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**INNOVATIVE MIDDLE SCHOOL
AGRICULTURAL EDUCATION PROGRAMS**

Innovative Middle School Programs

In 1988 the Committee on Agricultural Education in Secondary Schools, National Research Council recommended that all students should receive instruction about agriculture. Twenty-three years later we are still working on the implementation of this recommendation. Middle school agricultural education programs have provided a successful start to the effort.

In addition to the instruction about agriculture (or agriculture literacy), middle school programs can

be a valuable addition to a traditional agricultural education program. In addition to providing a context to teach math, science, technology and a dynamic teaching and learning environment, middle school programs can be a valuable recruitment effort for the senior high program.

This issue is packed full (the reason for the short editorial) of suggestions from successful middle school teachers on the implementation and use of agricultural education in the middle school environment. Enjoy.



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

THEME ARTICLE

FFA in Middle School

by Liz Moore

Middle School students are extremely indecisive creatures. We hop from one club to the next, testing each one to see if it is right for us. We try Newspaper Club, Soccer, Bowling, Yearbook, Volleyball, Drama Club, Football, Track, Baseball, Cooking Club, Gymnastics and, of course, High Honor Rock and Roll Band. Most people eventually find their niche, but for some, the best thing to be doing after school isn't baking brownies or rolling a ball at some pins. Some lucky students find their place in an FFA Chapter.

So what exactly do we do during FFA? Well, my chapter is pretty similar to the high school FFA chapter, except we aren't as actively involved in the community. We spend most of our time doing things to prepare for State Convention.

My fellow chapter members get very excited about their Career De-

velopment Events (CDEs), spending a lot of time practicing and preparing. The boys (and some girls) get animated about tool identification. I don't understand the joy in handling a screwdriver, but they don't understand why my friends and I love to write our speeches. I suppose if we didn't have people who liked to do different things, then there wouldn't be so many CDEs.

When we aren't getting ready for our competitions, we are usually discussing different issues in agriculture. Some of us contribute more to the conversation than others, but everyone usually expresses their own opinions. We talk about things like Monsanto and new technologies. Sometimes we disagree, but that's why debates are useful.

Last year, my chapter had a blast going to the FFA State convention. It was held in the college in my town, so we could have walked, but we didn't really feel like trekking through town in our official dress.

Once we got there, we figured out where and when our events were. Our advisor's daughter stayed with my group. I thought it all went pretty smoothly. My friends had a lot of fun at the career show, exploring all of the different agriculture businesses and activities. My friends did pretty well in their CDEs and we were all so proud of each other. We can't wait for the convention this year.

Of all the clubs my school has to offer, FFA is definitely my favorite.



Liz Moore is a student at Cobleskill-Richmondville Middle School and the daughter of Dr. Donna Moore, the March-April Theme Editor.

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What is the Value of Innovative Middle School Programs in Agricultural Education?

by Donna Moore

Like the authors in this issue, I believe the middle school classes in my agricultural education program were critical to building and sustaining my high school courses for our small rural community. Located in upstate New York, the school in which I taught required all eighth grade students to complete a ten week agriculture technology course. Like the other teachers who share their experiences in this issue, I found the eighth grade students to be highly energetic and willing to explore technology innovations through an agriculture context. As teachers will state in the coming pages, the exposure of students to agriculture curriculum and opportunities to participate in middle school FFA and Career Development Events served as valuable means to help students understand the spectrum of career opportunities and fields of study in agricultural education.

We begin this issue with a few words from a middle school student's perspective. Her insight into the exploratory and social nature of this age group of children is further examined in the article, *Minds in the Middle*. Her enthusiasm and candied reflection on the variety of interests she and her peers demonstrate in the CDE and FFA events reinforces the stories and examples that are shared in *CDE Excitement for Junior High Members*. As this young FFA public speaker articulates very clearly, she and her peers are at an age where they are exploring their world through trial and error as they move through club and sport experiences. This is a point in their lives where they want an opportunity to be exposed to new

opportunities. The time is ripe for showcasing the opportunities in the agriculture industry.

Not all middle school curriculums look the same and this is showcased in articles throughout this issue. Two authors take the time to share their work with modular based curriculum and the value they place on designing classroom experiences that integrate traditional and non-traditional teaching methods. In the articles entitled *Going the Extra Mile: Giving Middle School Students Outside the Classroom Experience*, *Tapping in to the Enthusiasm*, and *Modern Technology in Idaho Agricultural Education Programs* you will read about the many different ways teachers are working to provide innovative learning experiences for their middle school age students. To finance these various learning experiences teachers have had to look for external funding sources. In *Funding Engaging Projects for Middle School Classes* you will read how one innovative Virginia agricultural education teacher has solved this challenge for her program. Of course innovative curriculum and hands-on projects are not easy for a teacher to develop all by themselves. In Virginia the middle school teachers have developed an informal planning group that organizes an annual middle school teacher professional development conference. You may read about how this event has developed in the article: *By Teachers, For Teachers*.

An issue about middle school agricultural education programs would not be complete without some attention to the leadership development opportunities that are woven into the curriculum for these students. The

early leadership development experiences offered to middle school students, in particular an opportunity to for students to assume roles as chapter officers, gives students an early start to their involvement in high school. This issue provides two articles: *The Makings of a Strong FFA Officer Team* and *Your Duties There* in which teachers share the work they are doing to build young leaders. In contrast, the article *Middle Schools, Summer Camps, and Ag Education Recruitment* provides reflection on the leadership opportunities offered to all student through summer camping programs for middle school age students.

The enthusiasm of middle school agricultural education teachers is evident in the words they share in this issue. Middle school age youth are energetic and inquisitive; it is exciting to read the stories teachers share here about the learning experiences they are offering their young students. I thank of the middle school teachers who have taken the time out from planning for their busy classrooms to share their experiences and ideas with our profession.



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Your Duties There?

by Jamie Harvey

The officer team is the backbone of any good organization. Without it, there would be no leadership and little, if any, direction of the organization. The FFA is certainly no stranger to this concept and it has taken great pride in preparing our high school and state officers for their roles as officers. But, why start so late? Why not start when they first enter the Agriscience classroom and FFA?

Park View Middle School's FFA has taken large leaps in preparing our middle school officers to lead as well as their high school counterparts. In the past our officer team has been chosen based on their popularity and without much thought of what they will be required to do. However, they are now put through an application and interview process. Next, they are held to a high academic and behavioral standards. Finally, they are required to attend monthly officer and general business meetings as well as any extra activities in which the chapter participates. They are, in short, required to make FFA their priority. They may be in other extracurricular activities, but they must be dedicated to the FFA and their position as an officer.

The application is a simple questionnaire that asks them basic questions such as: which officer position they are interested in and what other school obligations they may have. These are simple questions that give me, the advisor, and the other interviewers some basic information about who the student is and how serious he or she may be about becoming an officer. For some students this is the first time they have ever had to fill out an application for anything. This helps them to get ready for the

seriousness of the upcoming interview. These questions include:

- Why do you want to be an FFA officer?
- Why do you think you would be the best person for this position?
- What other school activities do you participate in?
- Have you ever been in FFA before? and
- How do you think you could change FFA for the better this upcoming year?

The students sign up for an interview time at the time they turn in the application.

Interviews are a new addition to the officer selection process this year. Students sign up for a time slot after school hours when they will be interviewed by the advisor, past FFA officers, and a panel of teachers who have taught the students before or are currently teaching them. We explain to the interviewee that if he or she misses the interview he or she will not be offered another chance unless the absence was an emergency. For most of my students, this is their first experience with an interview and they tend to be a little nervous.

However, the application questions have given them a hint of what types of questions may be asked during the interview. The interviews are more casual than a high school interview may be due to the fact that these students are new to the whole interview process. As a general rule, the students do very well with their interviews and give honest and intelligent answers. The types of questions that officer candidates may face are listed below along with reasons these ques-

tions are asked of Middle School FFA officers.

- 1) "If you are chosen to be an FFA officer, how will you uphold the standards of grades and being a role model to other students?" We ask this question to our potential officers to get an understanding of how seriously they take being a leader and an officer. Also, this question allows us a chance to impress upon future officers the importance of maintaining good grades. If they are not students in good academic and behavioral standing, then they cannot participate in FFA events.
- 2) "If you are involved in other school activities how will you be able to fulfill the responsibilities to those activities and FFA?" Other extracurricular activities are good. However, we want to make sure that our officers are not spreading themselves too thin. We want to make sure that our officer team members can be at events and can give FFA their highest priority. We don't discourage members from being involved in other organizations, we just want our officers committed.
- 3) "In your opinion how important is participation from the officer team in outside of school events?" This question allows us to see how much we can depend on our officer team to lead by example. We can plan to have all kinds of events, but if our officers are not willing to participate, then likely the rest of the club will not either.
- 4) "How do you think you can help to get other students interested in being a part of the FFA?" Promoting our club is what helps us

grow, and the best promotion is the good feelings and words of our current members and officers.

5) "Are you willing to put in extra time after school and on weekends for officer meetings and outside of school events? If so, is transportation going to be an issue?" We want to make sure that our officers can come to the things they help plan and put into action. I know that at the high school level this may not be an issue due to the fact that many of your students can drive. Unfortunately, at the middle school level, whether a student can be involved with activities or the officer team, depends on someone else being able to give them a ride. A student may be a prime candidate for an officer position, but if they are unable to stay after school for meetings and make it to events, then they will not be able to do the chapter much good. After the interview process is over, the panel of interviewers make a decision on which person is best for each officer role and that is only the beginning of this officer journey for six lucky students.

