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M A G A Z I N E

**TEACHING . . .**



**. . . is THE major role of an Agricultural  
Education Teacher: Lets explore OUR role!**

# The Cornerstone of OUR Profession

By *Jamie Cano*

One fact which is undeniable is that the cornerstone of every agricultural education program is the teacher. The success of the students, or lack of same, is directly related to the competency and commitment of the local teacher.

The teacher is responsible in the final analysis for the success or failure of the agricultural education program at the local level. Now how did I arrive at the idea that it is a *responsibility* of the local agricultural education teacher to assure and maintain a high quality agricultural education program? To more fully understand this *vital* concept, a brief examination of the total program of agricultural education in the local school is in order.

## *Classroom Instruction*

The first and most fully acknowledged component of a local agricultural education program is instruction of agricultural related classes. This is the job for which most agricultural education teachers are primarily hired; and incidentally, the basic reason for students being in the program (not for FFA reasons).

Now, the teacher does not decide whether or not to accept the responsibility of instructing the class — nor should the student be allowed to decide whether or not to take part in the “learning” in the classroom. Indeed, if a teacher reported to the Board of Education that he/she did not

feel like he/she wanted to teach his/her classes, that there were other things they would rather do, then the resulting action is fully predictable. Suppose a student informed the teacher he/she really did not care to be involved in the class work, but that they would go along with working in the laboratory. What reaction would be forthcoming from the teacher? Certainly the teacher believes class work is a *component* of the program and one would hope that a program would not be considered to be complete without all of its components.

## *Laboratory Instruction*

Turning to another teaching component of the local program - the laboratory phase of instruction — does the same logic not hold? Does the teacher *teach* in the laboratory? Would it be acceptable for either the teacher or the student to resign their responsibilities for a meaningful *teaching and learning experience* in this component of the program?

## *SAE Instruction*

With regard to a program of occupational experience for each student as yet another teaching component of the local program, some teachers and students try to depreciate the meaningfulness and essentiality of this component and the results have been indeed alarming. Alarming because it has relegated the program to one inferior in nature and has placed such students in the position of not being able to compete successfully in the marketplace.

## *FFA Instruction*

With respect to the final teaching component of the local program — the youth organization or in most cases, the FFA. Why should any different rationale be employed? Given that FFA is *one* of the teaching components of the local program, how can either the teacher or the student be allowed to intentionally “write this component” off?

## *Conclusions*

Missing any of the identified teaching components, from any perspective, the teacher then has an incomplete program. The teacher is not performing all the duties the teacher has been contracted to do. It is nothing less than professional neglect, much the same as a physician ignoring a small tumor because the patient had three other diseases in need of treatment.

From the perspective of the student, is the student allowed not to participate in all components of the program and still receive full credit? If so, then why should the student be allowed not to participate in selected components and still receive full credit?



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*Authors writing for the March - April issue of The Agricultural Education Magazine discuss the role of teaching in developing and promoting agricultural education programs.*



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# Learning and Teaching: A Complex Phenomenon

By Bryan L. Garton

Teaching and learning are the basic foundations of our profession. In this issue of the *Magazine* colleagues from across the country share ideas and provide insight into the teaching of secondary agriculture students.

The process of learning and the ability to use and apply new knowledge is a complex phenomenon that requires the use of models to guide us in understanding the relationships between teaching and learning. Dunkin and Biddle (1974) provided a model that professionals in agricultural education have found useful in studying the complexity of teaching and learning. The model involves four categories of variables: presage,

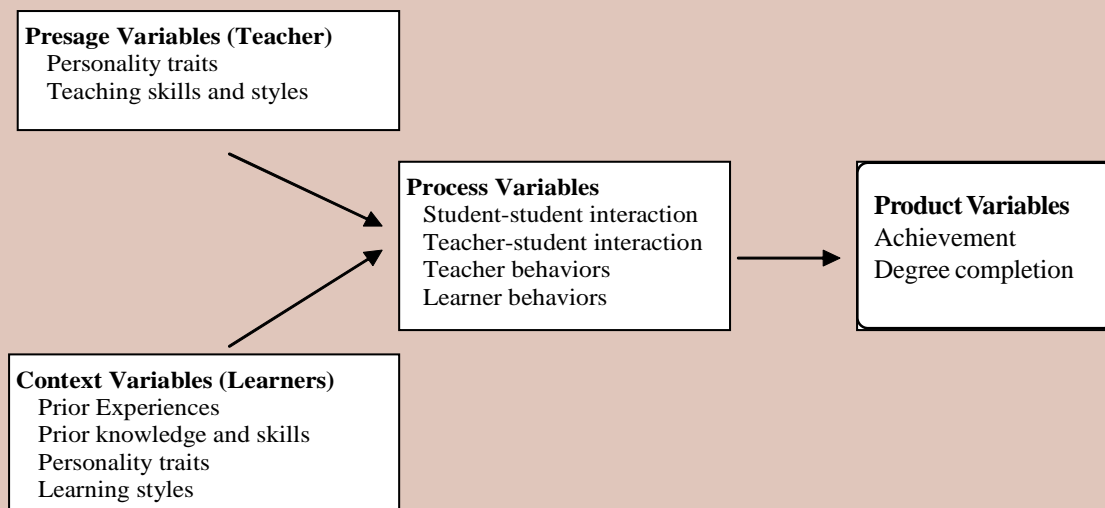
context, process, and product (Figure 1).

Presage variables include those that influence teachers and their teaching behaviors (i.e., those things that teachers contribute to the learning process). Context variables are those that students contribute and include the background of learners, their prior knowledge and skills, attitudes toward learning, and learning styles. Process variables describe the interaction of teacher and learner behaviors in the teaching-learning process. Examples include institutional activities and programs that support teacher-student or student-student interactions, such as classroom learning communities. Finally, product variables include the knowledge and skills gained or attitudes modified as a result of teaching

and learning.

Articles in this issue of the *Magazine* focus on the different categories of variables presented in the model. In an article on building a classroom community, Warner and Washburn discuss the background of the teacher, a “presage” variable, and the culture and background of the students, a “context” variable, in an urban school district. A learning community where the students’ social and physical needs are more of the focus than their academic needs. They conclude their article by providing “tips” on how we can create a classroom community with our students.

*In Firecrackers and Magic Tricks...Is Providing Meaning that Easy*, Kitchel and Torres offer sug-



**Figure 1: Theoretical Model for the Study of Classroom Teaching**



gestions on how to apply brain-based learning theories to our teaching in an effort to provide structured meaning so students retain information longer.

Burris and Robinson provide an insight into making our instruction come alive through adventure learning, a “process” variable. These authors stress that “hands-on” learning goes beyond Career Development Events, SAEs, agricultural mechanics, and horticulture courses. They discuss adventure learning activities and the appropriateness of using them to teach leadership and communication skills.

A rationale for incorporating the “science of agriculture” into the secondary agriculture curriculum is the focus of an article by Thompson and Warnick. They focus on the teachers’ (presage) and students’ (context) backgrounds and how this influences the learning of scientific principles and practice (product).

The importance of teachers building rapport with their students is the focus of an article by Haase Wittler and Martin. They highlight and document some of the most recent findings on the influence student-teacher rapport has on the learning environment and ultimately student learning and achievement. They focus on several “presage” and “context” variables that contribute to the building of rapport, a “process” variable.

An interview with Lloyd Phipps, a well-known and respected individual in the agricultural education profession, is the focus of an article by Martin and Ball. Most will recognize Dr. Phipps’ name from the popular *Handbook on Agricultural Education in Public Schools*. In the interview, Dr. Phipps

shares his beliefs and values of what makes an agriculture teacher successful. The “presage” variables that Dr. Phipps shares include: interpersonal and communication skills, problem-solving professional, and a well-rounded knowledge of the disciplines in agriculture.

Bartholomew and Kidd, two National Board certified teachers, discuss an analogy between the parts of a tricycle and the National Board for Professional Teaching Standards to promote the building of a successful secondary agriculture program. Many of the standards can be looked at through the model. For example Standard I – Knowledge of the Students is a “context” variable and Standard III – Learning Environment is a “process” variable. They conclude by challenging agriculture teachers to meet the Standards to keep programs progressive and moving forward.

One of the concluding articles in this issue of the Magazine focuses on the teaching tools that could be used

in the teaching - learning process. McGregor offers several teaching tips for teachers to try as they teach their lessons. In addition, McGregor offers a “procedure” to follow in teaching the selected techniques offered.

