network of contacts they logged as they participated in field days, FFA conventions, job shadowing, SAE activities and employment, and internships. With continued access to AgCN, college students can begin utilizing the career mentors inside Discover/Inspire Ag Careers for reviewing resumes, setting up company tours, applying for internships, even submitting applications for employment with agriculture companies across the country.

Utilizing AgCN and the new FFA Link site (www.ffa.org/ffalink), recent high school graduates and FFA Alumni can network with other college students and young professionals who share their interests in agriculture, watch live streaming chats with business leaders and connect with job opportunities in the agriculture sector. Engaging potential employers through LinkedIn and agcareers.com is also possible. Students can connect directly with potential employers and mentors based on their skills, achievements and interests. All of these opportunities help our students move from the exploration stage into the application phase of their careers, satisfying the need to see forward momentum toward their chosen professions.

Professionals

Life after postsecondary training can take a lot of twists and turns, but one thing will remain constant—the potential for reengagement with agricultural education through AgCN. Should anyone with a profile want to access the information they have logged at any point in their life, it will be there. When former students are thinking about a career change, becoming involved in a local alumni affiliate, or advocating for agricultural education, FFA, or the agriculture industry, information and access are at their fingertips through AgCN. New supporters who arrive at the agriculture department door when their teenager enrolls will have access to AgCN through the community and alumni portals.

The idea is to engage as many people as possible in the network. AgCN allows individuals to identify themselves as parents, alumni, or community members who are interested in sharing their time, skills and talents with current high school students as mentors and advocates. The system can provide members with notification of local FFA chapter events and needs, connect them with like-minded agriculture advocates, allow them to register for national FFA events, conferences, workshops and more. Parents can view their students' scholarship, award and career prospects to enhance what they are learning in the agriculture classroom.

Agricultural Educators

In addition to engaging students for a lifetime, AgCN has immediate benefits for instructors, especially in the areas of impact and support resources. Once familiar with the system, teachers are able to:

- empower student recordkeeping skills
- submit rosters to the state FFA association
- track student accomplishments
- provide electronic event notices to all students and supporters who use AgCN
- monitor student applications
- gather data to demonstrate relevance and impact of agricultural education
- build a local and state advocacy network through direct communication with local supporters and former members
- better communicate opportunities for future employment in the agriculture sector
- simplify the process for identifying volunteer roles in the program

American agriculture depends on a reliable supply of talent, innovators and leaders in its workforce. Channeling our students through the agriculture department door to postsecondary training and careers in the agriculture sector is vital. The Agricultural Career Network is the perfect vehicle to propel them forward. It should be used as a means for secondary students to track their experiences and accomplishments, explore careers in the agriculture industry and secure employment. The industry wants it, National FFA is providing it and agricultural educators can make it happen. Give your students their invitation to the system and let them begin their journey toward a lifetime of career success. They deserve it.

For more information go to https://www.ffa.org/agcn/default.htm or contact your Local Program Success Specialist with the National FFA Organization at 317-802-6060.

Nina Crutchfield is a Local Program Success Specialist for the National FFA Organization.

The 2014 Agricultural Education Magazine Themes

January February
Agricultural Education Magazine Potpourri

Many times potential ideas for articles do not fit the proposed themes. In 2014 you will have another opportunity to submit and an article that does not fit one of the themes. **To have your article considered for this issue, please submit a 100 word abstract to the Theme Editor that summarizes your idea for an article.** Based on the abstracts submitted, the Theme Editor will select seven to ten topics for development into full articles for potential publication in *The Agricultural Education Magazine.*

Theme Editor:
Deborah A. Boone, Ph.D.
Associate Professor
Agricultural and Extension Education
Davis College of Agriculture, Natural Resources, & Design
West Virginia University
P.O. Box 6108
Morgantown, WV 26506
Email: debby.boone@mail.wvu.edu
Phone: 304-293-5450

March April
The Road Less Traveled

As agricultural education programs have evolved over the past twenty-five years, the types of students involved in the programs have changed as well. Who are these non-traditional students, where did they come from, and where are they taking us?