During the course of their term, the officer team has to meet three times a month. They are required to hold an Officer Meeting once a month to plan the chapter's activities

and prepare themselves for the upcoming FFA chapter meeting. They are required to attend the General FFA Business Meeting and an Activities Meeting each month. At the General FFA Business Meeting, the officers run the show. That is why they meet beforehand to make sure they are organized, and can communicate everything that is happening and has been planned to the general FFA membership. The students run the meeting using proper opening and closing ceremonies and proper parliamentary procedures. A separate committee handles the second meeting of the month but the officers are required to attend unless they have made other arrangements.

Finally, members of the officer team, as well as other members, are required to maintain a 77 or better average in every class during the school year. If a student cannot meet these academic requirements at some point, then they are given a two week suspension from FFA activities. The reason for this suspension is to allow for more time to be given to their studies so students can bring up the suffering grade.

The officer team has to set an example of good behavior as well. If an officer is given a referral, then they are given a two week suspension from FFA activities. If that referral leads to a school suspension, they are suspended from FFA for three weeks

upon their return to school. If an FFA officer is suspended from the FFA three times, he or she is put on probation. During the three week probation the student must turn in a report from each teacher twice a week on his or her behavior and class work. We make officers aware of this when they apply for the position and they are expected to maintain these standards for their entire term.

Park View Middle School FFA works hard to make sure that its officer team is molded into the best set of leaders possible. Also, while they are helping to lead the FFA they are gaining skills that will assist them in the future. They are learning to put school first, to prioritize their activities, to manage time, and to lead by example. During our FFA officer meetings, the officers do some team building exercises and throughout the year, they become like a little family and learn to depend on one another and grow together.



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Upcoming Themes for *The Agricultural Education Magazine*

July-August: Maintaining an Adequate Supply of Agricultural Education Teachers

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September-October: Keeping Up-to-Date: Professional Development Opportunities for Agricultural Education Teachers

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Funding Engaging Projects for Middle School Classes

by Teresa Lindberg

In one unit of my eighth grade Agriscience Natural Resources class, we focus on water and water quality as students learn about water, rivers and watersheds. As a middle school teacher, I realize that students who experience a hands-on approach usually gain a better understanding of whatever they are studying. Therefore, I decided to conduct an on-site workshop dealing with the water quality of a river to teach the students about the impact that a river has on a watershed. I contacted my local soil and water conservation educational consultant who suggested using the water monitoring program they sponsor. They supplied students with all necessary equipment and supplies. The program was set for a Saturday, held on-site at the Nottoway River, and had fifteen participants. The program usually takes two hours to complete but we had to “chase” them home after three hours.

The interest and enthusiasm in this program was so high that I decided to research the cost of materials and supplies needed in order to offer this experience to more students. I obtained a \$500 grant entitled “Snapshot of a River” which focused on an introduction to freshwater ecosystems by using a virtual watershed and hands-on activities to instruct students about stream ecology, water quality and human impact a watershed. The unit concluded with the eighth grade students taking a field trip to the Nottoway River and working in conjunction with the Soil and Water Conservation District personnel. The students were responsible for conducting experiments on the river’s pH, acidity, alkalinity, temperature, carbon dioxide, dissolved oxygen, nitrate, phosphate, hardness, turbid-

ity and conductivity/TDS levels. The students also collected, sorted, and counted macroinvertebrates according to their pollution tolerance. The next school day the students analyzed the river data in order to get a “snapshot” of the Nottoway River’s overall health during that particular time period. They evaluated their experience and listed ways to improve the hands-on experience. Their suggestion was to increase the length of time spent at the river and increase the amount of data collected. This sent me on a quest, not only to expand the unit, but to look for another grant.

I was able to find and obtain a grant for “The Connection,” an introduction to soil and its role in an ecosystem. Once again, the grant incorporated hands-on activities to instruct students about soil properties, soil erosion, and how these things can affect not only the quality of the soil but the watershed as well. I integrated English, science and art into the unit to provide an interdisciplinary approach and allow teachers from these subject areas to accompany us on the field trip to the Nottoway River. The field trip was held during the school day to ensure that all eighth grade agriscience students had the opportunity to attend and participate. The teams of students were broken up into four stations: station 1 was a descriptive writing activity, station 2 was an artistic physical representation of the river, station 3 was a demonstration of a watershed using a model, and station 4 was collecting, sorting, and identifying macroinvertebrates. After lunch, the teams conducted river experiments which included: pH, acidity, alkalinity, temperature, carbon dioxide, dissolved oxygen, nitrate, phosphate, hardness, and turbidity. These experiments were followed by soil experiments which included:

pH, nitrogen, phosphorous, potassium, temperature, and soil content in water. Upon their return to school, the students formulated, analyzed, compared, and contrasted their findings in order to determine the impact of the relationship. I shared this information and the students’ evaluations with the soil and water district. The positive evaluations, student enjoyment, and impact on student learning led to the continuation of these activities.

This year, I completed another grant entitled “The Connection Continues” which will contain all the components of the previous grant and add the use of Global Positioning Systems (GPS) for the collection of data. The field trip to the Nottoway River will be the cumulating activity of these lessons with the student teams completing the four stations, conducting soil and river experiments, and using GPS experiments and units to document the data collection sites for the water and soil experiments. I am entering my fourth year for this activity and one of the first questions that I am asked by students entering the eighth grade agriscience class, “When do we get to go to the river?” This on site field experience has allowed me the opportunity to expose students to real-world experiences and give the students a chance to observe, test, and analyze data they have collected.



Teresa Lindberg is an Agriculture Teacher at Edward W. Wyatt Middle School, Emporia, Virginia.

Computer Modules in Action

by Lorinda Whitlow

Imagine walking in to a classroom and seeing students grouped together in teams, engaged in various projects around the room. One group is busy testing the pH of soil samples while another is comparing monocots and dicots based on slides they observed on digital microscopes. A third group of students is assembling a mouse maze. After talking with them, you learn they are conducting an experiment to measure the effects of diet on the navigational performance of mice within a maze. All around the room, students are using computers and other forms of technology. Some are watching video clips and others are taking electronic tests. While you acknowledge much chatter, it is clear the students' talk relates to the projects being completed.

This is not a dream, but a brief glimpse of my middle school agriscience classroom during the few weeks my students engage in modular learning, a form of computer-aided instruction. No big deal, right? After all, you may be familiar with middle school agriscience classes of this type. Maybe you use modules in your own program and you are familiar with how they work. Unfortunately, some educators consider modules to be the dreamchild of a lazy teacher. Over the years, I have endured much criticism from colleagues over my choice to incorporate modules. Many feel using modules within instruction is not "real teaching" and is detrimental to agricultural education. Whichever side of the module "fence" you may reside, my hope is to show that integrating modules can be beneficial to instruction, and can hold a valid place in any agriculture program.

Like many of you, I believe students learn best when they are engaged in hands-on activities. Also, I believe social interaction, problem solving, and teamwork are key components to learning. In many ways, I view myself a facilitator in my classroom. I try to stir interest and questions in the hope that my students will bite on the carrot that I dangle in front of them. I recognize the social nature and energy inherent in middle school students as an advantage in the classroom as well.

Today's middle school students are also technology natives. They were born into a world with computers, internet, cell phones and electronic games. Social networking and texting are the norms. Information is available immediately (both accurate and inaccurate). Thus, today's teachers must be more creative when trying to engage students. We must create a learning environment that allows for self-discovery, group exploration and problem solving while appropriately incorporating the technology students crave. We must keep in mind technology is integral to workplace success in a multitude of careers. We must prepare our students for the technologically saturated workforce they will soon encounter. As a technology guru I jumped at the chance to incorporate modules into my program.

Soon after I decided to add agricultural modules, I was dismayed to learn many colleagues viewed modules as a lazy teacher's dream. Friends were quick to share stories of teachers with modules who simply "babysit" kids in their classrooms. Some people even commented that if modules were here to stay, it would mean the end of agriculture teachers, after all, anyone could supervise

students in a computer lab setting. I began a mission to learn as much as I could about the various modules marketed to agriculture programs. I contacted companies and met with sales representatives. I contacted the teachers who utilized modules and I interviewed them. I took professional days to observe teachers who had modules. Far from lazy, they were constantly on the go, moving around the room, interacting with students, facilitating discussions, and helping students to problem solve. In a sense, they were doing exactly what I strived to do in my classroom already.

It took a few years, but eventually, I had the modules. Over time, I learned how to incorporate them into my program while striking a balance between traditional instruction and the computer-based instruction. So, what are the benefits of having the modules? I really like modules for several reasons. The main reason was that in an 18-week, semester course, modules offer students a means to take ownership of their own learning by providing a choice. There are certain topics that I want every student to learn. For example, all students receive an overview of World, U.S. and Virginia agriculture. As a class, we also cover the National FFA, complete a woodworking project, and cover a short unit on floral design. Unfortunately, this leaves too much information to cover and not enough time left in the semester. Modules allow students choice in how to complete their semester with me. Students can choose the module topics that they are most interested in, from animal science, plant science, food science, aquaculture, and soil science.