Secondary agriculture teachers have a responsibility to provide a quality learning experience for students. In this issue of the *Magazine* you should find articles that will cause you to take a few moments out of your busy schedule to reflect on the important aspect of being a teacher of agriculture...impacting, influencing, and making a positive difference in the lives of students.

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**“Teaching and learning are the basic foundations of our profession”**

# Building Community and Administrative Support Through Professionalism

By *Wendy Warner and Shannon Washburn*

**P**re-planning time for a first year teacher is always hectic. There are faculty meetings to attend, lesson plans to finalize and a classroom to organize. Yet, in the middle of the pre-planning frenzy, the principal of my first school loaded all the teachers up on school buses so we could spend a few hours traveling the area where our students lived. I had an image in my mind of what all the homes in Orlando, Florida would look like, but these homes were much different from what I had expected.

The homes ranged from small, dilapidated houses, to crowded apartment complexes, to extravagant homes with well manicured lawns and swimming pools in the backyard. It wasn't until after classes started, that I finally realized the importance of taking the time to begin to acquaint the teachers with the diverse backgrounds of our students. Taking a look at their home environments was just the beginning. My classes were a mix of students from different cultures, family structures and economic backgrounds.

Teachers must realize that most students and families may not reflect our own cultural experiences, beliefs, values or economic privileges (Brown, 2002). However, I was not fully prepared for just how many differences there would be between the school I taught in and the one where I grew

up. I attended high school in a rural Ohio county where the student population was 99% Caucasian and only 12% of students qualified for free or reduced lunch. I found myself teaching in a school with a student population made up of 42% African American students, 33% Caucasian students and 23% Hispanic students. Over 50% of the students qualified for free or reduced lunches. The daily challenges my students faced were issues I never had to deal with. I had students with fragmented families, several with only one parent or no adult role model. In many of the homes, finances were tight and there was no extra money available for field trips. I

never had to assume the responsibility of raising younger siblings or using the money I earned at my part-time job to help support my family. I found myself asking the question: "Was the dissimilarity of my upbringing going to prove to be an obstacle in my classroom?" If so, what could be done to overcome these obstacles?

I quickly realized there was much more to being an agriscience teacher than just meeting the curriculum benchmarks. I had to take extra time to develop an understanding of the various backgrounds of my students. Due to all of the FFA activities in which my students participated, I had many

## July - August 2004 Issue

Theme: Changing Purposes of Agricultural Education

Many reports have asked for changes in agricultural education. What has happened to all those reports? What changes in the local program have been implemented as a result of the reports calling for change? What is the current purpose of Agricultural Education? What should be the purpose of Agricultural Education?

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opportunities to begin meeting family members after practices or contests or when I would drop them off at home after a camp. I also spent time on the weekends attending sporting events, church services, or piano recitals to which my students invited me. More than once, I found myself in situations where I didn't understand the language or I didn't know anyone else in the room, but the initial uneasiness was well worth the rapport that I built with my students.

However, appreciating diverse backgrounds was simply not enough. I was faced with the challenge of establishing and maintaining a classroom community. The classroom community provides students with a sense of connection, value and influence among their classmates and teacher. Students with a high sense of community feel personally known and respected. They believe that they have a significant say in class planning, decision-making and problem solving. And they believe that their fellow students care about them and care about learning (Schaps & Lewis, 1997)

Initially, I had to evaluate my instructional methods. What I found is that I was primarily concerned with the academic aspects of teaching, due to the emphasis from my administration on preparing my students for the state standardized test. I made the decision to implement methods of teaching that addressed not only the academic needs of my students, but the social and physical needs as well. The following steps, found in Brown's (2002) *Becoming a Successful Urban Teacher*, were very helpful as I began to create a classroom community in an unfamiliar urban environment:

### *Develop Mutual Respect with Your Students*

Engage in personal conversation with your students. By sharing some of my personal and professional goals with my students, they were encouraged to develop some of their own goals.

Consider the students' social or physical needs and respond to these needs on an individual basis. My students had several opportunities to travel to FFA camps in the summer. Because it would have been a burden on the family and student to pay for these camps, I had to be willing to help students fill out scholarship applications or write sponsorship letters so that they could secure necessary funding to participate.

Take the time to learn about students' personal lives and modify your curriculum as necessary. My seniors would often ask questions regarding my college experiences. I took time to explain because many of my students were planning to continue their education beyond high school, whereas most of their family members had not.

Students often view teachers as strictly an authoritarian figure. I did not intimidate my students, yet because we had developed a mutual respect, I was able to be an effective teacher and FFA advisor.

### *Develop Trusting and Caring Relationships*

Developing a classroom atmosphere of learning begins with showing students that you care about them. Caring teachers recognize students' social and emotional needs and re-

spond to them as necessary.

Some students lack meaningful relationships in their lives, which hinders their ability to develop trusting relationships with their families, friends or others. However, it is important to find a balance between caring for the students and realizing you are not the parent or the psychologist.

The opportunity that my students had to cultivate important relationships while in the classroom environment encouraged them to also establish similar relationships beyond the school boundaries.

### *Promote Effective Communication*

Listen, listen, listen to your students! Hopefully they will not only be willing to listen to you, but will hear what you are saying.

I encountered days during my first year when I simply wanted to lock myself in my room at lunchtime for some time by myself instead of allowing students to chat with me regarding problems they were facing at school or at home. Although these days are sometimes necessary to help maintain sanity, try to make yourself available so that students know that they can reach you when needed.

### *Maintain High Expectations for Behavior and Academics*

Several of my students entered my class with a history of poor academic achievement. With others, the need for education was not reinforced in the home. I held my students accountable for their performance both in and outside of the classroom. Even small, simple incentives helped en-

## Becoming a Successful Urban Teacher

1. Develop mutual respect with your students
2. Develop trusting and caring relationships
3. Promote effective communication
4. Maintain high expectations for behavior and academics

courage and reward my students for their achievements. They were excited to see their name listed on the honor roll bulletin board in the classroom or have their name read on the announcements for their participation at the fair. A strong sense of classroom community contributes to positive student outcomes. Students who have it do better than students who don't. And teachers who are more successful at creating it are better at helping their students grow – ethically and socially as well as academically (Schaps & Lewis, 1997).

Establishing a classroom community takes time and patience, but the benefits are well worth the extra effort. A concern may be the ability of the students to focus on classroom learning and not spend most of their time discussing family or personal matters. Initially, some students tried to utilize the class just for “talk time”. When they realized I was serious about my commitment to discuss these issues outside of class time, they were more willing to devote their full attention to class material.

Also, because we engaged in personal conversations, my students were aware of the positive impact FFA had made in my life. This fueled their excitement and increased involvement in FFA activities. Classroom management became much easier because students had the ability to monitor their own behavior. Because I was sensitive to what was happening in their lives, I understood when a student told me that they needed a break from class to spend a few minutes collecting their thoughts. If they were having a problem at home or with another student, they were willing to put it aside in class because they knew it would be addressed later.

Regardless of whether you are teaching in the high school you graduated from or a high school located a 1,000 miles from your hometown, the need for a classroom community permeates all learning environments. By developing a mutual respect with students, maintaining trusting and caring relationships, encouraging communication and setting high expectations, an environment can be established that recognizes differences such as race,

social class and family background to establish a productive and rewarding learning environment.

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# Firecrackers and Magic Tricks...Is Providing Meaning That Easy?

By Tracy Kitchel and  
Robert Torres

A teacher has many responsibilities to fulfill. One of those responsibilities is providing meaning to the subject material to be learned. Literature in agricultural education acknowledges meaning as a principle for effective teaching and learning (Newcomb, McCracken, Warmbrod, & Whittington, 2004). For some, providing meaning has been lighting firecrackers to emotionally involve the students and get their attention or doing some kind of magic act to entertain, and then teach a subject matter that has little to no relevance to firecrackers and magic tricks. Does this process work? Do we merely need to get some emotional reaction out of the students to provide sound meaning?

As a part of the brain-based research in education, which has been developed over the past decade, a theme could be that meaning is important in the learning process (Wolfe, 2001; Jensen, 1998). As biology begins to point to the importance of meaning in terms of learning (or retention), education should be responding to this by creating frameworks and practical applications for teachers to utilize. So to answer the preceding questions, from the brain-based research point of view, no – meaning requires a bit more than firecrackers and magic tricks.