Theme Editor:
Jon Simonsen, Ph.D.
Assistant Professor
Agricultural Education
College of Agriculture, Food & Natural Resources
University of Missouri
125A Gentry Hall
Columbia, MO 65211
Email: simonsenj@missouri.edu
Phone: 573-884-7375

May June
Experiential Learning in the 21st Century

The 2014 National Ag Ed Summit in Indianapolis, Indiana will highlight research and approved practices for supervised experience programs. This issue of *The Agricultural Education Magazine* will build on the issues discussed during the Summit.

Theme Editor:
R. Kirby Barrick, Ph.D.
Professor
Agricultural Educ & Communication
College of Agricultural & Life Sciences
University of Florida
220 Rolfs Hall
PO Box 110540
Gainesville, FL 32611-0540
Email: kbarrick@ufl.edu
Phone: 352-273-2587

July August
Assessing Student Achievement

Agricultural education has not been exempt from the "accountability" movement in education. Programs are expected to implement practices that will provide data to evaluate student performances and overall program quality. This issue of *The Agricultural Education Magazine* will explore ways the high school teacher can use to assess student achievement.

Theme Editor:
Andrew Thoron, Ph.D.
Assistant Professor
Agricultural Educ & Communication
College of Agricultural & Life Sciences
University of Florida
307C Rolfs Hall
PO Box 110540
Gainesville, FL 32611-0540
Email: athoron@ufl.edu
Phone: 352-294-1992

September October
Preparing the Next Generation of Leaders

Many individuals attribute their leadership skills to participation in agricultural education and the FFA. What are the techniques used by agricultural education programs to develop leadership skills? How have these techniques changed over the years. A series of personal examples will be used to explore the techniques.

Theme Editor:
Ryan M. Foor Ph.D.
Assistant Professor
Agricultural Education
Agriculture and Life Sciences
University of Arizona
P.O. Box 210033
Saguaro Hall, Room 221B
1110 E. South Campus Drive
Tucson, AZ 85721-0033
Email: rfoor@email.arizona.edu
Phone: 520-621-9889

November December
Utilizing School Laboratories

The development of psychomotor skills is a crucial component of career and technical education programs. In order to develop these skills, laboratory activities are essential. Agricultural educators utilize many laboratory settings to provide skill development opportunities for its students. A number of practitioners will share ways they use laboratories in their agricultural education programs.

Theme Editor:
Thomas H. Paulsen, Ph.D.
Assistant Professor
Agricultural Education and Studies
College of Agriculture and Life Sciences
Iowa State University
217 Curtiss Hall
Ames, IA 50010
Email: tpaulsen@iastate.edu
Phone: 515-294-0047

UNITED STATES POSTAL SERVICE®

Statement of Ownership, Management, and Circulation (All Periodicals Publications Except Requester Publications)

1. Publication Title	2. Publication Number	3. Filing Date
The Agricultural Education Magazine	0 7 3 2 - 4 6 7 7	Sept. 30, 2013
4. Issue Frequency	5. Number of Issues Published Annually	6. Annual Subscription Price
Bi-Monthly		$15.00

7. Complete Mailing Address of Known Office of Publication *(Not printer) (Street, city, county, state, and ZIP+4®)*

300 Garrigus Bldg., 325 Cooper Drive, UK
Lexington, KY 40546-0215

Contact Person: Wm. Jay Jackman
Telephone *(Include area code)*: (859) 257-2224

8. Complete Mailing Address of Headquarters or General Business Office of Publisher *(Not printer)*

300 Garrigus Bldg., 325 Cooper Drive, UK, Lexington, KY 40546-0215

9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor *(Do not leave blank)*

Publisher *(Name and complete mailing address)*

Wm. Jay Jackman, 300 Garrigus Bldg., 325 Cooper Drive, UK, Lexington, KY 40546-0215

