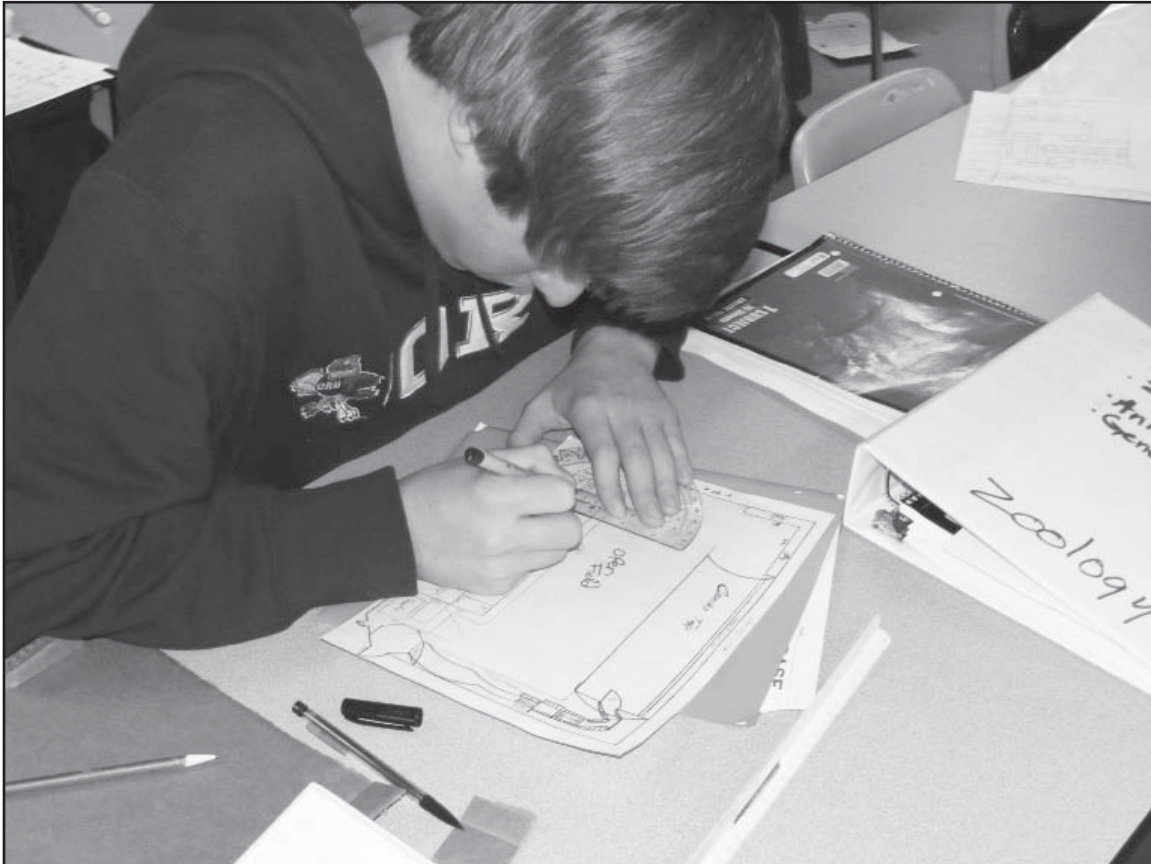


The Agricultural
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M A G A Z I N E

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THE CASE INITIATIVE

Reflections from the Editor

by Harry N. Boone, Jr.

It's hard to believe that three years have passed since I accepted the challenge of serving as the Editor of the *Agricultural Education Magazine*. The three years have been marked by a few setbacks and numerous highlights. My first major setback was with the first issue I served as Editor. Through miscommunication, the first issue was not ready. Dr. Antoine Alston was the first individual to come to my rescue. He was the Theme editor of the next issue and was ahead of schedule. I simply switched the order of the themes and kept close to my original schedule. The extra time allowed me to organize a number of authors to fill the void and publish the issue on "International Agriculture." I am deeply indebted to these individuals who dropped everything and came to the aid of a colleague.

Over the past thirty-six months, I have had the pleasure to work with a number of great Theme Editors. They have taken their responsibilities seriously and worked to provide the profession with informative and timely articles. I would like to thank everyone who has served as a Theme Editor during the past three years.

The Theme Editors and I could not have completed our responsibilities without dedicated teacher educators, state supervisors, graduate students, and agricultural educators willing to share their knowledge and experiences with the profession. One of the challenges we give to potential authors is to "share practices that can be used in the real world of teaching agriculture." Over the past three years authors have met this challenge. While I read the articles in a

totally different manner as Editor, I still take the time to enjoy the articles as a member of the profession.

2013 Agricultural Education Magazine Themes

The September-October issue is the issue that introduces the themes for the next year. I have done my best to select themes that are timely to the profession. In fact four of the six themes were suggested by readers of the *Magazine*. "Urban Agricultural Education," "What We Learn from Research about Teaching Agriculture," "Stories about Teaching and Learning," and "Keeping the Home Fires Burning" were suggested by readers of the *Magazine*. The fifth theme, "Using Agriculture to Teach STEM," is, in my opinion, a very timely topic. STEM is a current "buzz" word in education and agricultural education has been involved with STEM since its inception in the 19th century. The sixth theme is a repeat from 2012. In 2012 we did a "Potpourri" segment where potential authors were not restricted by a theme. We had an overwhelming success with the issue so I decided to try it again. For a complete listing of the 2013 Themes, please turn to page 26.

2013-2015 Agricultural Education Magazine Editor

The September-October issue is traditionally the one where the new Editor is introduced to the profession. As you read through the issue you will not find this announcement. The reason: I have accepted the invitation to serve a second term as Editor of the *Agricultural Education Magazine*. I accepted a second term because I enjoy the opportunity to serve the profession and to do my share in

providing professional development, in the form of timely articles, to agricultural education teachers across the United States.

The CASE Initiative

The September-October issue has been devoted to the CASE curriculum initiative. Dr. Michael Retallick, Theme Editor, has done an outstanding job of assembling a series of articles on the CASE curriculum. Many of the articles were written by practitioners willing to share their personal experiences with the CASE curriculum. The practitioners range from individuals early in their teaching careers to an individual with "less than 5 years to retirement." All talk about the positive aspects of the curriculum. The issue also contains articles from the CASE Project and Curriculum Directors. The final CASE article consists of "tips for implementing CASE" that were derived from a research investigation conducted at Oregon State University.

I hope that you enjoy the issue. I look forward to continuing to serve you as the Editor of the *Agricultural Education Magazine*.



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

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Cover Photo: *Animal Science student designing a cattle facility during the Animal Facilities and Safety unit. Photo courtesy of Jaysa Fillmore.*

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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.

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Transformational Learning in Action

by Michael S. Retallick

Thanks to the leadership and vision of The National Council for Agricultural Education, the agricultural education profession has been buzzing about the Curriculum in Agricultural Science Education, better known as CASE. So what's the buzz about? A web search will direct you to the CASE website (case4learning.org) where you can learn about the CASE Initiative. You can learn about the curriculum design, the CASE philosophy and pathways; browse samples of the curriculum; explore

The next several articles are written by agriculture teachers who range in experience from new first year rookies to the sagely veterans who are nearing retirement. Most of us can probably relate to one or more of them as we read their articles. They discuss the challenges they were facing as teachers before their CASE experience, their excuses and reasons why they didn't have time for participating in the CASE Institute(s), and the profound impact that CASE has had on their teaching and the students in their classroom.

Hopefully, the testimonials by

The CASE experience is transforming the agriculture classroom and the students enrolled.

the professional development approach; and peruse the movements toward certification and validated assessments. This issue of *The Agricultural Education Magazine* takes you beyond the buzz and the World Wide Web.

The articles in this issue are authored by a variety of people in the agricultural education profession. We begin this issue with an explanation of CASE, not from the eyes of the creators, but from the teachers in Minnesota who have experienced it. Brad Schloesser, CASE National Advisory Committee Chair and Agribusiness instructor at South Central College in Mankato, using comments from four teachers shares some "Hey statements" in great Minnesotan fashion.

teachers, all of whom came forward and volunteered to write an article for this issue, create additional interest and inspire you to further explore CASE. The remaining articles in this issue will help you develop a better understanding of CASE and the value that the curriculum brings to the local agricultural education program. Dr. Jansen, project director for CASE, makes the case for CASE in his article. He describes the value of CASE as part of the CTE STEM initiative and explains the value of the pedagogical approach used throughout CASE. The next article by Lambert and Elliot provides a list of nine teaching tips and is based on research conducted with teachers who implemented CASE. The final article is a list of FAQs focused on information

regarding the CASE institutes and the implementation of CASE. This article by Marlene Mensch, CASE Curriculum Director, will provide you with the information to turn your interest and intrigue into action.

Personally, I have participated in two of the CASE Institutes (AFNR and Agricultural Science-Plants), peeked in one a third (Animal and Plant Biotechnology), and observed several CASE teachers teaching in their classrooms. My experience was quite similar to the authors in this issue. As a teacher educator, I value that the curriculum is well-scaffolded around agricultural concepts and aligned with AFNR Career Clusters, National Science Standards, and English and math standards with a strong assessment and certification component in development. The curriculum provided the content and activities needed to teach, yet allows teachers time focus on their teaching and their students. Most importantly, the curriculum is learner-centered and meets the expectations of an educationally rigorous agriculture classroom. The CASE classroom is engaging, shifts the responsibility for learning from the teacher to the student, focuses on concepts rather than minute and

continued on page 13



Dr. Michael S. Retallick, the September-October Theme Editor, is an Associate Professor of Agricultural Education and Studies, Iowa State University.