## *Brain-Based Research and Meaning*

When information has more meaning, or if it “fits into or adds to an existing network” in the brain, then the chances of it getting stored is much higher than if there were no meaning or network (Wolfe, 2001, p. 103). Our mind is constantly being bombarded with sensory input or information. It’s the brain’s responsibility to sort out the relevant information and bring it to attention. If the brain processed every single piece of incoming information then it would overload with such memory. This is why bringing meaning to what we are teaching is crucial for students to remember or retain information (Wolfe, 2001).

Jensen (1998) introduces several ways or factors that meaning can occur. The first is through emotion, the second through relevance and the third through context and patterns. All three areas have explainable, biologi-

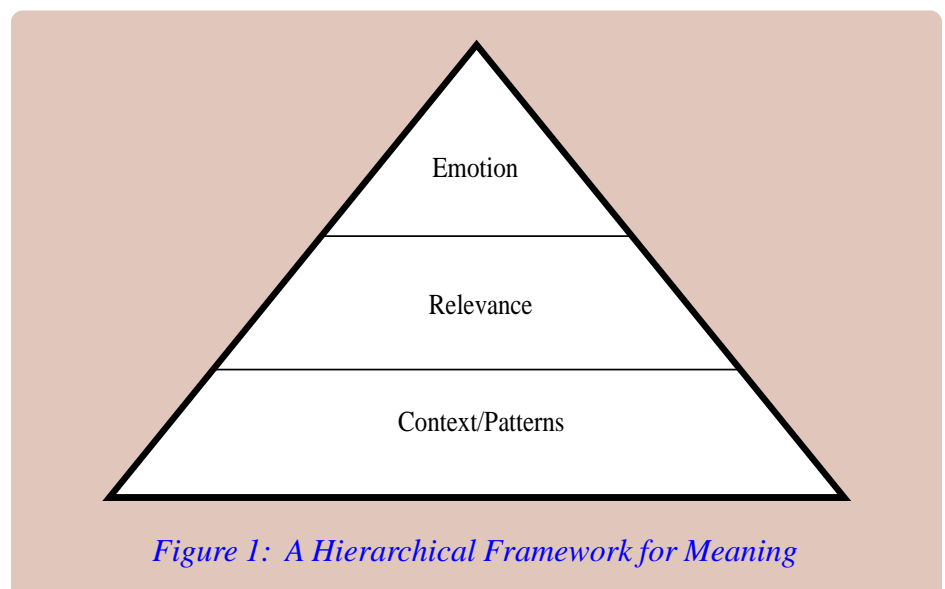
cal connections to the brain.

Given the theoretical background of the three factors, in combination with literal definitions, then a hierarchical framework could be constructed to describe the relationship between the three factors of meaning. This is conceptualized in Figure 1.

The three factors are represented in the three sections of the hierarchy triangle. In constructing differences among the three levels, the following questions were developed to answer the degree of meaning in reference to a particular piece of information or concept that is to be learned:

**Context/Patterns:** What is it compared to what I already know?

**Relevance:** What is it compared to what I already know in relation to me?



*Figure 1: A Hierarchical Framework for Meaning*

**Emotion:** What is it compared to how it will change my psychological state?

Given those questions, then it could be easier to differentiate the degree to which a teacher provides meaning?

### *Practical Applications*

Taking the framework for providing meaning, we are going to go through a few examples of how “haphazard meaning” compares to “structured meaning.” In this particular case, we will look at a non-traditional agricultural education student who lives within the city limits. In the haphazard meaning example, the student has emotional meaning of what milk is. This student is satisfied (psychological change) with milk whenever he or she drinks it. However, the agriculture aspect has little meaning. Looking at the questions of the hierarchy, let’s take a look at how he or she reached emotional meaning in a haphazard way:

**Context/Patterns:** What is it compared to what I already know? Milk is a product that my parents purchase at the grocery

**Relevance:** What is it compared to what I already know in relation to me? Milk is a product that is good for my health

**Emotion:** What is it compared to how it will change my psychological state? When I drink milk, I am happy and satisfied

In the structured meaning example, the student is introduced to milk through his agricultural education

teacher. In this case, the teacher reshapes the student’s perception of meaning. Looking at the hierarchy, let’s take a look at how he reached emotional meaning in a structured way:

**Context/Patterns:** What is it compared to what I already know? Milk is a product of the dairy industry of which I learned about in my agricultural education class

**Relevance:** What is it compared to what I already know in relation to me? Milk is a product that is good for my health; in agricultural education class we talked about other products of milk I consume as well

**Emotion:** What is it compared to how it will change my psychological state? When I drink milk, I am happy and satisfied

In comparing the two scenarios, the student has now patterned in his or her mind why meaning is important now through his or her structured agricultural education class instead of through this haphazard way via his parent’s grocery purchases. When teachers are able to structurally provide meaning, and reach that level of emotion, then, according to the brain-based research, students’ retention of the information is better.

In conclusion, it is important to provide meaning. However, for meaning to really make a difference in the classroom (and biologically), it should occur through a meaningful way. The hierarchy provided gives you one route to do this.

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# “Adventures” in Teaching: Using Adventure Learning

By Scott Burris and  
Shane Robinson

**S**urvivor, Fear Factor, and even *Who Wants to Marry my Dad* - Popular culture has been consumed by reality programming. Every night millions of people sit down to watch as another regular Joe tries to swim through an underwater maze or win a date with a pretty girl. The formula for success is simple. Regular people are placed in extraordinary circumstances – and we all get to watch. Why are we drawn to these types of programs? Can this same formula be successfully adapted to teaching in the classroom?

Is there such a thing as “fun” learning? Does learning always have to be dreaded? Somewhere around third or fourth grade, students often abandon the attitude of “I can’t wait to go to school” for the more familiar “I can’t stand to go to school.” Teachers are constantly challenged to create an exciting and meaningful learning environment. Too many students become bored with school because of the monotony that education in today’s classroom brings.

As teachers, we expect our students to sit completely still in their seats for the entire period, take good notes, ask intelligent questions, and not be too quick to voice their own opinions. We do not like it when students inquire about alternative ways to solve problems that conflict or go against what we teach.

As teachers, we are in control of the learning environment. We like to control what the students learn and how they learn it. Most times, we like the authority of being able to teach our students what we think they should know. In order to be successful in the game of life, they must learn how to interact with each other, voice their own opinions, stand for what they believe in, and solve problems on their own. Therefore, as teachers, we need to re-think our teaching styles and strategies. Students are in need of a challenge. Better yet, students are in need of a “fun” challenge.

## *What Makes Adventure Learning Effective?*

“Students tend to exhibit greater interest when there is activity, love of nature, curiosity, creativeness, gregariousness, desire for approval, altruism, self-advancement, competition, or ownership” (Newcomb, McCracken, & Warmbrod, 1993, p. 31). Adventure learning capitalizes on all of these concepts. Students become active participants in the learning process.

As agricultural education instructors, we agree with this concept because we strive to adhere to the John Dewey philosophy. We agree that learning should be hands-on and experiential in nature. With our incoming freshmen students, we hammer into their heads the importance of learning the FFA Creed. Within the Creed are the words “Learning to do, doing to learn.” Yet, the question remains, why do we not allow students

to learn by doing in the classroom?

Sure, we suffice this need by having students compete in Career Development Events (CDE). We also meet these criteria by ensuring students have a Supervised Agricultural Experience (SAE). However, this does not address learning by doing in the classroom. As agricultural education instructors, we understand the importance of keeping the three circles separate. One might argue that experiential learning is met through courses such as agricultural mechanics and horticulture. But, what about students who do not enroll in these types of courses? Do they not get to “experience” learning? Does John Dewey’s philosophy only apply to a select few? Hence, it is time to re-think the way teachers administer their curriculum and teach their classes. It is time to insert adventure learning into the curriculum!

## *What is Adventure Learning?*

Remember the formula for success for reality programming, regular people placed in extraordinary circumstances and we all get to watch. Successful incorporation of adventure learning activities relies on those same basic principles. Regular students face extraordinary challenges and we all get to watch, or in this case, watch and participate in.

**Adventure:** Your job as facilitator is to plan, create, and provide an “extraordinary” experience. Your students, put in an extraordinary posi-

tion, will take an active interest in what is taking place. This experience will serve as a backdrop for learning. Remember, regular students doing extraordinary things is fun.

**Reflection:** “Wow, what just happen?” That’s often the response that follows the adventure. Through reflection, learners create meaning or “make sense” out of what just happened often wrestling with the questions of “why” and “what if”. The instructor’s role is to facilitate this discussion, highlighting aspects that relate to the learning objectives but allowing students to provide the content of the discussion.