Modules serve to bring technology into the classroom. Computers

are used more frequently when they are taken out of a computer lab that requires teacher sign-up and placed in the classroom where instruction is taking place. Since the incorporation of modules into my curriculum, I have included the use of computers within an instructional context on a weekly basis, even during non-modular units. Granted, this can be achieved without purchasing modular curriculum, but it is definitely a bonus to help facilitate learning and to bring relevance to the topics that I cover.

Modules present a short instructional segment followed by a related hands-on activity. The activities engage students by giving them the opportunity to work as a team and to question, explore, and solve problems. Unfortunately, there are flaws. Module software is not updated as often as it should be. Module companies would benefit from going to an internet-based software that can keep up with the changes in information. Also, students complain about the lack of ability to pause instruction, play back and review content. This makes my job as the teacher even more necessary. I must be able to facilitate discussion and interact with my students to check for understanding.

So how do you make them work in the classroom? One should not expect “plug and play” instruction that takes the place of the teacher. Teachers who invest in a modular program should spend the time to learn their modules and make them applicable to their own program. I have done this through end of semester evaluations and the revision of modular activities. The first year that I used modules, I found that students consistently complained of boredom at one module, particularly on specific activities. As a result, I revised and added activities to improve the product. Each year,

I make changes according to student feedback and the growing availability of curriculum and activities on the internet. Most recently, I put my entire course on a Moodle site and created interactive electronic notebooks to take the place of the module worksheets students were expected to complete. I also hyperlinked applicable websites to Moodle for each module topic and have added activities to support higher level, critical thinking. Many of these are presented to students in the form of a “You Choose” activity where one activity is chosen from a list and completed by the end of the module rotation. Again, this provides ownership to the students. Finally, as technology has improved, I have modified activities. For example, in activities involving the viewing microscope slides, I now incorporate a digital microscope and allow for some comparisons between a traditional microscope and the digital scope. The digital scope comes with interesting computer applications, so exploratory time is built in to allow the students to learn about the technology. Finally, as my classroom is also equipped with a SmartBoard, I now include activities where the students create an interactive review of their module using the Smart Notebook software.

So, are modules a form of “true teaching?” Every good teacher will utilize a variety of tools to present information. Whether I use a video, textbook, SmartBoard, PowerPoint or a computer to present information, the true goal is to engage students in valid learning activities. While the module software may take the place of my instruction, I still move around the room and interact with my students. The modules have built in “Instructor Check Points.” I use these check to assess and evaluate student comprehension and to discuss key points. In addition, I use the check-

points to anticipate future problems students may encounter. Many times, I will not distribute supplies until I have talked with a group, preventing the wasting of supplies. Thus, I am teaching, even on the days when my students are on modules. In some ways, it is even harder than teaching one subject to an entire class. When my classes are on modules, I am teaching five separate topics at once. I must be on my toes constantly for questions regarding all of the topics and I must be able to switch gears seamlessly for the students’ sakes.

So how do the students respond to the modules? I have found my students like the modules and more often than not, they are upset when they do not get to complete more than two modules during the semester. Students enjoy the hands-on activities. They appreciate the social nature of the modules and most of them are interested in the module topics. Yes, on occasion, I will have a student who is not happy with either his or her module assignment or his or her partner. While I do try to give everyone the module of preference, the fact does exist that there are only four students who can be at any one module (made up of two separate computers) at a time, and thus, not everyone will be able to do the more popular titles. I try to pair students up with their choice of partner, but things like

(Continued on page 17)



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Making the Most of a Modular Learning Environment

by Jessica Waknine

When we think of what we know to be agricultural education programs, several images come to mind: students interacting with the teacher during hands-on learning experiences, projects in the mechanics shop or on the farm, or students using their creativity to explore new concepts. In today's middle school agriscience classroom, it is not uncommon to see this image: computers surrounding the perimeter of the room, students seated in pairs watching videos and wearing headphones, the teacher circulating the room assisting students as they engage in learning with computer-assisted modules. It makes sense. As the current generation of students is becoming more technologically savvy, computers, among other forms of technology, have become ubiquitous in schools. Computer-assisted modules have been introduced into Career and Technical Education (CTE) classrooms as the ultimate learning package and technology integration tool, and are changing the way students learn in today's agricultural education programs.

Why Study Modules?

As a middle school agriscience instructor in a traditional program, traditional in that we had a school farm and instruction was typically teacher-led, I began to wonder why so many CTE programs in my county were making the transition to computer-assisted modules. Two new agriscience programs opened with the modular design and the industrial arts program at my school at the time was transitioning from a traditional

woodshop to computer-assisted modules. I had many questions about how students learn with computer-assisted modules, and how the learning environment promotes self-regulated learning compared to traditional teacher-led instructional methods. My master's thesis research examined how students engaged in learning with computer-assisted modules based on the design of the modular curriculum and how students engaged in self-regulation during their learning experiences with the modules. Working with a local middle school agriscience program in Virginia, I conducted a case study in which I learned a great deal about the benefits and challenges of teaching and learning with computer-assisted modules. I witnessed the process in which a teacher implemented the modules in a way that created the ideal modular learning environment.

The "what, how, and why" of Computer-Assisted Modules

Computer-assisted modules are student learning packages that consist of computer software containing videos, text, pre and post tests, images, and in some cases, links for on-line resources. The modules include supplies for hands-on activities that correspond with each daily activity, as well as a student workbook. Modules have been developed for elementary through post-secondary education, as well as for a variety of CTE programs such as health and industrial technology. Computer-assisted modules are designed to range in anywhere from five days to nine weeks of instruction, depending on the design company and course content. Of course there may be unexpected interruptions or technological mishaps could extend

the amount of time students spend on each module.

In general, when modules are implemented, the teacher assumes the role of facilitator and allows most of the student learning to occur through the modules. The students rely on each other to answer questions, and the teacher circulates the room assessing student progress, offering support, and answering questions. Students log onto their computer modules, find the assignment in which they left off from the previous day, and watch the video containing the content for the daily lesson. Upon completing the video, students take a posttest to assess their learning, then, proceed with the hands-on activity. Students would go through this same routine each day until the module unit was complete. Students follow this same procedure for each module throughout the course.

At the case study site, I observed students using ten computers, two computers for each topic. For example, four students worked at two computers designated for animal science. At the start of class, the teacher would remind students of the assignments for the day and after five to ten minutes of general instructions students would transition to their modules. Module teams were typically randomly assigned, but depending on the learners in the class, special partnerships could be established by the teacher to provide assistance for students in need of special accommodations, such as pairing lower level readers with higher level readers.

One of the selling points of computer-assisted modules is that they are designed to create a self-paced

learning environment where students move through tasks at individual rates. This self-paced concept can promote self-regulation among students who naturally possess the ability to monitor their learning experiences. Another benefit of the computer-assisted modules is that students complete the modules in pairs, which encourages a social learning environment. Since students at each module station complete different lessons on different topics every day, student interest is peaked as they see and hear the activities around the room, creating a truly unique learning experience. However, for students who are not as self-regulated, issues arise when students cannot keep up with the pace of the modules, and in turn fall behind from the rest of the class.

Making Modules your Own

The most exciting part of my case study research was watching students engage with the modules in this particular program. The teacher worked exceptionally hard to modify the modular curriculum to suit the needs of her students, the expectations of the program, and create a more interactive learning environment, by not fully adopting the “teacher as facilitator” concept. This teacher modified the workbook that accompanied the modules by adding activities of her own, including experiments, projects, and surveys. At the end of each module, students completed a survey reflecting their module experience and what they learned at each station. The teacher added stopping points to each module to give very specific instructions for students to pause and wait for her to review their completion of certain module components. At the stopping points, the teacher would ask students questions about what they had been doing, and engage them in a conversation about the content, sharing additional information not provided by the modules.

Students were encouraged to rely on each other to answer questions about their module assignments. They were also encouraged to work in teams of four on the hands-on components of the modules. At the end of a module rotation, the teacher asked students to share with the class what they learned from the modules, as well as their favorite module activities.

The defining characteristic that made this program truly stand out among other modular learning environments was how the teacher rotated the curriculum between computer-assisted module units and units that relied on teacher-led instruction. Students would complete a five-day module, which in her class would actually take about ten days, and then spend six weeks in the mechanics shop, followed by two weeks back on a new modular unit, then a few weeks in the greenhouse or doing group projects. Students were exposed to a mixture of modular instruction and teacher-led instruction. As a part of my study I found that this mixture of experiences proved to be one the students’ favorite part of taking this course – the choices and variety of activities. The choices and variety of topics they were learning was something students had rarely experienced in other classes. Students revealed that either one method alone – teacher-led instruction or modular instruction – would not have the same impact as the mixture of both. During teacher-led instructional time, the teacher utilized other forms of technology, including a Smart Board and clickers. Students also identified this use of technology as a favorite part of the course. The unique course design was what kept the students coming back.