Hey, What do You Know About CASE?

by Brad Schloesser

Hey statements..." Often I am greeted in person by an associate, student or friend by the greeting "Hey!" E-mails, text messages and many phone connections begin with it too. Four MAAE (Minnesota Association of Agricultural Educators) members who teach with the Minnesota Curriculum for Agricultural Science Education shared their "hey statements" with me. Here is what they had to say...

"Hey! Because of CASE my students were active learners that took charge of their own learning. I feel, because of that – my students learned more and enjoyed learning more too." – Lindsey Brown, Chisago Lakes High School

"As a new teacher, CASE has greatly eased my mind this semester because I never have to worry about what I am going to teach next." – Gena Lilienthal, Ag Science Academy, St. Peter/Le Sueur/Henderson High School

"CASE has made me a better teacher!" – Liz Tinaglia, Owatonna High School

"Hey! The curriculum has improved my teaching style." – Dennis Bjorklund, Carver-Scott Educational Cooperative

Following the "Hey" statement, many teachers express their excitement about CASE. Here is the reason you ought to get excited too - Hey, pay attention here!

The Curriculum for Agricultural Science Education™ (CASE™) project has developed and continues to work on a structured sequence of

agriculture courses and serves as a model for elevating the rigor and relevance of agricultural education. The CASE website provides all you need to know to begin your investigation of what CASE is and if you're really making a commitment by registering for CASE Institute this summer, go to this official site: www.case4learning.org.

CASE Institute is a professional development workshop that provides teachers training for the instruction related to a specific CASE course. Once a teacher has successfully completed 80 hours of intense professional development at an institute, the teacher is certified to teach the specific CASE course.

CASE is much more than just curriculum. In fact, this type of education is a system of instructional support for the classroom teacher like no other resource in agricultural education today. The CASE model provides four major areas of support (i.e., curriculum, professional development, assessment and certification) to promote solid classroom instruction using rigorous and relevant lessons while enhancing student learning.

See what Dennis Bjorklund of the Carver-Scott Educational Cooperative has to say regarding "change" and what the CASE animal science course has done for him and his students.

"I have taught for 34 years and have seen a lot of changes in teaching agriculture," said Bjorklund. "When I started teaching, the classroom had blackboards, mimeograph machines, filmstrip and movie projectors, overheads and typewriters. No computers, DVDs, SMART boards or copy ma-

chines. I have seen a lot of changes mandating how agriculture education should be delivered to students. My agriculture curriculum has continually changed and updated through the years.

The biggest change in my curriculum occurred three years ago when I attended the 80 hour professional development institute for CASE Principles of Animal Science. The institute was the most intense professional development training that I have received during my teaching career. Two years ago, I field tested the curriculum in my three animal science classes that I offered. Students enjoy inquiry-based lessons with activities, projects and problems (APP) because they are different than what they usually do in class. This year I had 63 students complete the entire CASE animal science class in two sections of a semester block animal science class. The curriculum has improved my teaching style and it gives students different ways to learn the concepts of the agricultural lessons.

The curriculum is easy to use and works well with other animal science topics I have used in past years. Many of the top students in class like the lessons because the material is presented differently than how they learned it in biology class."

So, hey you may be thinking, sure it works for an experienced teacher, but what about if I am in my first year and just getting into this profession? What will it be like for a new teacher that is going through the induction phase of agri-science related teaching? Next you can gain a real perspective from a one-year veteran.

Lindsey Brown of Chisago Lakes High School is a first year teacher, and



Lindsey Brown, Chisago Lakes High School Agricultural Educator, is preparing for her first year of teaching. Liz Tinaglia, Owatonna High School, veteran teacher of CASE, Master Teacher for the Institute in Plant Science and Introduction to Ag, Food and Environmental Sciences offers suggestions.

recipient of a National Association of Agricultural Educators scholarship. She completed the CASE Animal Certification in 2011. Here she shares about how her teaching has been influenced by CASE Institute training: “CASE really helped me rethink how I run my classroom. Although it took me some time to get where I wanted and learn how to best utilize CASE in my classroom, I have really tried to incorporate many Activities, Projects and Problems (APP) and hands-on activities in my classroom. Also, I really like how CASE lays out the teacher notes - they are short and to the point. I have worked hard in carrying that over to all my classes. As you may have already guessed, CASE not only influenced my animal science class, but all my classes.”

Lindsey was certified at the South Central College-hosted institute, splitting time with 16 other educators at the college in North Mankato (MN) and spending a week at the Dairy Education Center at New Sweden Dairy that is managed by the University of

Minnesota’s College of Veterinary Medicine.

Regardless of experience in teaching agricultural sciences, veteran and beginning teachers alike are discovering the power of the CASE model, which is written by agricultural educators for agricul-

tural educators.

Hey, you are probably wondering how many different courses have been developed under the CASE system? There are four courses that are completed and field tested, and teachers are using them at present. They are: Introduction to Agriculture, Food and Natural Resources (AFNR), Agricultural Science – Animal, Agricultural Science - Plant, and hot-off-the-curriculum-writer’s laptop... an animal and plant biotechnology course that will be field tested this fall. Hey, would that appeal to your students and remodel your current offerings?

The CASE System was designed to provide a model for new programs and those in schools that are looking for a major change in program offerings. I am an agricultural educator with experience teaching at the secondary and post-secondary levels, and had been living in a community with no ag-related education for more than 20 years. Therefore, could you imagine what I was feeling when

Principal Paul Peterson of our local high school in St. Peter contacted me and said, “Hey, what is available for curriculum in the agricultural sciences if the local district were to initiate a new program – academy style?”

That is how the phone voice message came to me in fall of 2010. HEY!!! I was excited and delighted. A talented young teacher who had participated in CASE was hired for the job. The reality of watching a new program being built and seeing this educator capitalize on a highly rigorous curriculum with tremendous training and support on how and what to teach was awesome. The opportunity to assess what students are learning at the end of a course - in the age of accountability - is also amazing. Hey, we are on to something really good here. **The reality is a community has discovered the importance of agriculture and what a strong curriculum can do for students!**

See what a teacher says in a new program; Gena Lilienthal, is just beginning her career in teaching. She established a brand new ag program at the ag science academy in St. Peter/Le Sueur-Henderson. She comments on the support her program has received from her school administrators when incorporating CASE: “During the development stages of the South Central Minnesota Agricultural Science Academy, school administration and the development committee used a portion of the CASE pathways as tools for designing their course sequences in animal and plant science. They were glad to see the science standard alignment and the integration of technology within the curriculum. The hands-on approach with inquiry-based learning captured their interest in CASE.”

Lilienthal felt CASE gave her the value of time management, because it fully prepared her for two courses in

her program at the academy. As she looks back at her year she explains, “I took a total of four full weeks (at Kansas State University and at Rutgers, the State University of New Jersey) out of an already busy summer to directly be immersed in the CASE curriculum. It was the most beneficial decision I made while preparing for teaching. Being able to walk through all the labs, reflection questions, and homework assignments throughout the summer was well worth the time. Now during the school year, I keep my summer resources from the institutes on the corner of my front classroom table. I have an entire course laid out in detail, right at my fingertips.”

The four areas of teacher support include curriculum, professional development, assessment and certification. Each area contributes to the validity of CASE instructional materials by ensuring that teachers are properly equipped and trained and student learning is clearly accountable.

Hey, you may wonder, how does one get professionally developed at a CASE institute? Only certified educators who attend a CASE Lead Teacher Training have taught the course, so they have experience with every lesson – those are the people that are preparing educators to use CASE.

Here is one of our finest...hey, she has certifications in three courses!!! CASE (master teacher) Liz Tinaglia, an ag educator at Owatonna High School, has used three CASE courses and actually trains teachers during CASE institutes. She was a Minnesota development team member of CASE and has this to say about her use of the model:

“CASE has made me a better teacher. The training is unlike anything else I have experienced. You really do what your students will do in

the classroom. Without the training, CASE would just be another big binder to stick on the book shelf.”

Too many times veteran educators find this to be true regarding professional development. Tinaglia discovered that students in the program do well and desire CASE. “My students like the curriculum. They thrive on the structure with the APP delivery. They know what is expected of them and how to go about doing it. The teacher can make accommodations for special students and situations for their classroom and community.

I now understand the importance of curriculum objectives, essential questions and assessments that are valuable for the student. I use the objectives and essential questions on a regular basis. I write them on the whiteboard and refer to them during the lesson. I also use the conclusion questions to check for student understanding. You can clearly see how the assessments match the objectives we want our students to learn. I believe CASE is a good investment because of its rigor and relevance to AFNR standards and it prepares our students for careers in agriculture. The CASE model follows the inquiry learning and the gradual release models in education.”

It is all about learning! We do it well as ag educators. CASE is one way to make teaching easier, save time during your day-to-day schedule and gain more confidence from school administrators when it comes to accountability, and “hey, raise the level of learning your students may experience.” CASE may be what you



Amber Siebert, Fairmont High School, is preparing for an intramuscular injection during one of the CASE activities in the Animal Science Course. She will create a new program in a school that has not offered AFNR Education for over twenty years.

are looking for to enhance your career and program.