**Application:** Once students have had an opportunity to reflect and construct some meaning from their adventure, it is time to apply that meaning to real situations. This step actually carries learners beyond basic application forcing them to analyze and evaluate processes and activities. While the instructor probes, the students again provide the content.

### *What Will You Accomplish?*

Adventure learning activities have been used extensively for team building and creating group cohesiveness. The very nature of these activities will serve to break down individual barriers to form an efficient, close-knit group. This makes these activities ideal for officer team development, but the scope is larger than just the traditional “officer training.”

As agricultural education assumes a larger role in developing leadership skills among students, many programs are offering courses focused specifically on leadership. Adven-

ture learning activities are a natural fit for leadership development curriculum. Many of these adventures focus on the importance of cooperation and effective communication.

As instructors, we often find ourselves lecturing on the importance of effective communication or group roles and responsibilities. Adventure activities allow students to actually experience situations where communication aided in or possibly hindered their success. Students will find it much easier to connect the newly acquired knowledge to real situations.

While valuable for their contribution in leadership development and team building, adventure learning activities can prove valuable in other areas as well. Many of these activities have a technical twist. Whether students are testing the laws of physics or applying algebraic functions in their quest to “conquer the adventure”, the lessons can be easily adapted to technical agriculture subjects.

### *Bring in the Adventure!*

While ropes courses and challenge parks definitely fit the description, there are many alternative activities that can be conducted in the classroom (or at least right outside of the classroom). Many of these materials can be assembled with common tools on a shoestring budget. The challenge for the instructor is to find these challenges and bring reality into the classroom.

Today’s teachers have access to more informational resources than ever before. Any inquisitive instructor will find a plethora of possible adventure activities to bring into the agriculture

classroom. Whether they are from published books, word of mouth, or personal creations, these activities are sure to create a fantastic learning environment for students.

As instructors try to find balance between teacher-centered and learner-centered instruction, we tend to err on the side of control. Adventure learning activities will provide an alternative to more traditional approaches. Students will jump at the opportunity to become part of the lesson. Remember, many people like to see normal people do extraordinary things. The more creative and challenging the games are, the better they will be for the students.



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# Putting the Science of Agriculture into Instruction: The Why and How

By Greg Thompson and  
Brian Warnick

In the comic strip *Luann* by Greg Evans, Luann approaches her science teacher about the “D” she received on a test. Luann argues that she knew all the answers the night before, but 16 hours later she forgot half of them. Luann continues to plea that if the test were a week from now she wouldn’t know any of the answers, by next year will have forgotten the whole test and finally by the time she is 45, won’t even remember the class. Her science teacher states, “What’s the point Luann?” She replies, “Well, that’s what I’m wondering.” Many of today’s students find themselves in a similar predicament. Evidence is accumulating that skills learned in school today have limited transferability and students are unable to apply knowledge beyond subject matter.

With the increased push to integrate academics into the agricultural education curriculum and the more recent focus on academic achievement and accountability, it is difficult to escape the discussion surrounding these issues. However, as one looks at the benefits of increased integration for programs and students, and increasing the amount of science taught in programs, actually doing it might not seem quite so daunting.

One might ask, “Why should I worry about integrating more science into the agricultural education curricu-

lum?” Most would agree that if the sciences were peeled away from agriculture there wouldn’t be much content left. Agriculture was founded on science and its continued growth is based upon scientific practice. However, just because agriculture is an applied science, doesn’t mean we have been teaching the science of agriculture. Science is embedded in agriculture, and as teachers we need to bring the science to the forefront by introducing the scientific concepts and processes in agriculture to our students.

On the other hand, science without application has no real value. Teachers who teach science to students without real world connections and application are doing them a disservice. Agriculture can be one means for adding these connections and applications to science curricula. Pedagogically, agricultural education’s emphasis on hands-on learning provides students with a distinct advantage in learning science.

It has often been said, “Most science teachers do a good job of teaching the “what” but could do a better job of teaching “how” and “why”. Alternatively, most agriculture teachers do a good job of teaching “how” but could do a better job of teaching the “what” and “why.” Both could benefit from collaboration with the other.” If we teach our students the processes and nature of scientific inquiry as applied to agriculture, the whole field of agriculture becomes open for discovery.

One might also ask, “Even if I wanted to integrate more science into my teaching, how can I do it without sacrificing the time tested components that make agricultural education successful? How can I begin to emphasize the science concepts into the agricultural education curriculum?” The following are some suggestions:

## *Teach Using Scientific Inquiry and Experiments*

Science should be taught the same way that scientists practice it. Science is not just a collective group of facts, principles, and laws in a text book, but is a process for discovering the world around us. Many new technologies and processes in agriculture have been discovered through the application of science. Integrating science helps students understand the science of agriculture through a love of discovery, scientific inquiry, problem solving, and learning with experiments. This approach fits well within our profession’s “hands-on learning” paradigm and with the use of the problem solving approach to teaching. By turning an activity into an experiment or by teaching using an inquiry approach, students will participate in the creation of their own knowledge resulting in the development of higher order of thinking skills. Students will also learn to practice science the way scientists practice science.

## *Share Resources With Science Teachers*

Just as many science teachers

have a limited background in agriculture, agriculture teachers may have a limited science background. Agriculture teachers should develop a working relationship with the science teachers in their schools, as both have something to offer each other, whether that is a knowledge base or resources. The use of greenhouses, aquaculture units, land labs, and agricultural mechanics laboratories can be valuable tools for science teachers, and the use of microscopes, dissecting tools, balances, test tubes and beakers can be valuable resources for agriculture teachers.

In a recent study conducted at Oregon State University, researchers (Warnick, Thompson, & Gummer, in press) found that science teachers had positive perceptions toward agriculture programs and integrating science into the agriculture curriculum. Almost three fourths of the science teachers surveyed believed a strong agriculture program exists in their school. Science teachers also agreed (more strongly than agriculture teachers) that science teacher support will improve if integration of science is increased in agriculture programs. Science and agriculture teachers indicated they do want to work together. However, less than half of the science and agriculture teachers reportedly worked together in a collaborative effort to integrate science and agriculture. While the results of this study are specific to Oregon, it may be surprising how supportive science programs in other locales may be, particularly if the benefits to collaboration are understood.

### *Teach Proper Scientific Concepts and Terminology*

Just as we teach students the proper terminology for shop tools and

equipment, we must also teach them the proper terminology for scientific laboratory apparatus. We talk about the importance of speaking the language in our field, such as using modern terminology in the livestock industry. We must also demonstrate our knowledge of science by talking the talk when emphasizing scientific concepts.

### *Make Good Use of Resources*

Be aware and make use of available resources, both in the school's science department and in the local community. Some suggestions include using agricultural scientists as guest speakers and inviting the science department to participate. Working with the science teacher to strengthen and develop student agriscience projects, working with the science department to include agriscience projects in the school science fair thereby exposing student science in-

vestigations to the public. Developing partnerships with researchers in industry and higher education provides another avenue for students to extend their agriscience projects and career opportunity awareness.

### *Align the Curriculum With Science Standards*

Work with the science teachers in the local school, with other teachers in agricultural education, and with state program directors in agriculture and science to align the curriculum with state and/or national science standards. Not only will this better define the science in agriculture, but will also be a useful tool in demonstrating the science of agriculture to stakeholders. When science teachers and state and district science program leaders are involved in this alignment, a pathway may be forged for future cooperation and for granting science credit for agricultural education coursework.

## **Emphasizing the Science Concepts Agricultural Education**

Teach using scientific inquiry and experiments

Share resources with science teachers

Teach proper scientific concepts and terminology

Make good use of resources

Align the curriculum with science methods

Develop a scientific attitude

It's more than just the biological sciences

Keep SAE and FFA integral

Learn from those who are successful

Just do it!

## *Develop a Scientific Attitude*

Sometimes all it takes is for students to look like and feel like scientists. Just as some kids dress like gangsters and then tend to act like gangsters, we can help students develop a scientific attitude by providing science equipment and laboratory apparel that puts them in the “science zone.” Additionally, point out the scientific concepts and processes in even the most traditional components of agriculture. The history surrounding the major breakthroughs in agriculture is rich with the nature of the scientific process.

