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“Eenie, Meenie, Minie, Moe...Pick the Curriculum that best fits Joe!”

What do bath towels, animals and curriculum have in common?

By Billye Foster

Have you ever thought about bath towels? I mean big, fluffy, soft towels and how good they feel when you step out of a bath. Did you know that towels, as we know them, did not become easily accessible until the 20th Century? In fact, until the mechanization of the textile industry most towels were made from linen and were very small and often hand made.

With the onset of the Industrialized Era, mechanized looms were developed to create the tiny loops that make the pile surface of cotton terry cloth towels. In the beginning only the very wealthy could afford the luxury of these towels. Today, almost weekly, we see ads at various stores that make luxuriously soft, large towels within reach of almost any working family.

As I read through the articles in this issue, I had two very clear images in my mind. First, the miracle of soft, thirsty towels. Without a series of plans I would never know the feel of warm, soft cotton after a bath. To make that towel it took planning by the farmer to plant cotton and see it through to harvest. Buyers had to plan for the right amount raw product to buy in order for the cloth makers to make the finest grade cotton terry cloth.

The plans of early inventors made the cloth for my towels readily available. After the towels were made, someone had to plan how to market them. Even colors and sizes had to be planned...nothing was left to chance. Finally the retailer planned

which colors and sizes to stock in the stores where I shop. Amazing, all that planning for a single towel...

Working as an educator with teachers and pre-service teachers, I feel very well versed in the art of planning. Many times I have said or heard the phrase, "Failure to plan is planning to fail."

What is curriculum except another word for planning? Like the store owner, the teacher has an end product. However, instead of working through a horizontal integration system, the teacher operates in a vertical integration system--taking the raw product through all steps of the process to reach the goal of a well-rounded successful student.

My second thought revolved around animals. I know, bizarre. Several years ago, my colleague and friend Jack Elliot introduced me to *The Animal School*. I have included a rendition in this issue along with a few select images.

The primary reason I thought of *The Animal School* revolves around the question, "What to Teach?" Often it seems to educators that anyone and everyone who ever attended school, public or private, wants to decide what should be taught in the classroom.

I believe Agricultural Education has enjoyed an edge in the curriculum arena. That edge comes from the philosophy that curriculum should meet the needs of students and communities. It is this philosophy that has kept Agricultural Education a vibrant and evolving arena for 80

years. My father always told me that anything that was not changing and growing was dying. And, indeed Career and Technical fields have been subjected to many outside views that believe, in general, all CTE programs have outlived their time. So far, we have been able to prove them wrong.

I believe, like many of the authors in this issue, we cannot afford to rest on our laurels. Instead, Agricultural Education must be diligent and learn from the lesson of *The Animal School*. There will always be those who want to steer our students down different paths. Unless we continue to provide a solid and exciting package that meets the needs of the students of tomorrow, we may wake up one day and find many of our students, feeling unfulfilled, have moved on to greener pastures.



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

Theme: “Eenie, Meanie, Minie, Moe...Pick the Curriculum that best fits Joe!”

Editorial:

What do bath towels, animals and curriculum have in common?2
By Billye Foster, Editor

Theme Editor Comments:

Don't Throw the Baby Out with the Bathwater!4
By James Knight

Theme Articles:

The Case for the CASE Model: Curriculum for Agricultural Science Education.....6
By Joel M. Larsen, Brad Scholesser, Dr. Robert Clark & Daniel Jansen

Thinking About Curriculum!.....9
By Larry Case

The Never-Ending Story 11
By John Mulcahy

Developing an Agricultural Education Curriculum for 2015.....13
By William D. Waidelich

What Impact Will State and Federal Legislation Have in Future Curricular Decisions?18
By Shannon G. Washburn

The Animal School21
By G. H. Reavis

Aligning Curriculum with Teacher Needs22
By Kirk Edney

Informational Items:

Subscription Rates to Increase.....24

2008 Theme Information26

Inclusion Corner16
By Billye Foster



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Don't Throw the Baby Out with the Bathwater!

by James Knight

Forty years ago as I was preparing to become a teacher, I received instruction about how to build a course of study for a vocational agriculture program and was required to develop one for a selected community utilizing the principles I had learned. The curriculum developed was intended to be heavily focused on preparing the students for the world of work, be relevant to the agriculture in the community in which the school was located, be sequential in its approach, and to have students' occupational experience programs and FFA experiences to be closely connected as well.