For more information contact Brad Schloesser at Bradley.Schloesser@southcentral.edu or by phone at 507-389-7263.



Brad Schloesser is the CASE National Advisory Committee Chair and Agribusiness Instructor at South Central College, Minnesota.

CASE Makes Science Sense

by Jaysa Fillmore

Oh, now I get it! We learned about that in science class, but now I know what it means!" A statement I felt proud to hear as an agriscience teacher. Well, I wish I could take all the credit, but I think CASE may have something to do with that! I have heard this same statement several

quiet, and they would magically pass all the multiple choice tests at the end of the units. I first heard about CASE through NAAE listserv e-mails and it sounded like something that could work for me.

Many teachers look at CASE, see the costs, and figure they have better ways to spend their limited budgets. I didn't even have any money budget-

Step 1: Get your administration on board.

When my administration heard I wanted to attend a ten day summer course that would teach me about inquiry, science, scaffolding curriculum, and spiraling concepts, they were nothing by supportive. The CASE organization did a great job of providing materials to use to discuss the project with administration. In the "Promotional Tools" section of the case4learning.com website there are PowerPoint presentations, hand-outs, and School District Agreements for teachers to share with administration.

Step 2: Secure funding for a CASE Institute.

Budget in advance with Perkins funds, program funds, or outside source grants to attend a CASE Institute. It costs between \$2,000 and \$2,500 to attend a CASE Institute. This fee includes lodging during the Institute, meals, Lead Teachers, supplies used during the Institute, and the curriculum CD. After becoming

CASE helped students understand previously abstract concepts. CASE made science make sense.

times in the past two years I've taught the CASE curriculum in my program.

CASE makes science concepts make sense to students. Whether students are learning about cells, measuring, photosynthesis, or respiration, CASE adds the element of inquiry which causes students to take ownership of their learning. CASE activities, projects, and problems cause students to ask questions, seek answers, and find conclusions.

I attended my first CASE Institute the summer after my first year of teaching. I was a typical first year teacher- overwhelmed, stressed, and struggling to keep my head above water. I knew I couldn't make it another year without some help. I had figured with a college degree and the "curriculum" given to me by the state, I would be able to do just fine! Boy, was I wrong. The "curriculum" I was expected to use was nothing more than outdated outlines of boring information. I was supposed to lecture, kids were supposed to be

ed for CASE the first year I attended! I sought help from my local Farm Bureau, agricultural chemical companies, and other supporters of Ag Ed to help pay my way to the Institute. Attending a CASE Institute made me a better teacher and in turn helped my students learn more and understand better. Cost shouldn't be the obstacle. Take it from a teacher that almost quit after the first year: CASE will make you want to keep teaching!

A step by step guide to becoming a CASE teacher:



Animal Science students testing the affects of different sugars on yeast respiration using Vernier CO2 sensors and the LabQuest.

a certified CASE teacher, participants receive free updates to curriculum and enjoy other benefits like discounts on equipment through the CASE store and continued professional development opportunities.

Step 3: Attend a CASE Institute.

During 2012, there were 15 CASE Institutes held across the country from eastern Oregon to Maryland. A CASE Institute is 80 hours of intense professional development. Two CASE Lead Teachers facilitate the Institute. These Lead Teachers are CASE certified ag teachers currently using the curriculum in their schools, completed an application and selection process, and have attended a Lead Teacher training. Participants can expect to attend nine days of class from 8 a.m. to 5 p.m. and have homework almost every night. The CASE Institutes cover the entire year-long course in those nine days, so expect a fast pace and intense schedule!

Step 4: Prepare to teach CASE.

One of the most important things a CASE teacher can do is to build a relationship with the science department to enable sharing of supplies and materials. Because CASE courses are filled with agriscience activities, projects and problems, lab equipment and supplies are utilized a lot. After attending a CASE Institute, teachers will have a better understanding of what materials to purchase at what point in the school year. CASE also provides purchase manuals on the website for each course. Grants are a great way to secure funding for CASE supplies and equipment. As a newer teacher, I was extremely impressed and grateful for the resources provided in the CASE curriculum. All the student sheets, presentations, assessments, teacher notes, and other resources are provided on the curriculum CD. I no longer had to spend my

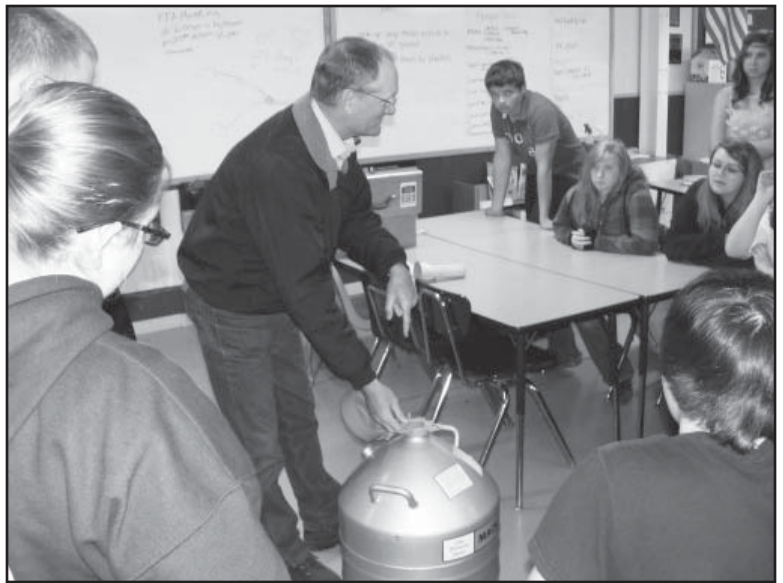
prep hour and time after school creating lab sheets, quizzes, and PowerPoint presentations to teach my class.

Step 5: Teach your students better by using CASE!

CASE certified teachers should jump in with both feet and use the CASE curriculum to improve their instruction and their ag program. Students will buy in, they will better comprehend science, and they will show interest in ag class! Students may even be heard groaning about doing so much! Sometimes my classes were begging for a worksheet from the textbook. Students aren't used to the learning style that CASE provides, but once they get acclimated, they will beg for more.

Step 6: Continue to improve.

After attending a CASE Institute, teachers will have a built-in network of other CASE certified teachers. Utilize resources like NAAE Communities of Practice and attend workshops at state, regional, and national ag teacher events. Utilizing these resources will help teachers continue to improve their skills and their understanding of CASE. Attending the National Agriscience Teacher Ambassador Academy is also a great way of learning how to incorporate more inquiry in agriscience courses like CASE.



Animal Science students watching a demonstration of semen thawing by Idaho County extension agent, Jim Church.

I have been teaching CASE curriculum for the past two years and can already see the difference it makes for my students. I was criticized for posting all A's and B's for semester grades in my CASE classes, but students legitimately earned those grades. Students were engaged in activities, projects, and problems each day in class and learned the concepts. They finally understood previously abstract concepts like pH, photosynthesis, cellular respiration, osmosis, and diffusion. CASE helped me make this happen. CASE made science make sense.



Jaysa Fillmore is an Agriscience Instructor at Burley High School, Burley, ID.

From Good to Great

by Lori A. Dyer

The enemy of great is good... Jim Collins writes in his management book and I know that students fall into the trap. They ask "Mrs. Dyer, is this good enough?" when they have been working on a particularly difficult project for longer than they want. I also know that as agriculture teachers we must fight this every day of our professional lives. I've told myself things like "I have a good set of lesson plans; I have a good set of projects to use with my plans; I have success teaching career development events."

In the spring of 2011, I did not want to fight this battle, I was less than 5 years from retirement, I had good enough lesson plans. Students liked my class, my "numbers" were good, the guidance counselor made sure the kids going on to agriculture-related careers and colleges took at least an introductory agriculture class, so I ended up with a nice mix of students. I had other excuses too; I needed my summer break to recharge for next year, it is hot in Dayton, Ohio in July; two weeks for an in-service is way too long; I didn't need college credit. I thought of every possible excuse for not attending the CASE Institute (CI), but when all the bets were down I was faced with the answer.

The fee has been paid, "YOU ARE GOING, I am the boss!" Actually my boss is very supportive and not a dictator but I knew that once the fee was paid in April, I was committed. So like every student since time began, I decided to do what I had "to get by." I was after all a good teacher and I knew how to do a lot of lessons and some of my plans were very good!

I asked about commuting the one hour each way daily to save my district a little money and was told I could but it was not recommended because there would be home work and group work and I really wouldn't have time for the long drives each day. Pout, another good idea shot down. Believe me if there was an excuse for not attending CI I thought of it and I used it and still I went! Am I ever glad I did! I learned the final key that has taken my good efforts and made them great and given me great results!

the planning has been done for you, the scaffold is built in and the lessons spiral to a peek of learning generally difficult to reach in a busy agriculture class.

One of the best things I learned from my CI was to answer student's questions with a leading question; this helps them take responsibility for their own learning. To be honest this has been my goal in teaching for twenty years and I did have some success in "teaching students how to learn" but CI builds it into their lessons in such

CASE has given me a renewed desire to take my teaching to greater levels.