## *It's More Than Just the Biological Sciences*

When we think of integrating science into the agricultural education curriculum it is easy to see how well the concepts in the life sciences align with the concepts we teach in plant and animal science. Don't let the alignment and integration end with the life sciences. Our agricultural mechanics courses can be more than just a “shop” class when mathematical and physical science concepts are integrated into the curriculum. In using agricultural mechanics to teach scientific principles, students can see immediate results rather than having to wait for the longer term effects of an experiment on plants or animals. Additionally, the application of chemistry has a huge role in agriculture from fertilizers and pesticides to food and fiber processing to waste management. In a near perfect world (school), physics would be taught first, followed by chemistry and then biology because of the concepts truly builds on each other. In a perfect world (school), agriculture would be integrated

throughout all sciences for all students.

## *Keep SAE and FFA Integral*

Supervised Agricultural Experience Programs and FFA have been time honored facets of agricultural education. It is not necessary to sacrifice these integral components of our program to develop a more science-based curriculum. There are many science-based SAE opportunities and FFA activities and events that fall into the realm of a science-based curricula. Don't forfeit a quality component of our program to develop a more academic curriculum.

## *Learn From Those Who Are Successful*

Agriculture teachers throughout the nation have been known to support colleagues. Seek help from those that are integrating science into their curriculum. Take a professional day or time in the summer to visit programs that integrate science - it will be time well spent. Teachers who are successfully integrating science into their curriculum should be sought out by state leaders to provide inservice programs to others in the state.

## *Just Do It!*

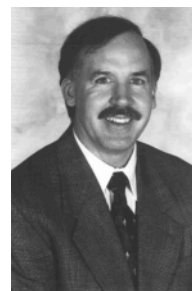
Finally, just give it a try. One doesn't have to be a scientist to be successful. A major overhaul of curriculum or huge investment in purchased curriculum is not necessary. A few changes in the direction of including more science in the curriculum will ultimately lead to a program that consistently emphasizes scientific principles and practice.

Integrating science will engage

students in hands-on, minds-on curriculum. Today's youth are determined and love a challenge. If you don't believe that, watch them spend hours studying and working to get to the next level in a Game Cube or Xbox. We just have to challenge students to succeed in our classrooms by giving them meaningful work and motivating them to find the answer. The use of scientific inquiry in the agricultural education curriculum can provide the challenge as well as the tools students need to be successful in a rapidly changing industry. Successful use of these tools will open their minds to a lifetime of discovery.

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# Student and Teacher Rapport: An Essential Element for Effective Teaching

By Penny S. Hasse Wittler and  
Margaret Hill Martin

Who was your favorite teacher when you were in school? What image(s) does that question conjure up in your mind? Do you think of someone who cared about you – whether learning took place or not? When a teacher shows he/she genuinely cares about a student it tends to set students apart from academic work and helps gain their cooperation, keeping them motivated and on task. Generally, this might be viewed as teachers having positive rapport with students.

Does positive rapport with students affect motivation? Does it maintain motivation? What about the impact on non-motivated students? Building rapport with students is an accomplishment for some teachers and, one might speculate that students will become more motivated, thus willing to learn. As agriculture educators, building rapport with students can be an essential element in the teaching and learning environment. However, rapport does not exist somewhere as a single magical key that will turn lifeless, disinfected students into inquisitive, adoring scholars (Rusch & Dean, 1993).

What is this construct we call *rapport*? Merriam-Webster's collegiate dictionary (1984) defines rapport as relation marked by harmony, conformity, accord, or affinity. Based upon this definition therefore, rapport

signals a relationship exemplified by agreement, by alignment, or by likeness or similarity. This depicts to the extent, then, that one is in agreement or alignment—whether verbally or nonverbally, or both—with another person, or bear some likeness to him or her.

Essentials of building rapport include harmonic situations and focus on the building of self-esteem in oneself and others by creating a warm, honest, and sincere human relationship. Building a warm, honest, and sincere rapport comes easy with best friends, families, companions and neighbors. Why then is it so challenging to create this type of bond with students?

Human nature alone causes complications to arise right from the beginning. As humans we are unique and complex individuals with our own set of fears, doubts, and insecurities.

According to Spiegel (1994), building rapport takes hard work, concentration, and commitment. Human nature alone causes complications to arise right from the beginning. As humans we are unique and complex

individuals with our own set of fears, doubts, and insecurities. Even the act of saying “Hi” to a stranger can be interpreted as an enormously courageous task. Although difficult for some, building rapport *can* be learned just as with any other skill (Spiegel, 1994).

The younger the student, the more we feel that they need coddling such as the smaller children in elementary schools. But once a student reaches the teenage years and secondary school, the uncertainty of childhood should be replaced by the certainty of school routine and structure. With this new routine and structure, some people assume that all the fun that was once enjoyed in the classroom and learning becomes a matter of business at hand.

Learning is the crucial factor, but high school students need to feel welcomed and accepted just as much, if not more, than younger students. By using the first day of class in the high school to bond with students, positive relationships or the building of rapport begins, and thus, the business of learning can begin.

What agriculture teachers do the first few days of school will determine success or failure for the remainder of the school year. During this first day, teachers have only one chance to make a good impression and put their students at ease. Without the feeling of trust in the teacher and security within the class, students may experience a feeling of inhibition, which affects learning.



Marzano, (1992) stated that for students to learn, they need a positive atmosphere and a positive attitude toward learning. This is the first dimension of learning, and without a positive attitude, learning is inhibited. Teachers are responsible for setting the stage on that first day of school.

Classroom communication and building rapport with students are two important attributes that teachers need to utilize (Davis, 1998). Davis revealed a detailed list of helpful hints for building rapport with students:

- Learn students' names quickly
- Be willing to see students outside the classroom
- Be attentive and sympathetic to students
- Take at least one class period, or parts of two or more, to dispense with the course material and discuss a subject such as professional ethics or your own experiences
- Solicit and respond to mid-course feedback
- Provide food during special occasions in class or for an end-of-term party
- Understand that relationships with students do not end when the course ends

Teachers that the students feel they can truly trust are sought after for advice, respected by students, and are instrumental in maintaining communication with students long after graduation. This is what teacher/student rapport is all about and is valued as a reward in the education profession.

Another essential element in building rapport with agriculture students is the use of humor. More than jokes and laughter, humor also in-

volves a positive spin on reality as opposed to a negative one. The negative view deals with sarcasm and cynicism, rarely appropriate in any classroom. Sarcasm and cynicism diminish learning, enhance stereotypes, and actually limit a person's perspective. Negative humor, the antithesis of learning, can lead to the perpetuation of closed-mindedness.

Humor is a social skill that helps students (and teachers) cope with stress, enhance his or her sense of well being, alleviate unhappiness, depression, anxiety, and boost self-image. Among the many benefits of humor are the effects on students' physiology and psychology, the stimulation of creative and flexible thinking, the facilitation of learning, and the improvement of interest and attention in the classroom. Although humor-related behavior exceeds all other types of emotional behaviors combined, little research has been conducted into laughter. What are the effects of laughter and humor on teacher and student rapport in high

school agricultural education classrooms? If a teacher and his/her students can laugh together, they can most likely work together and plan together as well.

Many high school teachers use humor in a variety of ways during the teaching process. A positive climate with minimal stress is enhanced when the teacher can laugh at themselves and with the students (never at them). It is in this enhanced climate that the student truly shares knowledge and feelings; voicing possibly brilliant insights — all possible only when rapport is established at the beginning.

When teachers confront a negative student with positive humor, they often find that this use of humor is an effective tactic to diffuse the student's anger and hostility. It is crucial, however, that a student never feels that he or she is being made the object of ridicule. Should a teacher ridicule a student, deep and strong resentments often result that may last for a long time.



Building a classroom community requires the teacher to practice good communication skills.

Another aspect to using humor in building rapport touches on socialization. One of the major functions of all educational levels—kindergarten through adult—is to acculturate knowledgeable, understanding, compassionate, and empathetic new members of our society. Effective teachers are individuals who can take themselves lightly but take their work in life seriously as they encourage others to do likewise. They are individuals who can modulate a tense, difficult situation into intriguing challenge, who can interject an uplifting gesture into stressful moment. Agriculture teachers can encourage students to appreciate the universality of the human condition; that we are all here to make the world work by complementing one another and by modeling achieving power through knowledge and equality, not through exploitation, manipulation, and one-upmanship.

As agriculture teachers teach their topics, learning is facilitated through enthusiasm and a generous sharing of knowledge as teachers and students laugh at foibles and provide encouragement to take risks in the safe environment of the learning situation. The socialization process involves learning how to be with ourselves, with others, with students and teachers and with the challenges and adversities life offers. Thus, teachers teach students how to learn this valuable skill, using humor as a tool of growth and wisdom.