Soon after graduating, I accepted my first teaching position and proceeded to actually create a course of study for a four-year program. It was an interesting process as I did a community survey and met with my advisory council and students in an effort to determine the nature, depth, and sequence of the content to be taught throughout the four years of the program. Of course, I had the state guidelines, my own experience and education, and the previous course of study for the school where I was to be teaching. All of that provided the basis from which to build the curriculum.

The process was challenging and took a significant amount of effort and time. For example, there were some topical areas where I had almost no experience and very

little background. In addition, there just seemed to be more things to teach than time would allow. Like most beginning teachers, I suppose, I simply tried to make the best decisions I could and then relied on the advisory council to coach me through the process such that I would be able to connect my instructional program to the community and student needs and aspirations while satisfying the demands of the state for vocational agriculture programs.

Since those early years in my career, I have observed some incredible changes in the focus, nature and direction of instructional programs for

agricultural education. Most recently, we have observed a huge movement to make sure that the curriculum for our programs addresses all kinds of state and national education standards. This has required a very serious look into the content being taught in our programs.

Since agriculture is essentially applied science, Biology seemed to be a content area where the early efforts in cross-walking the standards in many states were productive. In fact, right here in Arizona an effort was launched in the early 90s, which ultimately qualified the graduates of our agricultural education programs



The rabbits excelled at running, but swimming caused so much anxiety it often led to nervous disorders.

to have their earned agricultural education credits accepted as science credits by the state's university system.

With the added pressure of accountability associated with the No Child Left Behind (NCLB) legislation, agricultural education programs are now identifying science, math and language arts standards that can be met through our regular instructional programs. Once considered purely elective courses to meet high school graduation requirements, agricultural education programs have been systematically trying to figure out how to be a part of the solution for obtaining higher student achievement scores, which are primarily measured through science, math and reading tests. At the same time, we have been trying to find a way to maintain our identity. This has created significant angst and frustration throughout the profession.

My thoughts in this area are somewhat philosophical. I would suggest that we rely on the principles that guide the curriculum development process. I am personally convinced that while our programs are not as narrowly defined as they once were, they still need to be community based, which means that they need to be sensitive to the business and industry needs and the culture of the community. This drives me to personally resist a "one size fits all" mentality. I understand that the standards can be the same, but the content and the methods chosen to meet those standards can and probably should vary. I'm still persuaded that providing instruction and related activities that are seasonal in nature as close to those seasons as possible is

the right thing to do. On top of all of that, I am still committed to connecting our instruction to supervised experiences and FFA activities so that students feel the relevance and enjoy the related experiences.

This issue of the Agricultural Education Magazine is devoted to address the curriculum issues we face in our profession. It seems to me worth noting that while we are having a discussion about curriculum in agricultural education programs, we need to remember that the genius of our program isn't in the specific content but rather in the process of providing that content. The agricultural education model is clearly the premier delivery system in all of education. In fact, it is interesting to note how other fields of education are coming to see the power in our approach. Therefore, as we debate about what the content should be in our agricultural education programs, we should be mindful that the process is the most important piece of the puzzle. Let's not throw the baby out with the bathwater.



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The Philosophy of Agricultural Education

Over the years, agricultural education has shaped and refined a clear philosophy that many feel is a model educational approach. The instruction, methods, program, and courses in agricultural education are based on problems associated with various tasks in the agricultural and natural resources industry. Thus, the content of the curriculum is flexible and changing. Instruction is systematic. Principles and theories are studied as potential solutions to real problems. Practical application and successful transfer of knowledge, skills and attitudes into real-world settings are the goals of instruction. Emphasis is on learning by doing—through a direct encounter with the phenomenon under study. This emphasis is apparent in the attention given to laboratory activities, field trips, problem solving, and SAE programs.