What changed my mind? During the first day of CASE training we were doing the early introductory lessons and the lesson was actually one I had done before with my students and I was thinking, "see, I already know how to do this stuff, I am good enough..." When our instructor said, yes, that is one possibility for doing this lesson but let me show you the next step as an example of The CASE model of scaffolding and spiraling that helps students really learn. Out of the blue, I saw a better way and I decided to invest just a little bit in learning how to do this style of teaching and I haven't regretted it once.

The scaffolding and spiraling that CASE uses to set students up for learning is a great technique that can be adapted to most lessons we teach, but the beauty of this program is that

a way that students start asking the right questions immediately and this leads them quickly to asking the next step questions and thinking creatively about their learning, exactly what I had wanted students to do all along.

I will have to say that CI was one of the most intense professional development events in which I have participated. I did drive home on two nights and the weekend, but the remaining evenings I spent with my cohorts at our hotel doing our home work! OK, that might be a little misleading, we generally had time for a fun evening event like "wing night" at a local eatery or a short trip to a local tourist attraction for a bit of silly fun, but then we actually did have homework, readings and discussions to get through most evenings. CI days were 8 hours of actually doing every plan we would use with students.



Photo courtesy of Dr. Misty Lambert. . (Dr. Lambert offers “Tips on Case Implementation” on page 18.)

I am sure that many teachers are thinking this is silly, but with the CASE model of teacher training this gives each participant a great store house of experience, notes of pitfalls and extensions for lesson plans in the extensive library. At CI you will use every piece of lab equipment required by every lesson. As a more mature (I might even say old) teacher, I know that I have forgotten how to use some equipment and honestly some of it is so new I had never used it! When you get ready to teach a lesson to your students you can say with confidence “When I did this the first time, here is what I learned that might help you now.” YOU HAVE THE EXPERIENCE and that has been the model of teaching agriculture since 1919.

When I started using my training with a group of students, I was amazed at how well they took to the system. Students liked having a common look to their lesson assignment sheets; very quickly they learned that I would not be answering their questions directly and that they were actually going to have to work at their own learning, so they did. I was very impressed with how curious and inquisitive students were when they were encouraged.

I really knew that I was on to something great when soon after the winter holiday I stopped teaching CASE lessons to teach a unit on hydraulics that my advisory committee insisted

that I teach. I went ahead and wrote my lesson plan to follow the model of inquiry-based instruction I had learned with CASE and the students took this unit and really ran with it, my advisory committee was thrilled with the results and I was more convinced than ever that CASE plans were the system I needed to take my teaching to a greater level.

Many teachers hear me talking about CASE in glowing terms and some even ask for the curriculum so they can pick and choose what they want from them. This does no one any favors, copyright laws notwithstanding, just doing some of the lessons mixed in with other lessons doesn't give the students the scaffold they need to learn how to learn. I know from past experiences when I have been given great lesson plans by other teachers, state staff or university professors, if I haven't practiced the experiential skills I need to have, the lesson plan sits on my shelf taunting me because I never quite get to the place I can teach it to students, I just don't have the time on my own to learn the skills and prepare the lesson. CASE lessons are flexible but the general work has been done.

CASE training comes with some added benefits to teachers and schools which include the ability to certify student learning, buy equipment at a discount (enough savings that my school ordered additional sensors for other programs with the remaining funds) and the ability to prepare students for post-secondary learning which sometimes translates into credit at community colleges.

I am such a believer in CASE programming that when the opportunity to teach a CI was offered I applied and was accepted to teach the program to another group of great teachers. When the lead teachers met in Iowa to prepare for the teaching teachers experience, I learned even more about the practices of CASE Institutes but what really struck me was how many lead teachers were also committed to making this a great experience for more teachers.

CASE has given me a renewed desire to take my teaching to greater levels and while I am still with in the five year window of retirement, CASE is a program that will help me to go out with a positive result and not after a prolonged period of “isn't she able to retire, YET?”



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CASE: Worth the Sacrifice

by John Daniels

I was done. I always thought the day might come that I would burn out as an agriculture teacher, but I never dreamed it would be after only two years. How did I get to this point? As I thought back to my first two years as a teacher, I realized that I had experienced a very abnormal first two years, even for an agriculture teacher and FFA advisor.

One month after being hired for my first teaching job, the community I would be moving to was destroyed by one of the worst tornadoes in Iowa history. I was coming into a school with a very lackluster agriculture program. Coupling that with no school, I literally had no teaching materials and had to create everything on my own while adjusting to the life of a first year teacher in a temporary classroom until a new building was constructed.

My second year teaching should have been better. A new building was constructed and the community was physically rebuilt. I developed great relationships with my students and community and was ready to thrive in year number two. Wrong. A well-respected teacher and coach in our community was murdered by a former player of his in front of a number of high school students. The murder and subsequent trial for the killer added an incredible dimension of difficulty. Now, we were working with students who were having signs of PTSD (Post Traumatic Stress Syndrome) from the tornado and now the death of a beloved coach.

At the conclusion of my second year teaching, I was completely burnt out. I began looking at other job options and was wondering if I should

work in Industry or go to graduate school. I was tempted to move on and give up on teaching. The idea of leaving my community and especially my students was very difficult to consider.

During this time, I had heard some colleagues talk about CASE and how it was going to be revolutionary for agriculture education. I did not buy into it whatsoever. If it was so revolutionary, why did agriculture teachers have to pay an arm and a leg and give up two weeks of FFA work in the summer in order to be trained to be a CASE teacher? The opportunity came for me to attend a CASE training an hour and a half away in Des Moines.

As I read email after email in my inbox about how great of an opportunity this would be I still had doubts. It was not until I was told that our area education agency had Perkins funds that would cover the cost to attend CASE and the conversation came up with my administration about me attending that I decided to give it a try. In my mind, I figured that the worst case scenario was that I would give teaching one more year with the CASE Curriculum and if I didn't see any changes or improvement in my attitude towards teaching then I would leave and do something else.

WOW! That was all I could think about after completing the CASE training for the AFNR (Agriculture, Food, and Natural Resources) course. I was hooked. Two weeks of the most intense, challenging, and rewarding professional development I had ever experienced had pushed me to the mental edge and I came out renewed and ready to start the school year as soon as possible. The CASE Curriculum

literally changed my life and my career. What was it about CASE that changed me? Yes, it was great to have everything mapped out for the entire year right in front of me. Yes, it was nice not to have to worry about lesson plans and if they linked up to a certain standard or benchmark. What I determined to be the best part of the CASE experience came in two parts.

First, I loved the training. It was refreshing to be around twenty other agriculture teachers, some old and experienced, some young and naive (like me). The professional development that took place among us during those two weeks both in training and out of training taught me more about teaching and education than I learned in four years of college.

Second, everything that CASE stood for and put into motion in their curriculum was everything that I had ever hoped I could be as a teacher. We talk a lot about student-centered classrooms and having hands-on activities for students, but I found that I often fell short in those areas with the materials that I thought were important for students to know. With the CASE model and curriculum, I now had that ability to be an ag teacher that was hands-on and challenged students each and every day.

As I type this, I am preparing to start my fifth year teaching (first year at a new school). I grow more passionate about my job each day and love what I do way more than I did my first two years teaching. At this new school, I will be teaching the both the CASE AFNR course and the CASE Plant Science course. I decided that I could not stop with one CASE training and had to go back for more in June. Yet again, I was not disappointed.

Now, whenever I am around other agriculture teachers I make sure to mention the CASE curriculum and model. I realize that there will always be some who decide that their way and model is best and that they do not need CASE. To those teachers I say more power to you for you are a better man/woman than I am. However, if you are anything like me and you struggle to have something planned every day (even those days after a late night FFA event) or you feel that sometimes your lessons are not as student-centered and challenging as you had hoped they would be, then I highly recommend that you attend a CASE Institute. You will find that students, parents, and administrators will love what you are doing. In my situation, I found that administrators

and colleagues took what I taught more seriously rather than their usual “oh he is just teaching ag” when referring to what happens in the agriculture classroom.

If you are a younger teacher and have had an experience similar to mine in which you started thinking about leaving the classroom for what you deem are greener pastures, I urge you to give CASE a chance before leaving. We need quality young teachers, especially in agriculture. If you decide to leave teaching, our profession and your students are missing out on a very bright future.

Every teacher that attends has to make a sacrifice. You must be willing to give up two weeks of your summer, which might require par-

ents and alumni to help with FFA activities. You will also need an open mind about your teaching. CASE may change the way you think about teaching. If so many others are making this sacrifice to implement CASE, you can too. It will make you a better teacher and a better professional. Aren't your students worth the sacrifice?



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Transformational Learning in Action (continued from page 4)

unconnected facts, enables active learning to occur, causes the students to begin asking deeper, unprompted questions about the content, and allows the teacher to become the manager of student learning rather than just a conveyor of information.

As I attempted to synthesize the content of this issue, one word continually came to mind – TRANSFORMATION. The impact of the CASE initiative has dramatically changed how teachers think about teaching, deliver content to their students, and think about their career as an agricultural educator. CASE has been the reason some young teachers have persisted in the profession and it has revitalized some of our more tenured teachers causing them to rethink retirement.

Just as importantly, the experience is transforming the agriculture classroom and the students enrolled in those classes. Teachers who have

fully implemented CASE can share anecdote after anecdote about how the curriculum has impacted students and positively influenced student learning. Once the students adapt to the new style of teaching and learning, they are challenged by their own inquiry and, as Lamb stated in his article, students don't even realize the rigor and amount of work has increased.