While the construct of rapport is a huge area of study and is still an important area to explore, many agriculture teachers can relate to its' importance in the agriculture classroom. Agriculture teachers spend a great amount of time with their students through Supervised Agricultural Ex-

perience Programs (SAEP), the FFA, and during unique and highly involved classroom and laboratory activities involving both students and teacher. For most agriculture teachers and teachers in general, building rapport is fun and truly does contribute to making a positive difference in the lives of students.

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Agriscience provides a process for discovering the world around us.

# Bigger than His Business: One Expert's Opinion of Teaching in Agriculture

By Mike Martin and Anna L. Ball

“Every man is, or ought to be, bigger than his business” (Davenport, pg. 171). These words of Eugene Davenport, an early pioneer in agricultural education, describe the knowledge, skill, and dispositions of teaching agriculture. The in-depth knowledge of the fields of agriculture, possessing extraordinary communication skills, being a problem solver, having the ability to adapt to changing situations, and becoming a life long teacher are all traits of a successful agricultural teacher that make them larger than their business.

I learned these important lessons through a two-hour conversation I had with Dr. Lloyd Phipps, one of the nation's leaders in the knowledge base of teaching agriculture. Even though, he's been officially retired from the teaching profession for over 25 years, Phipps still represents the best of what teaching agriculture offers. Mr. Phipps shared with me his beliefs and values of what makes an agricultural educator.

Lloyd Phipps began teaching high school agriculture in 1939 in Niantic, Illinois. He began working at the University of Illinois at Urbana-Champaign in 1945 when he was hired as an assistant professor. During the 1950s he became a full professor and head of agricultural education at the university. His textbook, *Handbook on Agricultural Educa-*

*tion in Public Schools* (later co-authored with Edward W. Osborne), is still quoted by many professors as an authoritative work in agricultural education. Mr. Phipps retired in 1977 to return to the farm. In some respects, that is only the beginning of the legend of Lloyd Phipps. I initially approached Dr. Phipps with questions regarding the past and history of agricultural education, but in return gleaned much more than just simple facts and dates. Dr. Phipps shared his stories and beliefs about what it means to be an agriculture teacher.

The qualities that comprise an agricultural educator separate them from many other professionals, and the subsequent challenges that agriculture teachers face are unique to the discipline and require much of the teacher. Phipps described communication skills, knowledge, perseverance, problem solving ability, and life long commitment that an agriculture teacher must possess to be successful. Mr. Phipps is truly an inspiration for any current or aspiring teacher, and the expert knowledge of his past serves to enrich the definitions and ponderings of what it means to be an agriculture teacher today. I left that interview a much richer individual, and with a deeper sense of what my future as an agricultural educator might entail.

First, teaching agriculture requires a well developed set of interpersonal and communication skills as teaching agriculture is a highly social

process. Currently, such skills are called essential employability skills, and educational reforms across the nation are charging educators in all disciplines to develop such skills in all students. Interestingly, as agriculture teachers at the secondary level possess vast amounts of these essential employability skills, they also strive to develop such skills within their own students. While the communication and interpersonal skills needed to be a teacher are developed in an academic institution, the agriculture teacher becomes a true expert through experience.

That is why agriculture teachers often diverge into other fields of agriculture after teaching. Dr. Phipps noted that teaching agriculture prepares an individual to work in a variety of agriculture sectors. “If you look around some people teach their entire career in teaching and retire as a teacher. Other people teach and then they go into other agricultural occupations. Maybe some of them go into farming or banking. We have several former agriculture teachers that are bankers. We have former successful agriculture teachers that end up in politics. So there is great opportunity. You learn to work with people, you learn to talk to people, and you learn to relate to people. Which means you that after you have had that kind of experience you can go out and do anything” (Phipps, personal communication, April 11<sup>th</sup>, 2003). The salary of teaching is unmatched by the skills and experience of teaching. This



is why agriculture teachers are highly sought after by many in the agricultural industries.

In addition to communication and interpersonal (or employability) skills, the teaching of agriculture has been and continues to be a problem solving profession. The problems that affect agriculture are vast and ever changing. These challenges are as far ranging as the incorporation of GPS into crop production to managing a beef operation during an outbreak of mad cow disease. Teachers are often at the forefront of preparing students for solving such problems.

Dr. Phipps denotes that problem-solving is as important now as it was in 1918. “There is one big commonality. We emphasize problem solving.... That’s what agriculture has to do, is solve problems. In the past few years we have had a rootworm problem. There is no way some one could tell me how to take care of rootworms when I started teaching because we didn’t have rootworms.... We don’t teach people the answers to problems because the answer will change and the problems will change (Phipps).” Teachers face complex and ill-structured problems that are truly unique to agriculture, and the teaching of problem solving is an essential skill in being an agriculture teacher.

Finally, the agriculture teacher knows that nothing is permanent but change. Agricultural educators are constantly bombarded with changes that are unique to their profession. This requires not only problem skills, but also the ability to adapt and be flexible to change. The fundamental changes that have marked agriculture over the last ninety years are evident when examining documents from the

very beginning of agricultural education. Dr. Phipps has seen these changes and the struggles that agricultural teachers have endured.

“Agricultural education got a reputation for preparing farmers. Then as you know agriculture changed. Much of the agriculture went off the farm. Today I use consultants and services of various kinds in farming we used to do on farm. That opened up a lot of jobs in agriculture other than farming. Agricultural education was a little slow in adapting in that change. The public was even slower in their concept of agricultural education.... Agricultural education did change to prepare people in all fields of agriculture. But the public did not realize at first that that change had taken place. We got a rather bad reputation as a result many departments went of ex-

istence. Agricultural education went through some hard times as a result.... We finally got across to the public that we were providing agricultural education for all of agriculture... That is the most important change. We got across to the public that we are preparing people from kindergarten to university level in agricultural education... As a result we got agriculture school in Chicago and we got agriculture programs that are growing. The ones that we have are strong and there is a lot of teaching opportunities” (Phipps).

Undoubtedly, agricultural education will face more problems in the future, and agriculture teachers will likely face the brunt of these changes. Yet, it is the agriculture teacher’s proven ability to adapt to changes that promises the bright future for agricul-



A classroom community requires the development of a trusting and caring relationship between the teacher and students.



ture and agricultural education.

As noted by Phipps, the final link in being an effective agriculture teacher is a well-rounded knowledge in the discipline of agriculture. Agriculture as a discipline no longer pertains to farm-specific or even a specific vocational skill set. The teacher must have a working knowledge of a variety of disciplines to effectively teach today, which requires the teacher to be well-rounded as well as lifelong learners. After listening to Dr. Phipps discuss his varied career endeavors, I posed the following question: “Do you consider yourself a jack-of-all-trades?” He at first laughed surprisingly at the question then answered:

“Never has that question been asked to me before. Well you know I have done quite well. As I said when you prepare to teach agriculture you prepare them to do almost anything... I consider [my current marketing business] directly related to my teaching and preparation to teach. But I majored in agronomy, and then went to teach. I have written books in agricultural education, animal science and a lot of books in the field agriculture mechanics. I have written books in almost every field of agriculture. So maybe I am a jack-of-all-trades. Here I am in agricultural economics and I was never trained in agricultural economics. And here I am a recognized authority in marketing locally” (Phipps).

The list of agricultural sciences and disciplines that encompass and form the foundations for agricultural education is extensive. Plant, animal, and soil science, mechanics, electricity, business, horticulture, and floriculture are all enormous fields of studies,

and are merely the beginning of the vast knowledge that an agricultural educator must be familiar with to teach. Thus, being a “jack-of-all-trades” and a lifelong learner are both essential to teaching agriculture.

...the final link in being an effective agriculture teacher is a well-rounded knowledge in the discipline of agriculture.

The final characteristic of agriculture teachers as noted and modeled by Dr. Phipps is that the agriculture teacher never stops being a teacher. Inside the classroom, outside the school, in FFA, and long after they retire, agricultural educators never stop being teachers. This is undeniably true for Dr. Phipps. After retiring in 1977 he has done everything but slow down. He gradually became involved in the commodity business. This culminated in 1995 with Mr. Phipps establishing an adult education commodity class through his local farm bureau.