Changes after the Case Study

Many themes emerged during my case study about how students

prefer to learn with the modules and how they engage in self-regulation. As a result of my study, the following statements highlight a few of the recommendations that were made based on student responses and a content analysis of the module software:

- Redesign the modules to contain content that requires higher order thinking and the software to be more user-friendly. This is something that only the module companies can change, but is a noteworthy issue since the majority of assessment questions on the computer and within the student workbook are knowledge-based and require very little critical thinking or problem solving. Issues related to ease of navigation and inability to pause the audio made learning difficult for many students.
- Include more opportunities for students to be self-regulated. Because of the navigational problems with the software, students did not have time to stop to take notes, and since there were no buttons to skip ahead or backtrack, it was difficult for students to review the content when necessary.
- Allow students to have ownership for the activities in

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The Makings of a Strong FFA Officer Team

by Michaela Kehrer

A team is only as good as its leadership. We've all heard this before and can attest to the validity of the statement. As chapter advisors you want the very best for your students. We are always challenging them to think outside the box, to try the Creed CDE, or run for the chapter office. We view the junior FFA chapter as a means of encouraging students to participate in the senior FFA chapter while hopefully preparing them for leadership success. The best way to ensure you have strong senior FFA leaders is to develop the junior members' leadership abilities. The following article is simply a cluster of ideas and concepts related to working with your junior FFA chapter officer team, which are provided in the hopes that one or two ideas will work for you and your chapter.

First, we begin with the end in mind. We believe that it is important to reflect upon our expectations for the officer team and the chapter. Personally, I feel that if my colleagues and I spend the time and energy working with the junior officer team and members, these students will be leaps and bounds above Greenhands who are truly 'green' their first year in the senior FFA. At the same time we need to remember that these junior FFA members are still in middle school. They're young and with that territory comes inexperience. Some days will be great and some bad; it's OK if our officers are having trouble focusing on that day's challenge or if the chapter is not having a stellar meeting, tomorrow is a new day.

In our chapter, officer elections are held at the end of the previous school year, which allows for the new

team to start the new school year by attending a chapter officer training. Each year a senior chapter member is elected in the office of Junior Advisor.

tary and treasurer are given a model copy of their reports along with a blank copy where they can enter in the appropriate information. They

Chapter officers cannot expect members to step out of their comfort zone if they are playing it safe.

The role of this position is to assist in running the junior FFA meetings, collaboratively working with the advisor to plan and execute the officer training and ultimately helping to develop students into model FFA members. We encourage senior FFA member participation at the junior FFA chapter meetings. The junior members love seeing and working with their older peers and the junior members don't have to hear from the advisors all of the time. It's much easier to sell an activity by having one of the older members share their FFA experiences and encourage the younger members to get involved.

We have the officer training prior to the start of the school year or as early as possible so that the officers are familiar with their roles and responsibilities before the first chapter meeting. We believe it's important to help the students feel confident in their new position: the chapter photographer should know where the camera is located and how to download the photos into the computer, the sentinel should know how the meeting room should be set up and where all the paraphernalia belongs and that they are responsible for greeting members and guests as they arrive. During officer training the secre-

are taught by their respective senior chapter officers how to enter the reports into computer records they can prepare after each meeting.

A first impression is a lasting impression. We believe that the officer team should have their parts memorized. Nothing says that the team is polished better than the opening and closing FFA ceremonies presented properly. On meeting days we have the officer team wear a FFA t-shirt or sweatshirt. This is free advertisement and will remind the other members that there is a meeting scheduled for that day!

We have bi-monthly officer team meetings alternated with the chapter meetings. This gives the officers a

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By Teachers, For Teachers

by Sally Shomo

For over 25 years I've served as a middle school agriculture teacher by choice, not by chance. From experience, I have found that there is a big difference in teaching students that are 10 - 14 years of age versus high school students. A middle school teacher is not only an educator, but also an entertainer. Middle school students are in constant motion, physically, mentally and emotionally. A teacher must be able to incorporate a fast paced, hands-on curriculum, not only to educate, but to entertain these young learners. To create and manage this type of teaching, a middle school teacher is indeed a unique individual.

There are many rewarding opportunities that arise for middle school teachers. Middle school teachers have the opportunity to begin the agricultural career of students, to start their FFA dream, and be the nurturing force to encourage them to continue their agricultural pathway. A middle school agricultural program is the first unique step to their agricultural career.

Knowing that teachers are always looking for ways to improve themselves and their program; from lesson planning and teaching strategies to new ideas for projects and activities; we understand the need for professional development. The challenge in creating professional development experiences is the need to commit time and effort to planning and implementing the events. However, when you are designing a conference where participants use teaching resources from fellow colleagues attending a conference that has a specific purpose, you can easily find many in-

dividuals who are willing to help make a conference successful. Since we know that agricultural education teachers are very talented and unique individuals, why not capitalize

on those talents to develop a relevant and engaging conference? We have all heard the saying about reinventing the wheel and we all know that the wheel had to be invented by an agriculture teacher, so why not capitalize on the uniqueness of those who are successful in our own teaching field to create a successful professional development conference. All we have to do is ask.

Realizing the importance of professional development, eight years ago I had a brainstorm. Why not hold a conference for middle school agricultural education teachers only, to meet the specific needs of middle school agricultural education instructors? This conference would be held on topics unique to middle school teachers. Who would know better what middle school teachers need than middle school teachers?

Logistics of the conference... the WHO was easy, middle school agricultural education teachers only. WHERE? A central location in the state, in a middle school department, with affordable lodging, and great food! Meals would be catered and brought into the school (and I am



not talking about boxed lunches). This conference has been held at Beverley Manor Middle School in Staunton, VA, where we have great resources for lodging and food, as well as an active agricultural education department willing to organize the event. WHEN? We have been very successful offering the conference in January. We start at 1:00 p.m. on Friday and work until 8:30 p.m. The conference starts again the next morning with breakfast at 8:00 a.m. and continues until after lunch. HOW? A registration fee of \$50 is charged. This covers workshop supplies and three meals. For planning purposes, the registration takes place in December. We have been very fortunate that in Virginia that we have been able to work with the State Department of Education to provide travel reimbursements for all participants. There are also companies and suppliers that are willing to help sponsor activities. WHAT topics do we cover? The workshop sessions generally last 60 to 90 minutes. Fast paced and hands-on activities are the favorite. Suggestions for the conference are offered throughout the year by middle school teachers who have been former participants of the

conference. Some of our successful workshops include working with the ESL and disadvantaged students, robotics and GPS technology, incorporating technology, small animal units for the classroom, tours of local agricultural facilities, make-it-take-it workshops, teaching strategies, FFA activities, and Middle School Career Development Events, just to mention a few.

At each conference, we always have new participants, ranging in experience from the first year teacher to teachers with over 30 years of experience. Many teachers leave the conference with the statement, "I'll see you next year" and they mean it. Several teachers have attended all eight conferences. I believe this is a sign of success! Average attendance for our conference is 25 – 30 teach-

ers. The most requested and favorite workshop session, idea exchange, is one we have been doing every year. During this session each teacher is requested to bring in lesson plans, unique ideas, projects, etc. to share with each other. Many ideas have been shared and tweaked to be used in our own programs. Agricultural education teachers always have great ideas, so why not share our successes with others? The sharing time is definitely the highlight of our conference!

All teachers are alike in that we get overwhelmed, there are not enough hours in the day, and we just can't seem to get it all done. However, in Virginia, middle school agricultural education teachers show up every year on a cold weekend in January to share their passion and learn

about becoming a more effective teacher for the young minds that they teach. It's really very easy, so effective, and worthwhile. We've already begun planning for next year. Do you think this is a unique idea? Try it and we think you'll like it! By teachers - for teachers, it's the only way to go!



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The Makings of a Strong FFA Officer Team (continued from page 12)

chance to reflect on the previous meeting, plan an agenda for the following meeting, organize the fun activity for the next meeting and give me a list of any items that they need. It also allows time for the secretary and trea-

surer to complete their reports. With the help of the officers, we develop a monthly calendar that shows all meetings (both executive committee and chapter) and activities. This ensures that the students know when the

meetings are scheduled.

It's important to spend some time working with the officers to encourage them to develop their leadership skills. They need to understand that when

it is time for the preparation of Discovery degree and Career Development Events, the expectation is that they lead by example. They should not expect the other chapter members to step out of their comfort zones, if they as officers are playing it safe! We have the officers do short presentations about each of the CDEs in which they have competed. As part of these presentations, we share chapter success stories, and let them know that our chapter has a strong legacy!

Finally, we try to keep it light, keep it relevant, and keep it FUN! The officers need to have a positive year of service to keep them coming back for more. After all, isn't the goal to get them to become successful senior members?



Middle Schools, Summer Camps, and Ag Education Recruitment

by William Waite

A wise man once said “Nothing is ever accomplished till someone gets excited about it!” Of course, the follow up question would be “How do you get someone excited?” I guess that will always be the hard part. When you’re talking about agricultural education, the question of excitement is crucial. The enthusiastic teacher or student who is already engaged in agricultural education will wonder why more people are not interested.

There are many ways to get people excited. You can have Mike Rowe from “*Dirty Jobs*” show up and shear pigs. Students can take animals on tour to other classrooms. If you want to get away from school, you can take students on a trip immersed in outdoor recreation, environmental education, and FFA leadership development. If you’re lucky, your state has a good FFA summer camp program.

The New York FFA and Oswegatchie Camp

In New York, the state FFA association decided it wanted a place for FFA members to get off the farm, experience leadership training, and socialize with new people. It started to search in the 1930s but had to give up due to World War II. After teachers returned from active duty, they looked for property throughout the state and eventually settled on an old lumberjack hotel in the western mountains of the Adirondacks. The Oswegatchie FFA Camp was born.