Reflecting on the CASE experience, I think about how envious educators in other disciplines would be if they learned about the curriculum agriculture teachers have at their fingertips. We have the opportunity and the tools to truly transform learning for our students. Our profession is poised to be a model for successfully implementing transformational learning, which Merriam, Caffarella, and Baumgartner (2007) define as “dramatic, fundamental change in the way we see ourselves and the world in which we live” (p. 123).

As I conclude, I am reminded of a statement in a book entitled *Learning that Lasts* (Mentkowski & Associates, 2000). In that text, the authors emphasize that learning that endures is transformational. That statement describes the Curriculum for Agricultural Sciences Education!

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CASE: An Investment in Time

by Juston Lamb

Busier than a one-armed paper hanger. Sounds familiar doesn't it? It doesn't matter if we are talking about fall, winter, spring or summer, we all seem to have our calendars packed! School, family, church, social engagements, hobbies, etc. all take time out of our schedules. By the way, it's not just us. Our students

out if I could get back home for my son's ball game, ordering shirts for the first of four county fairs. I know, I am preaching to the choir. In short, like many of you reading this, I had about four minutes in the month of June that was not already scheduled and here I was headed out for 80 hours of training in this "new CASE program," which didn't neatly fit into my June schedule. No way, I thought to myself. There was no way I would

come up with a good answer on why I think the CASE program is so good. The best I can come up with is that after 26 years in education, CASE has taken everything good, from every professional development activity I have ever been involved in, applied to my classroom, gave me an opportunity to use it and understand it, then provided me a game plan to utilize it to improve my student's learning. Again, this could be planning, pedagogy, methods, materials, curriculum. You name it, CASE has got it.

CASE material is designed around activities, projects and problems.

are doing the same thing. Check out an average student's daily schedule today compared to that of 20 years ago. Every program is asking for more and more time every day and twice as much during breaks. Time has become one of the, if not, the most precious commodity that we have. So I had to decide if I wanted to spend two weeks in Ankeny, Iowa at Des Moines Area Community College to become certified in the CASE AFNR course last June (2011).

There were many reasons NOT to enroll in the course. The tuition, which my school paid for through Perkins funding, the cost of materials (grants and purchasing what we could at the time got us through), and many other reasons. There were also many reasons TO enroll, but in the end, I decided to give it a try.

I remember driving up to Ankeny that Sunday evening. I was on the cell phone trying to get rides lined up for kids going to district livestock judging that week. I was trying to arrange a side-dress applicator, figure

ever do this again. (OK, when this actually was going on, the language may have been a little stronger). Ten days later, as I was driving home, I was trying to figure out how to get the next year's CASE course fit into my schedule!

What happened in those 10 days of training? What changed my mind about giving up 10 days of the sacred month of June for another CASE Institute? Several people, agricultural teachers and other educators, have asked my opinion of CASE. I haven't

Busier than a long tailed cat in a room full of rocking chairs. I am sure the lead teachers at both CIs that I have attended had their schedules full also. Thankfully, they also decided to be involved. Both institutes that I attended had outstanding lead teachers. Marlene Mensch, Matt Eddy (the two lead teachers at CASE AFNR), Tim Ray and Sheridan Clinkscales (at CASE Plant Science) were all outstanding in helping me prepare to use the materials when I got back to my classroom. In "Standing on the



Ben Booth prepares a plant for a translocation and transpiration exercise. (photo by Matt Eddy)



Charlie Fitzgerald shows class members his slide on root cell differentiation. (photo by Matt Eddy)

Shoulders of Giants,” Marc Tucker voiced his concern about America’s teacher preparation compared to other countries that have surpassed us in education. If we prepared all of our teachers the way the lead teachers prepared us for the CASE courses, I think Mr. Tucker would be tickled! I sincerely believe that one reason the CASE courses are so effective is that the rigor begins with teacher preparation. Lead teachers at the institutes are there to share their knowledge, share their experiences and to PREPARE you to teach the course.

Busier than a bee. I sure didn’t want to spend 2 weeks (either year) just to get a binder full of “new” activities and I wasn’t disappointed! CASE material is designed around activities, projects and problems. After completing activities, students should have the same answer (or very close). Projects will have some similar solutions, but due to creativity and individual interest, will be somewhat diverse in what is turned in by the students. Problems may have a wide variety of solutions depending on the course of action a student or group of students want to take. Whether it

is an activity, project or problem, objectives and expectations are right there in front of the teacher and the students to see. The student-directed and inquiry-based philosophy puts me in the classroom to set up, engage students

and facilitate learning, not lecture or spew out information. The activities, projects and problems increase EVERY student’s learning. They don’t even realize the increased rigor and the work that they are doing. CASE lessons also constantly review and utilize earlier lessons to complete current lessons. This spiraling reinforces student learning throughout the course.

Busier than a one legged man in a butt kicking contest. Wouldn’t it be nice to have the time to align the national ag standards with the common core standards in math, science and English? Yes, CASE has done that for me also. The lessons do not just include math and science, but teaching math and science is part of the lesson! CASE is aligned with national AFNR, science, mathematics, and English standards for every lesson. Yes, I said every lesson! Combine these things with a teaching calendar, other resources and national certification, and planning becomes so simple, so easy, so fast and so effective!

What about the cost of tuition and the cost of the materials? Yes, there is a cost. However, I believe that once you have seen the benefits, you will find ways to finance the program. We have used grants and additional school funding to purchase part of the materials the first year. Last year for the AFNR course, we were able to purchase about one-half the equipment that CASE recommended. Essentially, we put together 5 lab stations instead of the recommended 10 and went to 3-4 students per station (group) instead of pairs. While I wish I could have used pairs, I think things went well. After implementing the program last year, I find myself writing more and more grants to purchase more and more of the equipment. Several grants later, I plan on purchasing the rest of the AFNR, plus what I need for the Plant Science course this year. This may take until after Christmas break, but eventually I think we will be able to fund all the materials.

Busier than a cat covering crap on concrete. 80 hours? Are you kidding me? In June? Get out of town! There is no way that I will be able to take another CASE course next year. I cannot afford to invest that much time again next year. Well, maybe I could flip a coin; heads I take Animal Science and tails I take Biotech! Either way, Pekin agriculture education students win!



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CASE: Positioning Agricultural Education as a Solution for School-wide Challenges

by Dan Jansen

How do we make agricultural education reach its full potential as a solution to school reform mandates and increased its utility as an alternative or enhancement to core academics such as science? The suggestions of models vary greatly from state to state, but RIGOR seems to be the common thread for positioning agricultural education as an important CTE subject area for our diverse school system of today.

Rigor is the common thread for positioning agricultural education in today's diverse school system.

The operational definition of rigor, in the context of academic rigor, requires students to demonstrate in-depth mastery of challenging tasks to develop cognitive skills through reflective thought, analysis, problem solving, evaluation, or creativity (International Center for Leadership in Education, 2012). Agricultural education provides tremendous real-life connections for students to find relevance for studying science. Whether it is career-focused outcomes, unfamiliar topics within engaging lessons, or the enhancement of core academic subjects presented in a rich context for students to grasp easier, students can easily find the motivation to learn in agriculture classes. The question should be asked if the level

of rigor is at high enough thresholds to provide help for school districts to meet school-wide goals of providing enough opportunities for students to meet the ever-growing demand of academic proficiency largely brought on by the STEM movement.

One of the big shifts that CASE promotes is the proper use of content. In today's age of technology, teachers have a wealth of content readily available. So do students for that matter. In fact, it can be argued that because of the diversity of agricultural education topics, there is too much content or

“stuff” available. Therefore, the challenge in front of the teacher is to prioritize the concepts that are important and then sift through the mountains of content to find the necessary and important materials to bring the subject matter to life in the agriculture classroom.

Too much “stuff” is problematic for instruction. If the teacher is not cautious of his or her design of curriculum or chooses resources promoting quantity over quality of information then serious threats to learning can result. Too much content promotes teaching concepts miles wide but only an inch deep. Shallow instruction encourages rote memorization of facts and figures rather than inquiry and problem solving. Students never

investigate content areas deep enough to understand intricate connections to inspire critical thinking.

Another problematic outcome of content overload is too much information that is crammed into short very disjointed modules that confuse students as they try to figure out how what was taught last week fits with current lessons. Disconnected modules will result in outcomes that do not lead the learner to a clear overall picture. This reduces the potential of students transferring concepts learned in the agriculture classroom to similar situations in other contexts. In either scenario the opportunity to increase rigorous learning outcomes are jeopardized or nonexistent.

CASE Program of Study Model

Program of study sequences are not just stacking courses together but providing overlapping instruction to promote higher level learning outcomes and engage students in a clear path of learning. CASE courses gradually take the student through a logical progression of instruction and in this progression gradually increase rigor. Each CASE course and Program of Study pathway has a big picture for students to discover as they work through the various pieces of that bigger puzzle.

CASE is not about just developing progressive courses in a logical pathway. The design detail for CASE courses starts with the daily activities and from the daily activities, careful thought is used in crafting the layout of the lessons, units, and courses fitting together in a Program of Study pathway. CASE limits the content,

the “stuff,” to only what students will need to address the essential concepts they should know and understand to learn the big picture of the subject. Students are pushed beyond simple knowledge of facts and figures. Instead, students develop understanding about how to use knowledge and skills. Once students have a strong foundation of knowledge and technical skill, they are challenged with open-ended problem solving activities to increase the rigor of the lesson. While this is happening in the mind of the student, they are also connecting the dots of what they have learned previously to develop a broader, more transferable understanding of the subject matter.