Agricultural educators place much emphasis on the individual learner. This is illustrated by the importance placed on home and worksite visits by teachers, the value of supervised study, and by basing the content of instruction on the individual problems of students and those inherent in the field of agriculture.

The above selection is an excerpt from the Handbook on Agricultural Education in Public Schools, 6th Edition, recently released by Thomson/Delmar publishers. Written by Phipps, Osborne, Dyer & Ball this edition provides us with a contextual framework for this issue of The Magazine.

The Case for the CASE Model: Curriculum for Agricultural Science Education

By

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The National Council for Agricultural Education is currently in the development phase of The CASE Model – The Curriculum for Agricultural Science Education. The CASE Model is the result of a Council taskforce that reviewed a national curriculum framework. Much of the taskforce’s work centered on Project Lead The Way (PLTW) and the success they have had in the area of developing students prepared to enter post-secondary education in the engineering field. The Council and PLTW have entered into a cooperative agreement for the CASE model.

PLTW provides educational leadership through unique curriculum development that is primarily based on an activities, project, product-based approach towards teaching and learning. Started in the mid-1990s, PLTW offers highly stimulating courses in engineering and bio-medical

sciences for high school students. The hands-on project and problem-based approach adds rigor to traditional technical programs and relevance to traditional academics.

The goal is to develop a national Agricultural Science student curriculum and teacher training course materials based on the PLTW’s proven, project-based method. For agriculture students and agriculture in America to remain competitive in the world, agricultural education needs to be held to the same standards as other academic subjects being taught in our high schools today.

Our Opportunity (Dr. Ed Osborne)

Secondary agricultural education programs have evolved over the past 25 years, in particular, toward more comprehensive programs effectively serving all student groups in terms of achievement and post-high school plans. The PLTW model offers a unique opportunity to broaden our current thinking about what constitutes a high quality, effective secondary agricultural education program. With a new/enhanced program



The eagle was a problem child, always doing things his own way...

delivery model for secondary agricultural education, we have the opportunity to:

- ❖ Reach more total students, more non-white students, and more students enrolled in larger suburban and urban schools.
- ❖ Provide a stronger science-based instructional program that enhances student achievement in science (and perhaps other core areas).
- ❖ Provide a new Agricultural Science program that is complementary to our current program delivery approach.
- ❖ Attract high achieving students into a science-based agriculture program that is parallel to the PLTW pre-engineering program with the goal of channeling academically talented students into science-oriented majors in colleges of agriculture.
- ❖ Respond to the shortfall of scientists for the agricultural industry by stimulating greater interest in the Agricultural Sciences for undergraduate and graduate study.
- ❖ Increase the value of secondary agricultural education programs to local school districts and colleges of agriculture.
- ❖ Combine the power of current student leadership development, experiential learning, and problem-based learning programs in agriculture with an enhanced delivery model that has greater potential for 1) increasing the number of agricultural education programs, and 2) advancing student

achievement.

- ❖ Enhance the leadership, teamwork, and problem solving skills of future scientists in the agricultural industry.
- ❖ Provide a more realistic and suitable model for supervised agricultural experience programs for students living in larger suburban and urban settings.
- ❖ Attract more Agricultural Science teachers from new, less traditional populations.
- ❖ Provide an advanced placement (AP) credit opportunity for academically talented students enrolled in secondary agricultural education programs.

Opportunities That the CASE Model Can Provide for Agricultural Education

1. ***Teacher Level of Expertise:*** Teachers often express that their technical agriculture training is not sufficient to deliver the wide range of academic and technical knowledge and skills contained in state and national curriculum standards. A highly structured professional development initiative, closely aligned to the approved courses, could be of great assistance in helping teachers close their knowledge gap.
2. ***Teacher Retention:*** It could be speculated that teachers who are more confident in their knowledge should be

stronger and therefore less inclined to leave the profession due to job dissatisfaction.