Starting in 1946, FFA advisors and their students would travel the by-ways of New York to arrive at

the camp, set 12 miles from the nearest town. The property encompassed 1200 acres, 4 very large ponds, immense standing timber, and wildlife everywhere. The property had several small buildings and a large lodge that all required a tremendous amount of work to refurbish. There was no electricity or indoor plumbing and all the cooking had to be done on a tremendous woodstove or outside on campfires.

In the 21st century, Oswegatchie’s patrons reflect the modern era of agricultural education in New York. Most of the campers that attend are not farm kids. Females represent 75% of the campers enrolled in summer camp. The original purpose of socializing kids has come full circle with the age of cell phones and the Internet; since campers have no access to either while they are on the camp property. Today, the making of actual face-to-face connections has made Oswegatchie an even more important experience for young people.

Middle Schools and Student Recruitment

In New York, agricultural classes are not mandatory; educators depend on students to sign up for their classes. A general consensus to the success of an agricultural program is the number of students enrolled in classes. It is hard to impress an administrator with just having high end projects with low student enrollment. The bottom line is “no students equals no job.” Agricultural educators must take student recruitment into their own hands. They cannot depend on guidance counselors or schedulers to direct students into agricultural programs. Even “word of mouth” must

be created by an agricultural educator.

Agriculture teachers in New York have found that it is much easier to involve students before they are in high school. Teenagers are already too busy. If they are not already playing three sports and taking advanced placement classes, they are taking driver’s education and getting jobs to pay for a car. So, the next best strategy is to hook them when they are younger. For the New York FFA, starting junior FFA chapters has been crucial.

Summer camp turns out to be a great special event for junior high FFA chapters. In New York, using the Oswegatchie FFA Camp is a ready-made opportunity. It is offered over multiple nights, it is organized and managed by a very talented team of outdoor educators, and it is inexpensive compared to other camps. However, it does take a little hustle by the agriculture teachers to make it happen.

The Summer Camp Angle

In America, camping has been a part of youth development for more than 100 years. The very idea of retreating into the wilderness is something uniquely American. Whether it is the stories of cowboys or the idea of heading to a national park, the concept of nature’s therapeutic effects has been held in high regard in this country. As summer camps matured, the realization of the growth a child experiences at camp has been embraced by both parents and teachers. Culturally, camps have been very effective in reflecting societal strengths, or helping to compensate for weaknesses, by creating experiences that

address those issues. Over the past 30 years, the camps that still exist only do so by growing and reflecting the current culture. With the world moving faster every day, camps still offer the chance to escape to the wilderness, but by doing so in safe and structured conditions.

Summer camp can be a very powerful experience, especially for middle school students. The excitement of getting away from home and meeting new people, combined with new activities can be life changing. At camp, they can reinvent themselves and shed their personae from school. Challenges like a 515 foot zip line, riding a horse, or paddling a canoe are special, but even more when they are wrapped into one amazing week long experience.

If you are not in a state with an FFA camp, it is a great resource. If they don't own their own facility, do they offer some type of summer experience? See what your state FFA offers and learn what you can about it. One of the most important things to understand is that camp's culture. Is it aggressively a sports camp? Is there any room for a large group of middle school students? Will your middle school students fit in? Is it completely leadership based? What would you be required to do as an FFA advisor?

If your state has no FFA summer camp, look to other states nearby. Oswegatchie Education Center welcomes campers from other states. If a neighboring state has a camp, see what it takes to get involved. Make it a summer trip. In New York, we have schools travelling from Missouri and Georgia to experience Oswegatchie. We also have campers from Connecticut, New Jersey, and New Hampshire.

It does take effort to take ad-

vantage of camping programs. You need to recruit students who want to attend a camp. You need to be organized and keep track of your prospective campers. If you can offer camper-

ships to pay for partial camp fees, this is great. Giving any camper a free ride to camp is not recommended. At the Oswegatchie Education Center we have learned that "if there is no price, there is no value," meaning if a camper has some money invested they will probably follow through on attending camp. Above all, be prepared to hustle, you cannot just say to students, "who wants to go to camp?" It takes work. You will need to make promotional material available to students, and maybe play a promotional DVD in hallways or cafeterias.

Once you are at camp, the camp culture should carry your students away. Some camps need the FFA advisor to supervise, referee, or work in some capacity. This makes a big difference in your experience. If you are spending all of your time with students, it's a great way to learn about your students. If you're spending all of your time with fellow FFA advisors, it is powerful networking time.

Teen and "Tween" Marketing

It takes time and insight to market yourself to students. However, you can share what you do with large groups easily since schools are captive audiences. You probably won't



even need to spend money to make something happen.

A few tips on teen marketing:

- The harder the sell, the quicker its discredited! Teens pick up on this immediately and you will already have lost.
- Offering the students an opportunity and looking for emotional triggers does work, but they need to know the choice is really theirs.
- Getting teens to think emotionally about the "what if they don't" option is the real opportunity to getting a student involved.
- Teens want ownership over their lives. If it is not unique to their generation, it needs to feel unique to them.
- Social Networks like Facebook and Twitter really do work. I highly recommend using a Facebook "page." However, if you not familiar with either of these things, educate yourself before utilizing.
- No matter what Internet resources you use to market to teens, you

will still need to use flyers, business cards, or presentations to lead them to you.

- If a student does want to do something, never offer to pay the full cost for a student. When some of their own money is on the line, they will follow through. When a student is not invested, it gives them an easy out when they get too nervous. "When there is no price, there is no value!"

For more information, contact the Oswegatchie Educational Center at:

9340 Long Pond Road
Croghan, NY 13327
info@oswegatchie.org
www.oswegatchoe.org

FFA Camps in Other States

Other states have FFA camps. Here are a few of these camps:

Ohio Camp Muskingham
www.ffacamp.com

Georgia FFA- FCCLA Center
www.georgiaffacamp.com

Georgia Camp John Hope
www.campjohnhope.com

Kentucky FFA Leadership Training Center
www.kyffa.org/index.php?page=camp

North Carolina FFA Center
www.ncffa.org/Web%20Pages/CAMP-home.htm

South Carolina FFA Center
www.scaged.org/Camp/camp.htm

Arkansas FFA Camp Couchdale
www.arkansas.ffa.org



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Computer Modules in Action *(continued from page 9)*

reading levels, student ability, and the intrinsic motivation of each student also play a role in their assignments. This is not to say that every student likes the modules. There are some students who do not like them. However, there are also students who dislike activities in more traditional settings.

In conclusion, computer-instruction in the form of modules can provide a valuable learning experience for students in agriscience programs. They provide students a means to study topics of interest. They engage students in problem solving activities that correlate with academic classes while allowing for social interaction and the use of technology. It is important to remember that modules do not make a program and they should not be the entire program. Students who are kept on modules throughout a course will become bored. The modular curriculum is simply a component of my course, just as working in the shop and greenhouse are com-

ponents of my course. The actual module video instruction is no different than that of a DVD or a clip that I might find online, again, another tool for a teacher to use. Teachers who include modular curriculum should invest the time to learn the content of their modules and integrate modular instruction with more traditional forms of teaching. They should also continue to evaluate and revise curriculum to suit the students and the program. This is an expectation of any good teacher, regardless of whether the activity comes from the curriculum that accompanies a textbook or an activity found on the internet. Those who view modules as a lazy teacher's dream should remember that a lazy teacher will find a way to be lazy in any environment. Likewise, a good teacher can make the most of any environment.

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The Minds in the Middle

by Matt Spindler

I still remember my first day of teaching seventh graders in the middle school agricultural education program in Milaca, Minnesota and how it challenged me. What I learned on that first day was that a lot of what I knew about students and how to work with them was going to need expansion. I asked my colleagues, Doug Olson and Dean Byers, for their advice and they both had one word for me: patience. As it turned out, the advice of my colleagues was not only sublime in its simplicity; it was also right on target.

Researchers believe that during adolescence, neural connections selectively adapt over time to meet the needs of the individual based on their environmental contexts and the experiences they have. Researchers also believe that the overall purposes of this adaptive process are to: 1) cull redundant and unused neural connections; 2) enhance the efficiency of message transmissions within the brain; and 3) cultivate and strengthen the neural connections that are utilized. In short, the adolescent brain is going through a housekeeping process which will strengthen and interconnect high utility neural connections while eliminating the connections that are not functional.

How might the research regarding the changing brains of middle school learners impact teaching in agricultural education? What are the implications for practicing agricultural educators and what are some of the specific recommendations for practice that arise from the research findings? Below are several strategies that could be implemented in a middle school agricultural education program to address multiple aspects of learning for adolescents.

Agricultural programs in middle schools should consider integrating the teaching of metacognitive skills into their courses of study. Metacognition, in general, is an understanding of what one already knows and can do intermingled with an accurate internal representation of the skills and strategic knowledge that will be required in specific task situations. A more general way to describe metacognition is to say that it is an understanding of what one knows about their understandings and thinking.

Often metacognition takes the form of an internal dialogue which engages a process of self-monitoring; e.g., a process in which students ask themselves questions such as: what do I know about the topic, how does what I am learning fit with what I already know; and what are the steps and key points in addressing a challenge in this topic area. In particular, metacognitive instruction has been shown to enhance the ability of students to learn independently and conceptually organize their learning to facilitate the encoding and retrieval of knowledge and skills. If we remember that adolescents are developing their abilities to think at higher levels of abstraction and that they are going through a process of neural housekeeping, it makes sense to assist them in building linkages that explicitly require them to engage what they already know, compare it to what they are learning, and to construct a picture of how the old and new understandings fit together in a wider context.