“So I decided in 1995 to give it another shot after 50 years, and see whether I could still do it. I contacted the Champaign County Farm Bureau and the Champaign Extension Office and asked if they would help sponsor the program if I volunteered to teach it... So I started in 1995 and the first meeting I had twelve people there. It has gradually grown and has a membership of right at a hundred members. I had a meeting April 7<sup>th</sup>... and I had eighty people there. That was my eighty-sixth consecutive meeting

of an adult farmer corn and soybean marketing course” (Phipps).

Dr. Phipps also wrote his 41<sup>st</sup> book (counting major editions) this past April. The book was entitled *Introduction to Agriculture Mechanics*. Even in retirement, Phipps has been an expert teacher of agriculture and embodies the notion that agriculture educators never stop being teachers.

Dr. Phipps is an amazing individual with a passion for teaching. Phipps argues that being an agriculture teacher made him what he is today professionally. The qualities that he represents are also some the core values that shape the discipline of agricultural including: interpersonal and communication skills, problem-solving, adaptability and flexibility, well-rounded knowledge and lifelong learning, and being a teacher both inside and outside of the classroom.

While Phipps’ notions of what it means to be an agriculture teacher can serve to inform the teaching and learning base in agricultural education today, his drive, determination and heart model the true essence of agriculture teachers nationwide as he concluded our conversation with, “I guess someday I will have to quit, until then I am going to keep doing it” (Phipps).

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# From Celerifere to Tricycle: Using National Board for Professional Teaching Standards as a Tool to Steer Agricultural Education

By Mike Bartholomew and  
Dianiele Kidd

In the late 1600s, a Frenchman invented the *celerifere*, consisting of a timber beam to which two in-line wheels were attached. This primitive bicycle did not have handlebars or a comfortable seat. The rider's feet pushing the wheels were the only energy source for momentum and steering. During 1865, pedals were applied to the front wheel of the two-wheeled *velocipede*. Five years later, the first chain-driven "bicycle" appeared with extra large wheels as manufacturers recognized that one rotation of the pedals resulted in extra distances. However, the rider sat high above the center of gravity and one quick stop of the front wheel caused the entire bicycle to rotate forward and flip the rider. While bicycle riders were risking broken necks, distinguished ladies and gentlemen took a spin on an adult "tricycle" without concern for injury since their weight was evenly balanced.

In many ways, the development of the tricycle parallels the progress of agricultural education. The passage of the Smith-Hughes Act in 1917 was the national answer to the public's demand for public schools to provide a practical-based education. Like the *celerifere*, which had two components, early agricultural education also consisted of two components: Supervised Agricultural Experience (SAE) and classroom/laboratory instruction.

Today, the agricultural education model resembles a tricycle with a large front wheel consisting of classroom and laboratory instruction with two smaller supporting wheels of SAE and FFA (Retallick, 2003). In today's educational world, we need to make sure that our tricycle has all of the necessary parts to make it complete.

Just as the pedals improved the velocipede, early teacher training was profited by additional educational opportunities provided through summer institutes and supplemental in-service training. Teachers serve as the "pedals" of the tricycle – providing the momentum to carry out the total agricultural education program. Community assistance, through advisory and alumni collaboration, provides teachers with opportunities to have additional support, just as the seat on the bicycle provides reinforcement for the rider.

Teachers serve as the "pedals" of the tricycle – providing the momentum to carry out the total agricultural education program.

The cry for improved public education was revealed with the 1983 release of the report *A Nation at Risk: The Imperative for Educational Reform*. According to this report, business and military leaders complained they were required to spend millions of dollars on costly remedial education and training programs in such basic skills as reading and writing. Although our agricultural education tricycle has three wheels (classroom/lab, SAE, and FFA), pedals (teacher), and a seat (community support), something is still missing.

As a teaching profession, we are in need of national standards, or handlebars, to improve and steer the agricultural teaching profession, especially in the times of *No Child Left Behind* legislation. Consistent with *No Child Left Behind*, the National Board of Professional Teaching Standards (NBPTS) places emphasis on parent involvement and promotes the retention of highly accomplished teachers. The NBPTS helps guide agricultural education professionals as they strive to move their "tricycle" through this time and throughout the 21<sup>st</sup> century.

Many teachers are already doing activities in their classrooms that meet the National Standards; however, they may not be aware that what they are doing can be used to show that they are meeting the expectations of accomplished teachers as set forth by the NBPTS. There are things that every agricultural educator can do to

meet the standards. The NBPTS process is a yearlong performance-based assessment of actual teaching practices. Candidates submit a portfolio and videotapes that include analysis of classroom teaching and student learning. The thirteen standards of the National Board can be broken into the different elements of the tricycle model. Six elements are highlighted below:

### *The Front Wheel: Classroom/Laboratory Instruction*

- Standard II: Knowledge of Subject Matter
- Standard III: Learning Environment
- Standard V: Advancing Knowledge of Career and Technical Subject Matter
- Standard VI: Assessment
- Standard VII: Workplace Readiness

Both Standards V and VII can be met by providing real-world, hands-on situations for students in the classroom/lab. One such activity is growing a crop of poinsettias. The students are advancing their knowledge of career and technical subject matter as they learn the various aspects of growing the plants – from potting up the cuttings, to pesticide safety, and pinching the plants for fuller growth. Students develop workplace readiness skills as they learn accounting and track the inventory of plants and supplies.

As students sell the poinsettias to groups and individuals that come to the school greenhouse, they are developing “first-hand” customer relations’ skills. Having students participate in the full production cycle of growing poinsettias - from pot to customer - is one example that illustrates how the agricultural education teacher

can meet Standards V and VII of the NBPTS.

### *One Rear Wheel: Supervised Agriculture Experience*

- Standard I: Knowledge of Students
- Standard VIII: Managing and Balancing Multiple Life Roles

Before teachers can effectively teach, they must know their students’ assets and deficiencies. One way Standard I can be met is to use available records or collaborate with school staff members that have had previous contact with the student. Agricultural educators are fortunate to have a method of assessing interests and judging progress of students’ SAE projects by conducting regular home visits. This one-on-one teaching opportunity allows the teacher to provide supplemental instruction while gaining knowledge about the individual student. Using the student’s own knowledge of the subject matter is a valuable resource that can be readily tapped in the classroom setting to provide real-world examples to the other students.

### *The Other Rear Wheel: FFA Activities*

- Standard IV: Diversity
- Standard IX: Social Development

The best way teachers can meet Standards IV and IX is by incorporating FFA activities into their program. A strong Program of Activities can be developed to instill social characteristics such as self-awareness, confidence, character, leadership, and sound personal, social, and

civic values and ethics (National Board of Professional Teaching Standards, 2004). At Southern Nash High School, chapter members hold a seat belt awareness campaign.

This activity requires members to collaborate and develop methods of carrying out the program. In doing so, students share ideas and develop character by learning to work with others. Students count seatbelt wearers in the parking lot once a month to tally the percentage of drivers that are wearing seatbelts. Participating in this program has helped our members actively show leadership by expressing their views about the importance of wearing seatbelts to their peers. Each month as the program continues, students are showing more self-awareness about actually wearing their seatbelts. Through committee work and programs that allow members to express ideas and learn values, agriculture teachers can meet Standard IX of the National Board.

### *The Seat: Support*

- Standard XI: Collaborative Partnerships
- Standard XIII: Family/Community Partnerships

In order for any agricultural education program to have continued success, support from stakeholders in the education arena is crucial. Accomplished teachers can partner with colleagues, the community, business and industry, and postsecondary institutions to expand and enrich learning opportunities available to students and to simplify school-to-work transitions. As a result of North Carolina State University’s Agriculture Education Club’s annual Ag Ed Day, students from our high school are introduced to vari-

ous agricultural fields of study as well as learning about different aspects of campus life.

Another way that teachers can fulfill Standard XI is through after school programs. Our school has a program called “Tuesday Tours”. Monthly, local agribusinesses support the school/industry partnership by allowing students to tour their facilities. Students tour businesses such as farming operations, agriculture tourism farms, aquaculture production operations, and commercial greenhouse facilities. Business owners or facility managers expose students to course work and education requirements needed for success in the agriculture and business industry.

*The Pedals (teacher serves as the pedals)*

- Standard X: Reflective

Practice

- Standard XII: Contributions to the Education Profession

### *Putting All Of The Parts Together*

Meeting the National Board of Professional Teaching Standards can help agricultural educators put together all of the parts necessary to make up the tricycle model. However, just because a tricycle has all the components, it does not always make a successful program. Just as there are different kinds of tricycles with different levels of quality – some are plastic, some are metal, some have bells and whistles, or even tassels - there can be different programs with varying degrees of quality. It is up to each of us, as agricultural educators, to make sure that we meet the Standards and become accomplished teachers, in order to keep agricultural education moving through the 21<sup>st</sup> century.