3. ***Aligning Content Standards with Instruction:*** Teachers and other educators working with curriculum have difficulty using national or state curriculum content standards to develop aligned instructional materials/activities and assessments.
4. ***Ongoing Professional Development:*** This model provides for a comprehensive system of professional development that assesses teacher needs and includes an ongoing series of professional development opportunities rather than one-shot events.
5. ***Assessment:*** In this era of increased accountability, this model provides for the development of end-of-course assessments that are aligned to instruction and national content standards. With students participating around the country, we would have access to state and national level data that could be used to demonstrate progress on performance goals.
6. ***Instructional Materials:*** Instructional materials will facilitate a teacher's job in preparing for day-to-day instruction. These materials will carry the additional benefit of being aligned with national

Continued on page 8

academic standards and the Agriculture, Food and Natural Resources content standards and the end-of-course assessments.

7. ***New Markets for Program:*** It is anticipated that a move to focus strongly on the science and the business of agriculture should promote program growth in school districts that have been reluctant to have an agricultural education program.
8. ***Improving Supervised Agricultural Experiences:*** The capstone experience, which is part of the PLTW model, has the potential to address issues related to the implementation and quality of Supervised Agricultural Experiences.
9. ***Leadership:*** The integrated curriculum model sets the stage for modeling all aspects of a quality program design.
10. ***Equipment and Facilities:*** Agricultural education program laboratories can benefit from more stringent “requirements” related to the equipment and facilities needed for preparing students for the agriculture careers of tomorrow.

Implementation

Working with the National FFA, a business plan was developed for The CASE Model. It follows the business model used by PLTW. State Directors of Career and Technical Education were offered the opportunity to fund the development of The CASE Model. Pilot states were asked to invest in the curriculum development phase

with the opportunity to field test The CASE Model first and to have their investment returned through rebates as schools sign on. Twelve states took advantage of the opportunity to pilot the curriculum.

The National Council has authorized the hiring of curriculum development staff and a project manager. The Council has hired Dr. Robert Clark, Pennsylvania, to lead the development of the foundation course – Principles of Agricultural Science – Animal. Daniel Jansen, Oregon, has been hired to lead the development of the second foundation course – Principles of Agricultural Science – Plant. Brad Schloesser, Minnesota, has been hired as project manager to coordinate efforts of the CASE Model and the Pilot States

Next Steps

Working with PLTW in the development of the two foundation courses in September, pilot states will be bringing together Kernel Development teams for Animal and Plant Sciences. These teams will begin the development of the project-based concepts that will be incorporated into the courses. These “Kernels” are the key concepts – the essential learning that will be the outcomes of each lesson, unit, and course.

Curriculum development staff, Jansen and Clark, will develop the project-based lessons. It is anticipated that the two foundation courses will be completed in time for pilot school training during the summer of 2008. The foundation course will be field tested in the 2008-2009 school year. Pilot state schools will have the first

opportunity to sign on as CASE Model schools with professional development training to occur in the summer of 2009 and implementation of the foundation courses in the 2009-2010 school year.

Beyond the Foundation

Specialization Courses that are on the table for development include the following options:

- Animal and Plant Biotechnology
- Bio Systems Engineering and Technology
- Food Science and Safety
- Natural Resources Environmental Sciences
- Agricultural Sciences Research and Development (Capstone)

The Goal

The CASE Model provides the opportunity for world class opportunities for young people in the dynamic fields of Agriculture, Food and Natural Resources.

Credits to The National Council for Agricultural Education Curriculum

Taskforce Members:

- Dr. Ed Osborne, University of Florida,
- Dr. Ike Kershaw, Ohio Department of Education,
- Dr. Larry D. Case, US Department of Education

by Larry Case

Thinking About Curriculum!

When I heard the theme for this issue, “Eenie, Meenie, Minie, Moe . . . Pick the Curriculum that best fits Joe,” I wondered who Joe was. Was it Joe Teacher, Joe Student, Joe Businessperson, Joe School Principal, or someone else? I believe all are important in developing or choosing a curriculum for the local agricultural education program. This is an important decision to the success of the program, the students and the agricultural businesses of the community and Nation.

Curriculum

Many times people think of curriculum as lesson plans, teaching materials/units or courses of study. Many times, we want to confine curriculum as what happens inside the formal classroom. Curriculum includes all of these things, and more. Curriculum, to me, includes all student experiences inside and outside the classroom, which provide meaningful learning toward a desired result.