By specifically addressing metacognitive processes with middle school learners, they'll also have assistance in strengthening the neural connections which enhance their ability to monitor their own learn-

ing. Moreover, research indicates that neural connections are propagated and strengthened based on the number of times they are accessed and utilized. That means that by explicitly asking students to engage in metacognitive processing, they will be propagating and strengthening connections between their metacognitive understandings and the agriculturally based content and skills they are learning.

Several strategies for addressing metacognitive knowledge:

1. Pre-expose students to learning materials and resources and explicitly ask them to report what they already know about the topic(s) or skills and what else those topics and skills might be related. Pre-exposure will begin to activate students' existing knowledge connections and facilitate the formation of links between the new information or skill and their existing knowledge, a critical step in constructing meaningful knowledge.
2. Utilize concept maps to illustrate how different topics and skills are organized conceptually. Ask students to illustrate their understandings of topics or skills through concept mapping. Concept mapping asks students to create a diagram which visually depicts how they understand or think about a topic or skill and how it is related to other topics or skills. Metacognitively-focused concept mapping activities are likely to assist middle school learners in: 1) organizing their knowledge connections for encoding and retrieval (a new neural connection pattern is created each time a new skill or behavior

ior is learned); 2) understanding how topics and concepts are situated within a larger context; and 3) constructing meaning around what is being taught or the skills being developed.

3. Explicitly ask students to reflect upon their learning experiences and the knowledge and skills that they have acquired. Reflection provides middle school learners with time to process and create meaning around their experiences. In addition, reflection is a form of review which will engage students in re-accessing and activating neural connections, because researchers have found that it is not the length of time spent studying, but rather how many times neural connections are accessed that cultivates and strengthens them.

Employ the use of models as a consistent strategy throughout units of study. Modeling can have several different definitions and forms. One form of modeling is to model behaviors. As middle school learners progress through adolescence they are constructing their ability to temper their emotional responses to the environment. An additional concern is that often middle school learners have a difficult time interpreting the actions and reactions of adults (Steinberg, 2005). An instruction meant to provide direction may, in the mind of a middle school learner, be interpreted as yelling.

When middle school learners make poor choices and decisions it is critical that instructors are mindful of their responses in order to: 1) avoid criticizing the student's personhood; 2) focus on the undesirable behavior / choice itself; and 3) define alternative behaviors / choices. By maintaining their composure (patience) and using logic and reasoning in their re-

sponses, instructors are modeling a cognitive process of addressing challenges. They are simultaneously reducing the likelihood that their interaction with the student will be misinterpreted as a personal attack.

Modeling can also be considered a description or analogy used to explain or define topics or ideas that are not easily observed. Another form of modeling is to give voice to a thought process as problems are solved or skills are performed. For example, when calculating the yards of mulch that will be needed for a landscape, students will benefit from hearing the instructor voice the steps and key points that are necessary while simultaneously engaging in the process of solving the problem from beginning to end. To take it even further, instructors could voice their thought process as they link the calculation to the formulation of a contract bid and the logistics associated with transporting the mulch to the site. In the aforementioned case, the instructor has an opportunity to model: 1) a calculation, 2) problem solving strategies, 3) critical thinking; and 4) the use of metacognitive learning and rehearsing strategies.

Utilize and explicitly highlight the inherent connections between the agricultural content in the middle school program and the other content students are learning across the



curriculum. Adolescent students are highly receptive to new information and primed to develop new skills (Steinberg, 2005). One of the skills agricultural education programs can assist middle school learners in developing is the ability to transfer knowledge and skills across domains. By explicitly highlighting and asking students to be mindful of the connections between what they are learning and doing in their agriculture course and what they are learning elsewhere in school it is possible to facilitate the cultivation of more complex linkages between networks of neural connections.

Further, by creating bridges that explicitly connect knowledge from different courses of study and link what learners already know or can do with new experiences, it is possible to facilitate the construction of meaningful knowledge. Addressing connections between topics or skills that students may not connect on their own is also likely to assist them in creating new neural connections that facilitate more in-depth levels of understanding. In addition, such explicit explanations will assist middle school learners in developing neural connections and understandings which reflect the complex nature of

knowledge as it exists in the world, unseparated and dichotomized by artificial subject matter domains.

Have patience with students and with oneself as an agricultural educator who is always learning and developing expertise. I realized immediately that the advice of my colleagues pertained to my work with students; however, I came to realize over time that I needed to apply it to myself as well. Middle school learners are progressing through a complex period of their lives both biologically and socially. Adolescents will often make poor decisions and they may

have little or no explanation for their decisions. Teaching middle school learners is a challenge; however, the opportunity to assist them in shaping their networks of neural connections is also one of our greatest opportunities to impact the future of agriculture.

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Making the Most of a Modular Learning Environment (continued from page 11)

which they engage with the modules. The module content and activities are prescribed, so to speak. Students are not able to decide on types of research or projects to complete, they follow stringent instructions when completing labs, and do not have an opportunity to design their own learning experiences.

When I shared the findings of my study with the teacher from the case study site, she was moved to implement some of my recommendations to improve her courses for the new school year. The changes she made were incredible and had a great impact on her students. First, the teacher created an interactive course website where students could access note pages, worksheets, web links, or assessments for each unit. She converted all of the workbook pages into Word documents which are available on this site, and students now com-

plete and submit all of the workbook activities electronically. The teacher also added higher level wording and questions to the worksheets, as well as interactive web links. Students had referred to their workbook activities as “paperwork” during my study, so the teacher eliminated the paper from the process. As a result, students have changed their attitudes towards completing the workbook assignments because they enjoy taking notes and filling in worksheets on the computer. Reflective journaling activities were also added to the workbooks to encourage self-regulated learning.

The greatest improvement of all is in the addition of “You Choose” activities, a concept that builds upon the students’ appreciation for choices and variety. For each module unit, students pick at least one additional project from a list of four or five that must be completed. These op-

tions give students some ownership of their learning experience with the modules. The changes the teacher has made thus far are showing great promise for the future of modular learning environments, as the teacher has not only shared her ideas with the other teachers in her county, but the teacher has told me how her students’ attitudes towards the modules have changed, for the better. While we may feel reluctant to accept the change from traditional to modular agriscience education programs, we must always remember that as educators, we have the power to mold our curriculum and resources to fit our preferences and needs. Even though we cannot control how the modular software is designed, we can control how it is implemented.

Going the Extra Mile: Giving Middle School Students Outside the Classroom Experience

by Justin Gillespie and Stephen Edwards

Four hundred unpaid hours, no options for flex time, and that is for just one of the many events participated in by North Buncombe Middle School. Why on earth would one teacher dedicate all that time with no benefits to one event? The answer: Students enjoy showing livestock and gaining the life experiences that comes with the showing of animals. Middle school agricultural teachers, like our high school counterparts, truly understand the benefits of developing complete agricultural education students. While middle school agricultural programs often do not receive the same level of promotion as high school agricultural programs, middle school agricultural education programs are just as viable in developing students for potential careers in the agricultural industry.

North Buncombe Middle School is located in western North Carolina in the town of Weaverville. While agriculture is a key contributor to the

economy, many students in this community do not understand this vital industry. As a middle school agriculture teacher, I have the opportunity to teach every seventh grader and half of the eighth graders through a six week student rotation. As a teacher, one must be creative to provide a successful educational experience to thirty students who have different opinions and perceptions of agriculture. The key to overcoming these challenges is to get students involved with a positive educational experience. Through classroom activities, I promote FFA in hopes that students will join and take advantage of these positive experiences eventually “developing their potential for premier leadership, personal growth, and career success.” The main goal of this article is to share some of the out-of-classroom experiences that are offered through the North Buncombe Middle School FFA Chapter.

Through service projects, FFA allows students to become leaders in the community as well as the classroom. One program that we participated in is an “Apple Gleaning” project with the North Carolina Farm Bureau Young Farmer and Rancher program and the Society of St. Andrew. This fall, North Buncombe Middle FFA members picked 110 bush-

els equaling approximately 6,000 pounds. The service project allowed students to see what hard work produced. They were able to complete a service for others and to gain valuable leadership skills that they will remember and share in their community. The service project was also educational; while in the apple orchard students also observed a combine picking corn and had an opportunity to learn about corn production as well as the many uses of corn.

One of our major chapter FFA events is livestock showing, including the showing of: market lambs, meat goats, breeding ewes, heifers, and pigs. If students do not have a place to keep their animal, they are allowed to raise the animals on my farm. After raising the animals and

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CDE Excitement for Junior High Members

by Melvin Phelps

One of the most important aspects of a successful Junior High FFA Chapter is to keep them busy. Sometimes this is easier than your typical high school students because they don't have as many obligations, most of them don't have a job yet, and there are fewer options for sports, which means they are available to participate in FFA activities. I have been teaching in upstate New York for 13 years and have had an active Junior High program that runs side by side with my Senior High FFA Chapter. Until this year we have met together, fundraised together and traveled together. With an increasing number of Junior High members, we have recently started to meet separately.