Editor *(Name and complete mailing address)*

Harry N. Boone, Jr., P.O. Box 6108, 2054 Agricultural Sciences Building, Morgantown, WV 26506

Managing Editor *(Name and complete mailing address)*

Wm. Jay Jackman, 300 Garrigus Bldg., 325 Cooper Drive, UK Lexington, KY 40546-0215

10. Owner *(Do not leave blank. If the publication is owned by a corporation, give the name and address of the corporation immediately followed by the names and addresses of all stockholders owning or holding 1 percent or more of the total amount of stock. If not owned by a corporation, give the names and addresses of the individual owners. If owned by a partnership or other unincorporated firm, give its name and address as well as those of each individual owner. If the publication is published by a nonprofit organization, give its name and address.)*

Full Name	Complete Mailing Address
The Agricultural Education Magazine	Wm. Jay Jackman
(not for profit - no stockholders)	300 Garrigus Bldg., 325 Cooper Drive, UK
	Lexington, KY 40546-0215

11. Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages, or Other Securities. If none, check box → ■ None

Full Name	Complete Mailing Address

12. Tax Status *(For completion by nonprofit organizations authorized to mail at nonprofit rates) (Check one)*

The purpose, function, and nonprofit status of this organization and the exempt status for federal income tax purposes:

■ Has Not Changed During Preceding 12 Months

☐ Has Changed During Preceding 12 Months *(Publisher must submit explanation of change with this statement)*

13. Publication Title: The Agricultural Education Magazine

14. Issue Date for Circulation Data Below: July'12-June'13 May-June 2013

15. Extent and Nature of Circulation			Average No. Copies Each Issue During Preceding 12 Months	No. Copies of Single Issue Published Nearest to Filing Date
a. Total Number of Copies *(Net press run)*			1,496	1,400
b. Paid Circulation *(By Mail and Outside the Mail)*	(1)	Mailed Outside-County Paid Subscriptions Stated on PS Form 3541 (Include paid distribution above nominal rate, advertiser's proof copies, and exchange copies)	1,319	1,223
	(2)	Mailed In-County Paid Subscriptions Stated on PS Form 3541 *(Include paid distribution above nominal rate, advertiser's proof copies, and exchange copies)*	0	0
	(3)	Paid Distribution Outside the Mails Including Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid Distribution Outside USPS®	0	0
	(4)	Paid Distribution by Other Classes of Mail Through the USPS (e.g., First-Class Mail®)	25	25
c. Total Paid Distribution *(Sum of 15b (1), (2), (3), and (4))* ▶			1,344	1,248
d. Free or Nominal Rate Distribution *(By Mail and Outside the Mail)*	(1)	Free or Nominal Rate Outside-County Copies included on PS Form 3541	0	0
	(2)	Free or Nominal Rate In-County Copies Included on PS Form 3541	0	0
	(3)	Free or Nominal Rate Copies Mailed at Other Classes Through the USPS (e.g., First-Class Mail)	0	0
	(4)	Free or Nominal Rate Distribution Outside the Mail *(Carriers or other means)*	0	0
e. Total Free or Nominal Rate Distribution *(Sum of 15d (1), (2), (3) and (4))*			0	0
f. Total Distribution *(Sum of 15c and 15e)* ▶			1,344	1,248
g. Copies not Distributed *(See Instructions to Publishers #4 (page #3))* ▶			152	152
h. Total *(Sum of 15f and g)*			1,496	1,400
i. Percent Paid *(15c divided by 15f times 100)* ▶			100	100

16. ☐ **Total circulation includes electronic copies. Report circulation on PS Form 3526-X worksheet.**

17. Publication of Statement of Ownership

■ If the publication is a general publication, publication of this statement is required. Will be printed in the Sep/Oct 2013 issue of this publication. ☐ Publication not required.

18. Signature and Title of Editor, Publisher, Business Manager, or Owner: Wm Jay Jackman, Business Manager — Date: Sept 30, 2013

I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on this form or who omits material or information requested on the form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including civil penalties).