Curriculum defines an instructional program and a profession. What we teach is our discipline and identifies us as unique. It provides indicators as to who we are and what we do. When asked what I do, I say, “I am an agricultural educator.” Well, what do you teach? Answer, “Animal and plant science etc.”

Less often we get the question—“Well, how do you teach?” It is my belief that how you teach is also part of the curriculum. When we relate that supervised experi-



Suffering from the need to always be the leaders, squirrels often suffered breakdowns that affected all their classes.

ence and leadership development through FFA or we use inquiry-based teaching as a way of delivering experiences that lead to a desired end, I believe it is a part of curriculum. When we include our teaching strategies as a part of the curriculum, then we are getting to higher-level thinking/problem solving instruction. I also believe this is the reason we use what is referred to as the “Three Circle Model”—Classroom instruction, Supervised experience, and leadership/personal development.

Over the years, this is what has made agricultural education special. I have heard it said that we teach the “whole person.” Properly used, it also works well with a variety of learning styles. I believe we get beyond the retention of information and strive to challenge students to “think” through application of new information as well

as “discovering” new information while solving problems.

Technical Content

Technical content is important. Technical content provides context for meaningful learning of academics, the “soft” skills of teamwork, leadership, etc. All of this is important for career preparation.

Technical content is a constantly changing area. To keep up-to-date is challenging and is detrimental if not done well. We not only need to be teaching Joe Student the latest information, but Joe Businessperson will support the program when he/she knows relevant information is being taught.

Educational Accountability

Joe School Principal is not only interested in relevant and meaningful instruction, but wants to know if



The curriculum was so disjointed, an abnormal eel was named valedictorian at the end of the year.

students are learning and retaining the information. Student outcome measurement is difficult when used to measure program effectiveness. This really gets to be difficult when you want to measure student outcomes across several programs. Each program is teaching different topics so the input/instruction is not the same.

This begs the question--can we identify the common core of needed knowledge and skills for agricultural education? To address this question for all of Career Technical Education, the US Department of Education, in partnership with the National Association of State Directors of Career Technical Education Consortium, completed the development of 16 career clusters.

The 16 clusters represent the total US economy. Agriculture, Food and Natural Resources is one of the cluster areas. The writers of the Career Cluster Knowledge and Skill statements were under the obligation of identifying the common statements for the entire cluster as well as for each of the seven pathways. Joe Businesspersons were also involved to assure relevance. As a result of this work, there is a good start on the common elements of instruction.

One of the intended uses of the career cluster information is a starting point for developing educational courses and related information. It is also a common starting place for

developing plans of study, which include the possible seamless transitions between levels of education such as secondary to community college and on to the university.

The career cluster information is also intended to provide counseling and orientation to students and parents as to the career opportunities. As the career cluster of Agriculture, Food and Natural Resources is viewed, one would conclude that there are lots of career opportunities other than production agriculture or farming. See [www.careerclusters.org].

Curriculum Standards and Assessments-- Meeting the Challenge of Accountability

Currently, there is a National Task Force that is working on developing curriculum standards, which will be assessment ready. The curriculum standards are based on the Agriculture, Food and Natural Resources Career Cluster's knowledge and skill statements, and will be connected to the National standards for the core academics. This gives the profession common targets of skill levels expected to succeed in the Agriculture, Food and Natural Resources sector.

The curriculum standards will aid in discussions for developing articulation agreements for easing the transition between levels of education. As common assess-

ments are developed, accountability information for student outcomes can be provided. This will help in meeting the challenge of providing common measures for student achievement, which are not available today.

Certification for certain skill levels will become more prevalent in the future. Students of agricultural education intend to be able to secure employment and to enjoy a successful career. What is it that we as educators can do to have a quality assurance of student skills to potential employers? Real accountability.

In conclusion, we are approaching the identification of a common core of information for Agriculture, Food and Natural Resources instruction. Standards and assessments are also coming soon. The choice of curriculum for an instructional program is an important activity. We need to involve as many "Joe's" as we can in this decision and we need to hold ourselves accountable for relevant student outcomes. Our success depends on it!