I am fortunate that in New York, the state FFA association sees the value in the Junior High programs and has gone to great extent to offer programming for our young members. We have developed three Career Development Events specifically for middle school students. In the People in Agriculture CDE students explore career opportunities in agriculture then present a poster and speech with the information they find about specific careers in agriculture. We offer a middle school Quiz Bowl CDE about basic agricultural facts and FFA History. In this event students participate in teams of four members and compete against other teams using a buzzer system. Finally, the Tool Identification CDE challenges individual students to apply their knowledge of common middle school mechanical technology tools. However, the true demonstration of the importance of middle school FFA programs came a few years ago when I was a mem-

ber of the State Governing Board and we decided that every CDE offered would have a Junior High Division. We now offer everything from Aquaculture to Agricultural Mechanics and from Prepared Public Speaking to Dairy Foods. This has been a great way to expose students to different CDEs at the state level.

Adding the Junior Division to our Career Development Events has not been too cumbersome. As the coordinator for the Dairy Foods CDE in our state, it was pretty easy for me to make the necessary changes to allow junior high participation. In the Dairy Foods CDE junior high students participate in the same event activities as the high school events however, they only compete against students their own age. In other CDE Junior Divisions, different portions of the events are omitted to address the safety and age appropriateness of the specific activities. At the State FFA Convention, the results of the junior division CDEs are announced at a special luncheon and then later the top winner in each event is recognized on stage in front of the entire delegation.

A great example of the power of a Junior High FFA Chapter was evidenced with one of my former students, Matt. Matt was a quiet student who decided to join FFA in the sixth grade after attending our state FFA Camp Oswegatchie. Matt did not come from a traditional agricultural background; in fact his father was a school administrator at a neighboring school district. The difference between Matt and the other sixth graders was Matt's disability; he wore two hearing aids and had a slight speech impediment. Matt was able to find his niche in the FFA where he felt like he belonged. As he grew, he participated in every opportunity he had,

from public speaking to dairy judging. Through his junior high and then early high school career Matt gained enough experience that he ran for a State FFA Office and was elected to serve as a District President. Matt was also the lead member when our chapter hosted the 2004 NYS State FFA Convention. The experience and knowledge Matt gained in middle school provided him with the opportunity to grow and bloom into a strong leader. Matt's parents attribute his participation in the FFA as the catalyst for the development of his inner drive and his public speaking abilities. FFA was not necessarily an option that Matt would have considered in High School however; as a result of his participation in Junior High he was able to change his life.

My students and chapter have grown as a result of the opportunity students in our school have to participate in a variety of CDEs at a level above the local chapter. Participation in our FFA Chapter is through the roof and it can be related back to the experiences the students had as a Junior High members. Our high school agriculture program is fortunate to have a middle school component that serves as a catalyst for student involvement and participation in the various courses and FFA chapter activities.



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Tapping in to the Enthusiasm

by *Patty Waldron and Erin McCaffrey*

Can you imagine walking into a roomful of sixth graders, asking ‘who is interested in joining junior high FFA’, and having 35 out of 40 students raising and waving their hands to say ‘yes’? We can attribute this enthusiastic response in our classroom to the fact that many of our students are younger siblings of senior high members and they know about FFA from their older family members. The sixth grade students are looking forward to what the FFA has to offer because they’ve seen their siblings have positive experiences at FFA events and activities.

In our school we have a junior high FFA that includes 6th, 7th, and 8th grade students. With one school building for all 500 students in grades K-12, we have a great opportunity to teach and interact with middle school students. In 2001 we added the 6th graders to our agriculture program. While other programs do not include 6th graders in their junior high FFA, we feel strongly that by allowing FFA membership in 6th grade, students become interested early. We believe this has helped to retain our FFA membership in the senior high chapter. Without the middle school members, our program would be missing out on a great number of opportunities, including the new perspective these young members bring to meetings, their contributions to successful fundraising efforts, and we would miss out on the early introduction of FFA.

The junior high FFA offers our members the same opportunities that they have in the senior high program. The junior high officer team works closely with the senior high officers

to plan activities throughout the year. They assist in the planning of the numerous activities including the annual pancake breakfast, winter weekend at the state FFA camp, and the parent/member banquet.

We encourage the junior members to compete in Career Development Events (CDE) at the local, district and state levels. At the state fair, members compete in skills contests, such as tree and wildlife identification, horse judging, and meats identification. For many of them this is the first time they have competed in anything, so we encourage them to try an event that piques their interest. More often than not they get to have fun doing it, learn what skill events are all about, and enjoy the state fair. Starting at the district level, our members also compete in leadership CDEs including Junior Creed, People in Agriculture (a New York specific CDE), prepared public speaking, and extemporaneous speaking in hopes to make it to the state FFA convention. Those who don’t continue gain valuable knowledge about agriculture and the FFA. While at state convention they have the opportunity to compete in tool identification, Junior Quiz Bowl, and Junior High Chapter Meeting event. CDEs offer these young members the opportunity to gain skills that they can use throughout their FFA careers.

Fundraising is another activity that our middle schoolers participate in and they often outshine the senior high members two fold. Our fundraising activities include fruit sales of apples and mums in the fall, as well as a citrus sale in the winter. Often this is the first time these members have been involved in fundraising so the concept is new and exciting. At this age they have less inhibitions and

are enthusiastic to sell.

Throughout the school year our junior high students have the opportunity to acquire real life experiences by participating in our greenhouse operations, raising pheasants, and our maple syrup program. Students grow flowers from seed or cuttings. In the spring they can participate in the chapter’s plant sale, helping customers select vegetable and bedding plants, as well as completing their sales. We hatch and raise ring-neck pheasants for release in our area through a New York State Department of Environmental Conservation Pheasant Program. Students are responsible for coming in on weekends and over the summer to help care for the birds and the release of these birds in the fall. Another opportunity for these students in our program is to tap, process and sell in the maple products in our school’s maple production program. These activities often lead our young members to the start of their SAEs, giving them an opportunity to find an activity that they enjoy and continue throughout high school.

The summer brings the most exciting time for our junior high FFA members. Attending summer camp provides an opportunity for these students to travel and stay overnight away from home for the first time. At summer camp students have the opportunity to meet new friends, build leadership skills, and foster a love of the FFA.

One of the greatest success stories started in 2002 when Jenna joined the FFA in 6th grade only because her friends had joined. She was a shy young girl who came to every meeting but never uttered a word! As a 7th grader Jenna decided to give the

Jr. Creed CDE a try, although it didn't turn out the way she expected. On the day of the contest she was prepared, she had the creed memorized, was in official dress and ready to face the judges, or so she thought. When her name was called she entered the judging room and faced the judges, and couldn't say a word. Feeling so embarrassed she fled the room in tears. The following year Jenna was determined to conquer her fear of speaking and once again signed up for the Jr. Creed. This time she was able to make it through the contest, even though she didn't advance to sub-states this was a victory that stuck with her throughout her FFA career. Jenna thrived in the Sr. High FFA becoming the chapter president and

placing 3rd in the state in the Prepared Public Speaking contest. We believe that the opportunities that Jenna had in the Jr. High FFA gave her a head start and allowed her to find her true potential as a Sr. High member.

We would not want to think what our program would be like without a middle school component here at our school. We believe that the middle school classes are our best method of recruitment for the high school program and FFA by reaching these students and getting them involved at a younger age. We find that those students who begin their agriculture experience in middle school are more likely to continue their membership into and throughout high school.



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preparing them for show, the students show the animals at many local, regional and state-wide fairs and events. The show experience teaches students about the responsibility of caring for an animal as well as the training that is required for animals to be competitive in shows. At the end of the show season, students are allowed to sell their animal and keep the profits. The students who show animals learn key skills that assist in evaluating livestock and the majority of my "show kids" become members of our Livestock Evaluation Team. Students who continuously work with livestock have a better understanding of the important concepts used in evaluation. From my experience, teams that show livestock typically place better at Livestock Evaluation Competitions.

Personal growth is achieved by rewarding middle school students with the opportunity to attend State

Convention in Raleigh and FFA Camp in the summer at the White Lake FFA Center. Both of these activities allow for interaction with high school chapters. Seeing high school chapters and competing against them at State Convention allows the middle school students to see what the future holds for them, if they continue in FFA. Also, middle school students see state officers in action at the convention sessions and workshops. In these sessions, students learn skills that will help them be leaders in their chapter. FFA Camp offers a relaxing but competitive atmosphere for fun and fellowship with other members from across the state. Students grow socially by interacting and learning about new ways to make FFA exciting at their chapter. Middle school students are able to share ideas and then with those ideas they can develop new activities to encourage membership growth.

North Buncombe Middle School has a very active chapter at the school, community, and state level. Activities are designed to build interest and promote learning while showcasing agriculture. It is my hope when the students leave middle school, their participation will continue at the high school level. Through their middle school experience, they are one step ahead of other FFA members in high school who did not have the opportunity to be in a middle school program. If more middle schools built stronger FFA programs, the high schools that they feed into will also be stronger. Middle school teachers should try to offer as many opportunities as possible for students to be successful; as teachers our task is to build leaders who possess the skills to be successful in their chosen career and positive promoters of the agricultural industry.

Modern Technology in Idaho Agricultural Education Programs

by Allison J. L. Touchstone, Michael J. Johnson, and Lou E. Riesenberg

Picture it. You are visiting a student teacher at an agricultural education program in scenic, Southeastern Idaho. You have now seen the high school that inspired the movie *Napoleon Dynamite* in Preston, Idaho and you are off to visit another student teacher in Bonners Ferry in the forested North, just a stone's throw from the Canadian border. No problem, right? Just a short drive. That is, if you consider nearly 800 miles and 14 hours or better in a car on good roads a short trip. And, that's just considering the in-state travel. Now, consider the fact that there are student teachers placed in Oregon and Washington as well. The challenge of visiting programs and supervising student teachers has just increased a hundred-fold.