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*Mike Bartholomew and Daniele Kidd are National Board Certified agriculture teachers at Southern Nash High School in Bailey, North Carolina.*

## THE AGRICULTURAL EDUCATION MAGAZINE ARTICLE PARAMETERS

1. The best articles for *The Agricultural Education Magazine* are the ones that have a clear point and share practices that can be used in the “real world” of teaching agriculture.
2. Refer to the latest issue of *The Magazine* to determine the dimensions of similar articles.
3. Final copy should be approximately two pages. A four page, double-spaced manuscript is approximately the proper article length.
4. Articles should be accompanied by a recent headshot of the author(s).
5. If the author(s) has photos and/or drawings appropriate for the “theme issue,” make sure the photos are of high quality and tell the story. Only hardcopy photos are acceptable to the printing company. Digital photos are not acceptable.
6. Manuscripts should be sent to the Theme Editor if at all possible. Articles may be sent to the Editor if that is the preference of the author(s). Theme articles get first priority in article selection for publication. General articles will be used when space is available.
7. If your manuscript is published, you will receive a free copy of *The Magazine* along with a letter from the Editor.



# LifeKnowledge is Good Teaching!

By Kyle McGregor

As a teacher educator who has been challenged by the National FFA Organization, John Deere, the USDA, and my peers to introduce the new “LifeKnowledge” curriculum to my preservice teachers, I can honestly say that I am proud to be put to the task. It is exciting to see a curriculum that has been created on the basis of good teaching theory, as well as being empirically rooted. New concepts such as active learning, learner-centered education, and cooperative learning have all been a part of agriscience programs for many years, minus the semantics.

This article is an effort to offer more of what LifeKnowledge has sparked for teaching in Agricultural Education. The following are five techniques that; (1) are quick and easy to use; (2) increase your effectiveness and enhance student learning; (3) promote active/cooperative learning, and a learner-centered atmosphere; (4) encourage reading, writing, listening, and comprehension skills; (5) incorporate multiple intelligences, brain-based research, and learning modalities into your teaching; and (6) will make you a star with your students, fellow teachers, parents, and administrators. I have had great success with each, and would like to share them with you!

## *Background Knowledge Probe*

Just as any coach knows the abilities and talents of his or her play-

ers on a team, a classroom teacher can also study what prior knowledge students bring to a lesson. The background knowledge probe is a very simple technique that is designed to gather information on a topic before it is taught. This technique (1) energizes the students’ mind in relation to the topic, (2) gives the teacher an idea of what their students know about the topic before the lesson, and (3) gives students a sense of ownership in the learning environment.

### *Procedure:*

1. Prepare two or three short answer questions that relate to the topic you are ready to teach. Prepare the questions in a manner that will gather what students know about the topic without being confusing.

2. Write the questions on the board or hand them out as a questionnaire. Instruct students to answer them directly and not to over-elaborate on their answers. Encourage thought provoking answers that describe what the students know related to the topic.

3. As soon as possible, preferably the next class meeting, report back to your students in regard to what you learned from their answers. Express to them how their answers will affect not only what you plan to teach, but also what they should expect as learners.

### *Directed Paraphrasing*

Directed paraphrasing is com-

monly used with reading assignments in order to check for comprehension. Before, during, after, or outside of class, ask students to briefly, and in their own words, paraphrase an assigned reading and hand it in. This method allows you to check for misconceptions in students’ reading as well as reinforce reading skills.

### *Procedure:*

1. Assign students a passage to be read inside or outside of class.

2. Casually ask students to paraphrase or summarize the reading in four to five sentences.

3. Analyze the summaries and report back to the group concerning their perceptions of what was read. Take time to comment on any trends, missed details, or misconceptions.

### *Lesson Re-Write*

The lesson re-write is an excellent technique that immediately challenges students to think about what has been taught. The lesson re-write is performed at the end of a lesson and requires students to recall as much information about the lesson as possible without the aid of notes or text. The technique challenges student’s learning through anticipation, as well as teamwork, all the while reviewing what was taught.

### *Procedure:*

1. Teach a lesson as you normally would during class.

2. Ten to fifteen minutes before class is over ask your students to put their notes away and select a partner. (You may assign partners if you wish.)

3. Ask your students to recreate the lesson in as much detail as possible without the aid of their notes. Have students record the lesson on paper in an outline format.

4. Collect student's papers and review the results.

### *Listen-Write*

Listen-write is an excellent technique that is used during a lesson, which is designed to enhance students' listening and analytical skills. Students are challenged to listen to small portions of a lesson without taking notes, then they are asked to record the information as they remember it. Keep the pace quick and coach students on what should be recorded.

### *Procedure:*

1. Explain to students that the lesson will be delivered in small segments and that they will not be allowed to hold their writing utensils until instructed to do so.

2. Deliver the lesson in short segments. After each segment, have student's pick-up their pen or pencil and develop notes on what was taught.

3. Have students compare notes with a neighbor to check for accuracy, place their writing utensil back down, and prepare to listen to the next segment.

### *Muddiest Point*

The muddiest point is probably the most simplistic, as well as least time consuming technique mentioned in this article. Muddiest point is applied after a lesson and is designed to (1) allow the teacher to get feedback on what students actually learned, and (2) challenge students to record what they might not have understood in the lesson.

### *Procedure:*

1. Ask students to record on a piece of paper what they felt to be the concept that they might have had trouble understanding. "What was your muddiest point?"

2. Collect the responses, analyze them, and re-teach or adjust the lesson as necessary.

### *One-Minute Paper*

The one-minute paper can be utilized following a lesson or assignment in order to have students record what they learned in one minute. The paper can also focus on a question that you pose to the class following a lesson or during the next class period.

### *Procedure:*

1. Stop your lesson three to five-minutes early and ask students to place a single sheet of paper in front of them.

2. Explain to students that they have one-minute to describe the lesson, or answer a question that you pose. The question may relate to any segment of the lesson. All answers should be in paragraph form.

3. "Play-up" the situation by looking at your watch and telling your

students, "On Your Mark!", "Get Set!", "GO!"

4. Collect the responses after one-minute and evaluate what your students recorded.

There are three qualifications for utilization of the above techniques. First, never try one on your students unless you have personally gone through the techniques yourself. Second, if you think that you will need five minutes for an activity, plan for ten. Thirdly, always give students feedback concerning the data that was collected. Remember to have fun with all of the techniques and change them to your liking. "The intelligent man is one who has successfully fulfilled many accomplishments, and yet is willing to learn more." - Ed Parker

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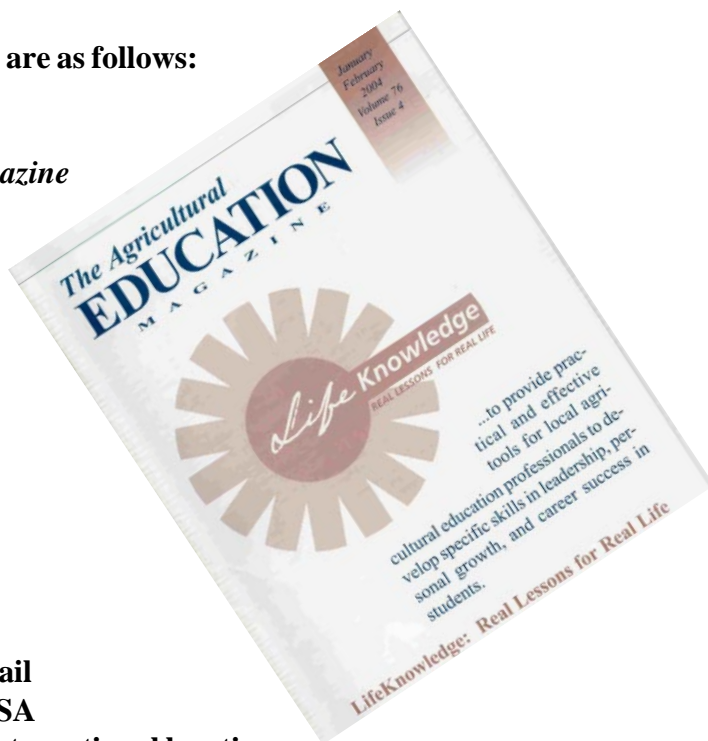
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