If a student truly understands the connections among all of the pieces of knowledge then they are able to transfer the lessons learned in the agriculture classroom to other contexts both in and away from the classroom. This level of instruction promotes true inquiry and critical thinking, which are the skills students need to be successful in college and careers. Agriculture has tremendous utility to develop understanding for transferability and critical thinking, but the pedagogical approach of courses must have a deliberate and careful design with the big picture in mind throughout the process.

As I mentioned previously, to achieve scaffolding for the sake of improving rigor, the approach is not simply putting two or more closely related courses together and calling it a pathway. It takes attention to detail by creating each course in that sequence of courses to be a logical progression towards a big picture. However, even more important is what happens in the daily classroom in terms of instructional strategies for a classroom full of diverse learning styles. CASE uses a balance of activity-, project-

and problem-based exercises to elevate instruction within the rich context of the subject matter. CASE instruction uses lecture sparingly to promote student-led discovery rather than didactic and teacher-led instruction.

CASE is created with these important aspects of curriculum design in place. Historically our teachers have been practicing in a content-driven culture where they find something great and plug it in wherever it seems to fit. It is understandable why this culture has persisted since in most school districts agricultural education is viewed as an elective subject and keeping students in the seats is imperative. Agriculture teachers have done what they needed to do in order to survive and keep their enrollments up to avoid teaching other subjects or having their programs cut. However, if teachers embrace a change in philosophy of creating rigorous courses that validate purposeful instruction related to STEM standards, the value of the program to the school system can be off the chart. Even more important than the value to the school is the value to the student for college and career readiness. Preparing students for the rigors they will face as a professional is the overall goal of agricultural education. Providing students with the tools to solve complex problems in an informational age full of “stuff” and encourage independent



Photo courtesy of Dr. Misty Lambert. (Dr. Lambert offers “Tips on Case Implementation” on page 18.)

thinking as they progress to careers after school is the focus of CASE.

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9 Tips from Teachers Who have Implemented CASE

by Misty D. Lambert and Kristopher M. Elliott

Recently, Oregon State University researchers spent a year investigating how five Oregon Agriculture teachers adapted to Curriculum for Agricultural Science Education (CASE) during the first year of implementing the curriculum. The experiences of those teachers may be beneficial as you find yourself thinking about or implementing CASE in your own classroom. Multiple interviews, a focus group, and weekly journals have been distilled into the following information and advice. The findings and recommendations are based solely on the teachers studied, but their experiences may help you navigate a totally new curriculum more efficiently.

1. Lessons are cross-walked with national standards for agriculture, science, math, and English language arts. This creates solid content for your courses. From CASE's website, we know that "each lesson plan contains teacher notes, PowerPoints®, student activity instructions, and assessments. Lessons are designed to provide everything the teacher needs at a click of the mouse." Many of our teachers reported that having these well planned lessons allowed them to focus on their teaching rather than hunting content for their courses.

2. Pacing is a challenge. All of the teachers in the study mentioned the curriculum was packed. While most did not think having too much information was a major problem, they were concerned about a students' ability to learn everything

from one CASE course to proceed to the next course properly prepared or to pass assessments and/or certifications. The teacher in our study that made it the farthest through the curriculum only completed 65% of the *Principals of Agricultural Science – Animal curriculum*. All teachers recommended CASE reduce the amount of material in each course and suggested other teachers modify and rearrange the units to fit their schedule. CASE lessons are for 175 class days at 55 minute periods. This will require modification by teachers on a block schedule as none of the teachers in our study were able to fit two CASE lessons into a block period on a regular basis.

3. CASE creates routines and consistency in your classroom. Every teacher mentioned how the students learned quickly what to expect in the classroom during each class period. Students quickly learned how to work through the CASE lesson format, becoming quickly self-sufficient in working through the activities, problems, and projects. CASE states their philosophy "is to empower the student by providing students an active role in their learning rather than learning being a product of teacher led instruction." This, however, may require the teacher to adapt to a more learner-centered classroom than

they may have had before.

4. Students will have to read. The curriculum is designed to have packets with background information, directions and steps for the activity, a project or problem and then a place for conclusion questions and discussion. Some of the teachers implementing the program indicated that students for whom English was not a first language struggled to do this reading independently. The results for students with Individualized Education Plans (IEP) appeared to be mixed. Some teachers thought students with an IEP did better by having written instructions in front of them. This packet even allowed them to use the resource room or independent study time to complete their work with less of a need for direction from the teacher. Other teachers in our study indicated that students with IEPs struggled to keep up with the pace of CASE when their work depended on reading directions independently. Most of the teachers overcame this with some group reading of directions before students moved off to work independently.



5. The CASE Institute appears to be effective. The CASE institute is an 80 hour training all teachers are required to complete for each CASE course they implement. All

CASE can make positive changes in your program.

of the teachers in our study talked about how attending the CASE institute prepared them to implement the curriculum unlike any professional development they have attended before. The teachers talked about how spending time working through the content during the Institute allowed them to anticipate where their students would struggle. Early studies have shown that there is a lasting impact on the teachers' self-efficacy, or their own perceived ability for science even one year after attending the CASE Institute.

6. CASE requires modification. The Powerpoints® are stripped down to just the essential information. Most teachers find they want to adapt them to add some flair. CASE lessons also come without interest approaches. Finally, the lessons are part of a national curriculum so the content is presented, but it is context-neutral to allow you to tailor to the agriculture in your area. Therefore, the plant science course can be taught whether you live in an area that produces dry land wheat or sugar beets.

7. Equipment and materials are essential to the implementation of CASE. The teachers in our study varied in their implementation of the CASE curriculum because they varied in the financial support they had to implement CASE. All of our teachers

attended the institute; however, while some had all of the equipment and consumables required to implement the courses as written, other teachers did not. Some had classroom access to computers while others did not. CASE lesson plans are written for class sizes of 20 stu-

dents. Some teachers were able to keep classes to this size while others were teaching 35 students at a time and having students work in larger groups.

8. Keeping a total program was a challenge during the initial year. Accommodations had to be made to find time and finances for the FFA, SAE, greenhouse and shop activities during the initial implementation of CASE. Some teachers mentioned that the start-up cost of implementing CASE exhausted their consumables budget, affecting the budget for shop and greenhouse operations. Many teachers were trying to keep up with the pace of CASE and did not use the greenhouse as many days. One teacher remarked that while CASE lessons include instruction on SAE and FFA, it is really up to the teacher to keep the three circles as big and functional as you want them.

9. CASE is paperwork and/or grading heavy. All of the teachers made comments about the paper load or the grading. Many even mentioned that their students saw CASE as busy work because there was a new packet of instructions on their desk almost every day. While each packet might contain one or two questions for the teacher to answer, many teachers struggled to keep up with that load, especially if implementing more than one CASE course. They also men-

tioned that the copy load for their CASE course was above the allocation they had for copies from their school or their district. While CASE works to solve this paper problem through technology, teachers considering the implementation of CASE should recognize the impact of the paper load.

While the teachers in the study did suggest that there were some initial challenges while implementing CASE, they also indicated positive aspects of the new curriculum as well. Being some of the first teachers to utilize CASE, their challenges will hopefully help guide you in your own attempts. Probably the biggest lesson learned was that CASE is a large initial investment of your time, resources, and your patience as you "customize" the curriculum to your own program. However, it appears that this investment in your students can begin to make positive changes in your program if you are willing to navigate the implementation process.



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Frequently Asked CASE Questions

by Marlene Mensch

CASE Institutes

What is included in the CASE Institute registration fee?

The CASE Institute registration fee includes all costs to attend an institute including all materials and facility use fees, lodging for the duration of the institute, and most meals during the institute.

Developing sustainable and lasting changes in your teaching style requires practice and application.

Some weekend meals may not be included. It also includes a one-time administrative fee to CASE that covers the costs of Lead Teacher Orientation, curriculum updates and revisions, and teacher services such as the CASE Store. CASE curriculum is available only with the professional development at a CASE Institute.

Why do I need to attend a nine day class, I know how to teach?

Professional development is key to the CASE model. Developing sustainable and lasting changes in your teaching style requires practice and application. CASE Institutes provide time to develop those changes in a supportive environment of peers.

At a CASE Institute, teachers participate in the course as students. They develop anchor projects and collect data to have background and sample results for laboratory activi-

ties. The time also allows teachers to work collaboratively with other participants and develop a network of peers to share with and ask questions of throughout the school year. Completing most activities, projects, and problems from the student point-of-view assists teachers in preparation, planning, facilitating, and evaluating students through the curriculum in their own classrooms months later. The personal experience assists teachers by giving them increased

capacity to empathize with their students, anticipate issues that may arise, and formulate strategies to include all diverse learners in their program. The nine-day format takes a 'one size fits most' curriculum and helps tailor it to every individual program and set of student needs.

If the course is updated, will I need to attend training again?

No, once you are certified as a CASE

teacher, you are certified for as long as you are teaching. In the future CASE may offer short, refresher courses after major revisions to a course. These will be optional, two to three day sessions that highlight changes in the curriculum.

When will the 2013 CASE Institute Sites be announced?

Dates and locations of 2013 CASE Institutes will be announced in late November or early December. Registration will open in early January. Be aware that some sites fill within one month of registration opening. Plan ahead and register early to insure your first choice in sites.