The use of technology in the secondary agricultural education programs in Idaho has changed drastically in the past 25 years. A high school program of 25 years ago was progressive to have a single computer, printer, typewriter, slide projector, TV/VCR, oxy-acetylene welders, stick welders, and a good set of tools for construction and engine repair. The computer of the day probably only had 5 GB hard drive and 256 KB RAM. The printer was dot matrix with the paper that ran on tracks and the typewriter was used to complete applications. Although technology most commonly focuses on computers, it is not limited in that area. A new set of modern engines for the small engines class and the tools and manuals to go along with the engines was another aspect of modern technology. Today's agriculture program

may look much different. The single computer has been replaced with a computer lab networked to each other as well as the Internet. The dot matrix printer has been retired in favor of the color laser printer for printing pictures of Proficiency Awards. Slide projectors are in the antique stores while LCD projectors and computers for PowerPoint presentations are now almost a standard. The DVD player and YouTube have all but pushed the VCR out the door. We may still have an oxy welding set up, but we use MIG and TIG welders as often as stick welders and a plasma cutter or plasma cam has replaced the oxy cutting torch to match industry standards.

In a state as geographically diverse and spread out as Idaho, communication is also a key concern. A phone call and a letter were the primary modes of communication among teachers, parents, students, university faculty and state personnel. Today, chapters have their own websites, blogs, and Facebook pages. List-serves and mass text messages are quick ways to get in touch with students and parents alike. Classes are taught online, electronic communications are moment to moment activities, and the internet is pervasive in the lives of our students. In Idaho, the state approved curriculum is online and accessible to teachers daily, the curriculum is updated regularly as a resource for teachers as just one example of technological implementation throughout all levels of agricultural education.

In the late 1980s, the College of Agricultural and Life Sciences at the University of Idaho requested that the Department of Agricultural and Ex-

ension Education provided the leadership and technical support to the college's effort in distance education. The College had a few years earlier installed a modern videotaping studio classroom as a part of its academic distance education and extension education efforts. Videotapes were developed for both formal classes and for informal and short term extension educational programming.

In the early 1990s, the studio classroom was used as originating site for a Food Science and Toxicology professor to teach an introductory Food Science course on campus and on the campus of the College of Southern Idaho in Twin Falls. The class was transmitted live via Idaho Public Television's microwave system through Boise to the campus of the College of Southern Idaho in Twin Falls. The technicians would begin the system and transmission about 45 minutes before the professor began his lecture because it took that long for the television microwave system crew to throw all the "switches" for the class to reach Twin Falls. At the University of Idaho, this was the first class to be taught at two sites in real time.

During the middle to late 1990s, the University of Idaho was developing videoconferencing connections between the campus in Moscow and the satellite campuses in Coeur d'Alene, Idaho Falls and Boise. During this same time, the College of Agricultural and Life Sciences at University of Idaho was developing videoconferencing connections between its campus studio classroom and various experiment station and extension centers such as Parma, Twin Falls and Rexburg and somewhat later to

include Caldwell, Sandpoint, Aberdeen and Nancy M. Cummings Research and Extension Ranch Center in Salmon.

Early videoconferencing systems such as the V-Tel Radiance System consisted of two 27 inch monitors, one for receiving signal and one for showing the outgoing signal. The sending unit could receive a video signal from a Sony camera, an Elmo document camera, a VCR recorder/player and would accept content from a computer sent through a scan converter which converted the VGA computer output to NTSC for transmission to the distant site. The audio was collected with two tabletop microphones and a teaching cart was used to house the computer and document camera.

In the late 1990s, the Department of Agricultural and Extension Education was asked to combine the videoconferencing systems of the College of Agricultural and Life Sciences with that of the general University of Idaho system. Also, during the early years of this decade, the entire videoconferencing system was converted to IP from an ISDN transport and grew from approximately 15 endpoints in terms of studio classrooms or conference rooms to currently 72 endpoints of studio classrooms and conference rooms on the University of Idaho Moscow campus; the University of Idaho, Coeur d' Alene campus; the University of Idaho, Idaho Falls campus; the University of Idaho, Boise campus and the rest of the College's Research and Extension Centers with six sites being at local county extension offices and several high schools. The system, in the last four years, averaged 2070 classes or meetings per year for 3558 hours of total use and each class or event involved an average of three sites. During this time, most Idaho high school agriculture

instructors could access a videoconferencing center within approximate 15 to 20 minutes driving time.

Within the last two years, the state of Idaho's Department of Administration has developed the Idaho Education Network (IEN), an entity within the Department of Education, tasked with installing videoconferencing capabilities in each high school in the state by the end of this year (2011). At the time of this writing, approximately 60 high schools have been connected and their videoconferencing capabilities are active. The state project is funding both the connectivity and equipment for the connections to the high schools for several years into the future. When the project is complete, each of the 97 high schools that have agriculture programs in the state will have videoconferencing capabilities. About half of the high schools will have receive capabilities while the rest of the high schools will have both receive and originate capabilities. Units that are considered receive sites have only one camera for the students. Units that are considered send sites have two cameras, one for the instructor and one for the students, and also have a document camera plus a computer to address content. Additionally, each of the school systems has the capability to bridge a four point meeting which will drastically reduce the need for centralized bridging.

While the school district, in conjunction with its high school, specifically control videoconferencing systems in their school, the state project mandates that videoconferencing system is a community resource and that the schools may not charge community entities to use the systems. Local Cooperative Extension educators have already used many of the installed high school videoconferencing facilities for both adult and 4-H

youth programming.

There seems to be momentum building behind the Idaho Education Network. Idaho's governor refers to the IEN as great success (most recently in an address to the Boise business community/chamber) and educators in K – 12 schools are regularly mentioning the capabilities of the IEN. Perhaps most important is the fact that the project brings bandwidth into the local community that may become an economic development stimulus as well as an educational connection to the outside world.

The University of Idaho leadership is considering how the statewide system might fit into the University's strategies. It could provide the University a very viable connection to the local schools for outreach and engagement programming, very basic tenet of a land-grant University. The Department of Agricultural and Extension Education is already working with the Idaho Education Network and connecting to the high schools to enhance our dual credit programming with the high school agriculture instructors and their programs. The connections will be used to provide recruitment informational sessions for students and their parents. The connections will be used to provide University expertise in some of the advanced agricultural classes. Additionally, the department views the videoconferencing systems as a significant portal into the local public school and community.

In the Meridian, Idaho school district, one of the largest in the state, agriculture programs exist in the five high schools in the district. Meridian High School, through its professional-technical high school, already had a videoconferencing room as a result of an investment by the Department of Agricultural and Extension Education. Through the IEN project,

four more high schools have been equipped with videoconferencing rooms. The agriculture faculty plans to begin using the videoconferencing system to conduct chapter meetings without having to travel among schools. As was mentioned before, the new IEN installations provide small bridging capabilities at each videoconferencing center and so the instructors at Meridian schools will be able to provide their own bridging when they conduct an FFA meeting with chapter members housed in five different high schools.

Today, the University of Idaho has faculty on both the main campus in Moscow and at the University of Idaho Boise Center. Coursework is taught across the IP videoconferencing system to students in Moscow, Boise, and Twin Falls each semester and the live videoconferencing feed is supplemented with Blackboard activities and e-mail communications among students and professors. Additionally, the Dual Credit Problems of Teaching Secondary Agriculture course will be utilizing Skype as a means of maintaining contact between the University of Idaho professor and the local secondary student and teacher. Similarly, advising sessions take place over the IP videoconferencing system to allow advising load to be shared among faculty on two campuses.

As a result of state directives and exploring additional post secondary opportunities for high school students, Idaho developed a Dual Credit program between the University of Idaho College of Agricultural and Life Sciences and the secondary agriculture programs making up to 7 college credits available to secondary students in Idaho (Heikkila, Patten, & Wells, 2008; Touchstone, 2010). Introduction to Environmental Sciences is available to secondary students

exclusively online from a University of Idaho professor, while Problems of Teaching Secondary Agriculture has both an online component as well local instruction. The Idaho Education Network has installed videoconferencing systems in 55 high schools across the state. Several additional secondary schools also have access to a videoconferencing system in their buildings that have been installed by other agencies. Secondary Ag teachers can now be guest speakers in university teacher education classes, providing expertise and current classroom examples to pre-service education. The distance between schools and the University of Idaho has been effectively minimized through the use of a variety of technologies.

Quality sites for student teaching placements have been spread throughout three states as well. Travel can be prohibitive to meet with cooperating instructors, having informal meetings with student teachers, as well as interviewing for potential positions. The distance education systems have allowed university faculty to meet with cooperating teachers in Idaho and Washington, requiring no more than 30 minutes of travel for any of the attendees, even though they were sometimes as much as 800 miles distant from each other. The cost and time savings alone have been a great asset to cooperating teachers, student teachers, and university faculty alike. Distance education will not ever replace the on-site visit by teacher educators, nor should it. However, effective use of distance education allows for more frequent communication among stakeholders and fewer perceptions of student teaching being isolated from university faculty.

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