How can I find financial support to attend a CASE Institute?

Teachers have found many opportunities to fund their registration for CASE Institutes. Examples include Perkins monies dedicated to professional development, local and regional STEM grants, grants from state department of education and/



2012 CASE Lead Teachers at Lead Teacher Orientation. The Orientation is where lead teachers begin to prepare for CASE Institutes.

or agriculture, and donations from local interest groups. Local interest groups that may contribute include local Farm Bureau chapters, FFA alumni affiliates, and corporate sponsors. Consider asking several groups to provide matching donations.

Can I attend more than one institute each summer?

There is no limit to the number of institutes that you can attend in a summer. Your schedule, budget, and other responsibilities may be the limiting factor. Several teachers have attended two and even three institutes in one summer.

How can my state host an institute?

States are encouraged to use a Team Ag Ed approach when hosting a CASE Institute. Work with state leaders and university agricultural education staff to determine a location and dates that are accessible to the most teachers in your state. A CASE Institute Host Planning Guide is available each fall on the CASE website. Review the planning guide, determine who will be responsible for each aspect of hosting, and submit an application to host.

CASE Implementation

Which course should I implement in my program first?

CASE recommends implementing the *Introduction to Agriculture, Food, and Natural Resources* course first. This introductory course is designed for freshman and teaches key science process, communication, and team work skills utilized in all higher level CASE courses. It also provides a foundation in student-directed and inquiry-based learning. The skills and knowledge developed in the introductory course are critical to implementing a rigorous sequence of courses and developing higher order thinking

and problem solving skills.

Is each course a standalone course, or can it replace the current curricula I am using for freshmen, sophomores, etc.?

CASE courses are designed to be offered in a Program of Study, meaning that they build upon each other. Yet many can replace current offerings, for instance *Introduction to Agriculture, Food, and Natural Resources* can replace traditional Ag I, Intro to Ag, Foundations of Ag courses while *Principles of Agricultural Science – Animal* may replace Animal Science.

While CASE is developing a Programs of Study with four sequences, most schools will offer only one of those four programs. A school in an area that emphasizes horticultural production may offer only the Plant Pathway and continue to offer more specialized menu courses such as Landscape and Greenhouse Management.

How much work will I have to do to make the curriculum fit into my program?

Many teachers teach the curriculum as written during their first year of implementation. After teaching it for a year, they may choose to



Teachers at the Principles of Agricultural Science – Animal Institute hosted by Texas Tech University exploring fetal pig dissection.

make some modifications to fit their program. The curriculum is aligned to national standards for agriculture, science, mathematics, and English Language Arts. While some schools require aligning to state standards, many will accept the national standards. Work with other teachers in your state for state standards. Lesson plans are included for each lesson and include concepts, performance objectives, standards, essential questions, vocabulary, and day-to-day plans. The time you invest as a teacher tends to be focused more on preparing physical materials for instruction rather than developing engaging activities.

Do I have to create anything extra - worksheets, power points, activities, etc?

Each course in the CASE program contains all materials needed to teach the course. All activities are written to the student and designed to be given directly to them. When needed for background information, PowerPoint® presentations are included as well as detailed instructions for the teacher on how to set up and

prepare laboratories. Other handouts and supplemental materials such as notecards and student templates are also included. All of these materials are available in a format so the teacher can modify if they feel the need.

How much does CASE limit FFA and SAE since there is such an emphasis on science?

CASE curriculum is flexible enough to insert work time or mini lessons about FFA and SAE as needed or as appropriate. Teachers who used to have a regular time each week, for example FFA Fridays, still have that dedicated time. CASE augments those programs with extensions on each lesson that can be SAE project ideas that students may not have thought about otherwise.

Will standards be aligned with the Common Core?

Yes, as the Common Core State Standards are released and as CASE courses are revised, they are aligned to the Common Core State Standards. Currently, *Principles of Agricultural*

Science – Animal, Principles of Agricultural Science – Plant, and Animal and Plant Biotechnology are aligned to the Common Core State Standards for English Language Arts and High School Mathematics. The Next Generation Science Education Standards have not yet been released, but when they are CASE courses will be aligned as revisions occur.

What if I can't purchase all the materials at once? Do I have to buy all the kits or use the purchasing guide?

The CASE purchase manuals are provided as a service to teachers. The intent is to make ordering easier and more time efficient for teachers. If your school prefers other vendors or already has materials on hand, you may choose a different route of procuring supplies. Do be mindful that CASE courses are hands-on and student-directed, limiting materials too much will impact the success of your students.

If you are on a tight budget and cannot afford everything in one year,

consider having students work in larger groups and order fewer items. Build up your equipment over a period of years. The Lead Teachers at CASE Institutes will assist you in developing strategies to order materials based on several budget scenarios.

What if I can only teach this one semester?

School schedules are a tricky thing. The weekly schedule, length of class periods, and days of student contact all impact how long it will take to teach the course. CASE courses are designed to be year-long courses based on a 45 minute class period meeting five days per week. We realize there are too many variations of school calendars to count. Depending on your schedule and length of class, one semester may contain the same amount of student contact time. If not, you can choose to modify the course to fit the time you have with students.

Does CASE offer certification?

Currently, CASE only offers teacher certification. As pathways are completed and there are programs of study in place, certification of students and programs will be implemented. CASE is still in the development phase of specialization and capstone courses and until those are completed, student and program level certification remains on hold.



Marlene Mensch is currently the Curriculum Director for CASE. Prior to her assignment with CASE, she taught high school agriculture in Oregon.

Upcoming Theme

November - December

Successful Programs and Their Traditions

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

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10 Ways Agriculture Teachers Can Use Technology for High Yields

by Chester Mummau

Do you remember manual or electric typewriters, 16 mm movie projectors, chalkboards, and those ditto machines with the heavy ink smell? If you have been an educator for more than two decades, then you can remember the sounds and smells of those tools of the trade. Now that we are beginning the second decade of a new century, the Internet along with other technology has rocked our world.

Are you using technology for high yields in your agricultural education program? In the format “*The Late Show*” host David Letterman made famous, here are 10 reasons to use technology in your agriculture program.

10. Public relations – Because it is expedient and efficient to get digital pictures to the local newspaper, school newspaper, and the yearbook staff all in one email!
9. Safety tests – Because computers give instant feedback and save a teacher hours!
8. Organization and Planning – Because a Google calendar doesn’t forget!
7. Cell Phone - Because it is much easier to find a lost student at the state fair!
6. SAE records – Because pencils, erasers, and hand-held calculators are so yesterday!
5. Chapter management – Because sorting student names on the FFA roster is much easier!

4. Program management – Because it makes taking program inventory more fun!
3. Fundraising - Because counting the money for oranges, meat snacks, and peanuts can be done much faster!
2. Instruction – Because this generation of students is tech savvy and technology keeps them engaged!

... and the number 1 reason to use technology in your agriculture program is ...

1. Communication – Because agriculture teachers get tired of folks saying “I didn’t know.”

Yes, I agree, I should leave the comedy to Dave Letterman and his staff! I am fortunate to work in a school district that has embraced new technology and has a dedicated technology department that works tirelessly to install, upgrade, and maintain the district network and its features. I work in Spotsylvania County, Virginia, which is also known as the “crossroads of the Civil War.” Our district has over 24,000 students and 9 agriculture instructors in 5 high schools. We collaborate periodically on best practices and technology usage is often a topic of conversation.

Below are some ideas to use technology to improve your efficiency and program quality if you are not already doing so.

Communication

Are you using technology to communicate with your students, parents, colleagues, building administrators, district administrators, and program

supporters? Our district allows student and parent access to grades online via a program titled PASS (Parent Access for Student Success). As parents setup their login user name and password they also provide their email address. Teachers can then send an email blast to every parent or guardian of a student in a class or all classes with several clicks of a mouse and keyboard. This has been a great tool for efficiency and speed! What better way to let parents know the citrus sale is ending and we’d still like to sell a few more boxes?

We are also able to send an email blast to each of our students through an online system too. What better way to remind students about field trips, CDE events, fundraisers, assignments and application deadlines? There is no photocopying and students can access the site both in school and outside of school.

Virginia has a listserv which is a well-used tool for communication among all agriculture educators in the state. It is used to share instructional ideas, FFA event dates and information, professional development opportunities, and agriculture news around the state. If you have not subscribed to a listserv or a similar tool in your state, please check into it. The old saying, “things come to those on mailing lists” still rings true!

Instruction

Are you using the technology of the last decade in your daily instruction? Our district has an online program titled SCORE (Spotsylvania County Online Resource for Education) that is a spin-off of the ANGEL software (<http://www.blackboard>).

com/Teaching-Learning/Learn-Resources/ANGEL-Edition.aspx). This same company produces the *Blackboard* program used in many post-secondary programs. With SCORE we are able to provide online lessons for students, post announcements, post calendar dates, and give online assessments. With 24/7 access, this is also an excellent tool to provide lessons or makeup assignments to students who are absent, to those

agriculture! Students build their vocabulary and understanding of current agriculture issues in a very user friendly format. If only I had this resource 24 years ago during my first year of teaching!!

With the retirement of the 16 mm projectors and filmstrip projectors, we now use relevant DVDs and video clips to enhance student understanding. I often use short clips from network news organizations about

practices. I am integrating this into my teaching calendar this school year and I suspect students will be very receptive to using them.

Fundraising

Are you using Microsoft's *Excel* or *Access* programs to tabulate fundraising totals? These programs can also be used to sort and select for determining the rank order of student sales, prepare delivery lists, etc. We work with Florida Indian River Groves of Vero Beach, Florida for our citrus sales. They provide an online order form customized to our chapter where purchasers can use their credit card for payment. Students simply need to send the web address (URL) to relatives and friends.

Program Management

Think of all those tasks that we do annually to keep our program operating such as inventory documentation, purchase orders, field trip forms, FFA member rosters, award rosters, and equipment manuals. Using Microsoft's *Word*, *Excel*, or *Access* programs can greatly increase efficiency. We currently send all purchase order requests to our school bookkeeper electronically. Once she prepares the purchase order and obtains our principal's signature, she scans the document into an email and sends it to us. Often times we can forward the email directly to the vendor or enter the purchase order number into an online order form and not have to print the purchase order.

Chapter Management

With the continued enhancement and increased speed of the Internet, more and more things are completed online. It is now commonplace to order jackets and awards from the National FFA headquarters in Indianapolis, submit FFA membership rosters to the state office, register groups

Using technology in your agriculture program is a gradual process of transition and adjustment.

receiving homebound instruction due to injury or illness, and those students serving in-school or out-of-school suspension. The number of photocopies made in our district has decreased dramatically as more and more teachers embrace this new technology. Creating benchmark, mid-term, and final exams is much more efficient by using this technology. An item analysis of test questions can be completed easily and appropriate action can be taken to make instructional adjustments.

Are you using a classroom set of desktop or laptop computers for instruction? We use COWS (Computers on Wheels) which is a cart of 28 wireless laptops. Students are able to access the internet to research agriculture topics and the assignments are saved in a repository in SCORE. My students are very familiar with the AgEd.net website, <http://www.agednet.com> which is produced by the Stewart-Peterson, Inc. company based in Westbend, Wisconsin. Wow! What a great resource for agricultural lesson content and the latest news in

current agriculture issues to generate discussion and to link the issue to students' prior knowledge base. Have you checked out the National FFA's "School Tube" videos on their website? This school year, a *SMARTBOARD* was installed in every classroom in our district to allow teachers to further integrate technology into instruction and to further engage students.

We use electronic gradebook software titled *Integrate Pro* to track grades, attendance, and student notes. This software is linked to the online PASS system mentioned above for student and parent viewing. Teachers no longer use calculators to average grades, separate report cards that were done in triplicate, or write handwritten notes to parents. An analysis of the grades for a class or student can be completed with a few clicks of a mouse.

I received training at our summer professional development conference in using handheld GPS units for teaching precision agriculture

for field trips, request transportation reservations, and complete award applications online. A chapter webpage serves as both a public relations tool and another avenue of communication.

SAE Records

What better way for a student to maintain and archive Supervised Agricultural Experience records than via technology? The trips to the copy machine and using a calculator to double check the rows and columns of numbers are no longer necessary with the use of computer software.

Cell Phone

Data from the Bureau of Labor Statistics' Consumer Expenditure Survey (CE) show that cellular phone expenditures increased rapidly from 2001 through 2007. Cellular phone expenditures surpassed spending on residential landline phone services beginning in 2007" (2009). It is difficult to imagine how we managed trips to the State Fair, State and National FFA Conventions, and other field trips without a cell phone. Whether you are using a basic cell phone, a *Blackberry*, or an *Apple iphone*, your cell phone is a great time-management tool to contact parents, vendors, and program supporters.

Safety Tests

As any agricultural educator knows, each student must demonstrate his or her knowledge and understanding of safety practices and the safe operation of any machine used in the lab. Grading safety tests can be mind-numbing for the teacher and hence technology can assist with the grading. We now use the SCORE software mentioned above to post safety tests, which provides students immediate feedback and the scores are recorded instantaneously. Students are permitted to re-take the test

online until they achieve a 100% pass rate. Of course you'll also need students to perform an operational skill test for each machine and require authentic assessments to ensure they can safely operate each machine.

Organization and Planning

Are you using an electronic calendar such as the *Google* calendar or *Microsoft Outlook* calendar? This is a great way to schedule your appointments and tasks from your office desktop or handheld computer and you'll receive email reminders and alerts if needed. A flash drive is another excellent tool to help with organization as it allows one to store documents or presentations and transport them very easily.

Public Relations

Do you remember the days of using Polaroid cameras or taking rolls of film to a local store to be processed so a photograph could be sent to the local newspaper? A quality digital camera is well worth the investment. Pictures can be downloaded and posted on the chapter website, sent to the local newspaper, sent to the *FFA New Horizons* magazine, or the school yearbook staff very efficiently and expeditiously. Pictures can later be used to create an animated looping picture show with software such as *Photostory* or other similar programs for use with recruitment efforts and for the chapter banquet.

As a former school administrator for 12 years, I would be remiss in not sharing the caveat to use technology with good judgment. Emails and other electronic documents can be subpoenaed for court proceedings and requested for viewing by the general public under the *Freedom of Information Act* and the *Right to Know* laws. There are times when face-to-face meetings are still critical and technology should not be used as the com-

munication vehicle. As professional educators, we must also use superb judgment in regard to using websites such as the very popular *Facebook*, *YouTube*, and *Twitter* and responding to texts, calls, or email from students. Just as we do in our daily instruction, we must be able to determine the best method or tools to use to accomplish our goals and objectives. However, these caveats should not be deterrents to using technology for high yields in our daily work and programs.

Michael Fullan, the author of the well-read book, *The New Meaning of Educational Change*, so eloquently wrote, "Change is a process, not an event." This rings true in regard to using technology in your agriculture program too! It is a gradual process of transition and adjustment. Which of the many technology tools are you using to improve your yield?

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Dr. Chester Mummau, a former principal, returned to teaching Agricultural Science & Technology at Courtland High School in Spotsylvania, Virginia for 4 years. He is currently superintendent for the Wyalusing Area School District, PA.

The Agricultural Education Magazine

2013 Themes

January February

Urban Agricultural Education

In 1988 the authors of *Understanding Agriculture: New Directions for Education* challenged the profession to establish “specialized magnet high schools for the agriculture sciences in major urban and suburban areas.” This issue of *The Agricultural Education Magazine* will focus on the progress the profession has made over the last twenty-four years in offering urban agricultural education programs, examine ways current programs can be strengthened, and offer suggestions for starting new ones.

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March April

Using Agriculture to Teach STEM

Today the demand is for more high school graduates educated in the principles of STEM (Science, Technology, Engineering and Math). For years agricultural education has used concepts from the agriculture industry to educate its students in the principles of STEM. Agriculture is the ultimate vehicle to educate students in STEM. This issue will focus on innovative ways agricultural education teachers are incorporating STEM concepts in their day to day teaching activities.

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May June

What We Learn from Research about “Teaching Agriculture”

This issue is designed for authors of articles published in the *Journal of Agricultural Education* and/or presented at a regional or national research conferences. Articles must be specifically written to describe the new knowledge (the facts – Findings) generated by an investigation and how the knowledge generated contributes or applies to teaching and learning in the classroom, laboratory, or in supervised occupation experience programs. The authors must demonstrate how and why the new knowledge they have generated should be put into practice to improve teaching and learning, guide the administration and supervision of instruction in or for agriculture in public schools, or inform policy and program development for agricultural education. To be considered for publication, the articles must be written for practicing teachers. Manuscripts should be written from a “consumer of research” perspective, significantly different from the typical manuscript submitted to the *Journal of Agricultural Education* or a regional or national AAAE conference.”

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July August

Stories About Teaching and Learning

This issue will be dedicated to a series of stories (vignettes) written by practicing teachers – or graduate students and professors – telling a story that describes an experience in teaching in the classroom, laboratory, or supervised practice; describing an administration or relationship situation involving school administrators or colleague faculty members; or any other situation that illustrates successful endeavors and experiences. Emphasis will be placed on descriptions of real situations and experiences that demonstrate effective and acceptable practices and policies. For examples of the type of vignettes solicited for this issue refer to pages 25 and 72-73 of *Methods of Teaching Agriculture* (Newcomb, McCracken, Warmbrod, and Whittington – Third Edition). Articles should include an explanation why the activities described were successful or not.

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September October

Agricultural Education Magazine Potpourri

Many times potential ideas for articles do not fit the proposed themes. In 2012 an “open” theme issue was conducted. The Potpourri issue was a complete success. In 2013 you will have another opportunity to submit 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:

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November December

Keeping the Home Fires Burning

Articles in *The Agricultural Education Magazine* often concentrate on students and the teachers who serve them. Agricultural education programs cannot be successful without the dedicated efforts of its teacher. In many situations there is a “significant other” who makes numerous sacrifices that allow the teacher to devote the endless efforts to the teaching position. This individual often manages the home, serves as a parent, and provides support so the teacher can devote endless hours to providing educational opportunities for his/her students. It can be challenging to “give up the other half” for the numerous evening/night meetings, preparing for contests, practicing showmanship, and working crazy hours at local fairs. This issue will be written by and devoted to the indi-

viduals behind the agricultural education teachers who keep “the home fires burning.”

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***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.**
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 free copy of the journal along with a letter of congratulations. Additional copies of *The Magazine* may be available from the Business Manager.

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