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The Never-Ending Story

by John Mulcahy

There are many stories that have an ending. The search for a good recipe for apple pie is one. The author has found the ideal recipe. The story of his search is over. However, other stories never end. These never-ending stories abound in education. They include the search for ideal professional development activities and the search for the very best technology to use in teaching subjects such as welding. These stories, and more, never end because they are stories of continuous improvement. In a similar manner, the story of curriculum development is a never-ending story.

Choosing the "What" in Curriculum Design

Like all stories, the story of curriculum development has a beginning. It begins with deciding what to teach. The *what* of teaching is known by a variety of names. In the vernacular of many curriculum specialists, the what is called "goals and objectives". Some curriculum experts, such as McTighe and Wiggins, refer to the what of curriculum design as "enduring understandings" (1999). By whatever name, it is an important place to begin. The guiding question is: What do you want your students to know, be and do as a result of instruction in your agricultural education program?

There are various methods used to determine what should be taught. These include consulting state standards and school district curriculum. Other less desirable

methods include one or more of the following:

Teaching What You Like and Know Best

This is an easy pitfall for inexperienced teachers. The curriculum is designed around the teacher's background with little thought given to what is best for the students.

Like all stories, the story of curriculum development has a beginning. It begins with deciding what to teach. The what of teaching known by a variety of names.

Because we like insects and took two or more courses in college in that area, we teach entomology. The instruction may be good and the students may even like it, but it still begs the question: Is this really what my students need to know, be and do in order to be most successful?

The Table of Contents

While less common in agricultural

education, teaching what is listed in the textbook's table of contents is often the basis for what an instructor teaches. The curriculum is developed based upon the textbook and little consideration is given to whether or not this particular textbook is really a good match with the students and the community.

What the Previous Teacher Taught

Any experienced instructor will tell you that making radical changes in an agriculture program when you first come on board can lead to difficulties. However, that doesn't mean that the new teacher must teach exactly what the previous teacher taught and in the same manner. Curriculum development is truly a process of continuous improvement and this means that no two years of curriculum material should look the same regardless of whether these materials are used by the same instructor or multiple instructors.

As indicated previously, a better way to determine what to teach is to consult state standards and district curriculum. However, even this guidance can sometimes be misleading. Most states have multiple agricultural education curricula from which to choose. These might include horticulture, animal science, biosciences and more. How does a teacher determine which of these curricula is most appropriate for his or her program?

The answer to the question is "research". All agricultural education instructors should take time

occasionally to survey their “community”, however that is defined. In urban areas, the “community” might include an entire metropolitan area. In rural areas it might include the entire county. In sparsely populated states the “community” might even include the entire state. Once the instructor has defined his or her “community”, then it is time to gather agricultural occupational data on that community. Several important questions to keep in mind when gathering these data are:

1. How many people are currently employed in various agricultural industries (e.g. crop production, livestock production, golf course management, etc.)?
2. How many people will be employed in five years?
3. What is the wage associated with these occupations?
4. What education and training is required for these occupations?

Fortunately, there are many occupational data bases available that offer this type of information. These include data bases maintained by various state governmental agencies such as commerce and labor, and by various educational institutions such as community colleges and state universities. Typically, state departments of education work closely with occupational demand data and can direct teachers to the appropriate resources. Once the agricultural education instructor reviews these data, he or she will have a much better idea regarding which set(s) of state standards to use in developing or revising the local curriculum. Of course, it is most important that these data and related curricula are reviewed by the local program advisory council. Local agribusiness personnel will have keen insights into what students need to know in order to be successful.

Determining the “How” of Curriculum Development

Once the what has been determined, it is then time to concentrate on the how: How will students demonstrate learning? What “evidence” will the teacher need in order to determine if the students have successfully learned the identified concepts and skills? The how of curriculum development (at least at this stage) involves course and unit assessments? Well designed assessments drive curriculum and instruction. If an assessment really measures what a student must know, be and do, then every effort in curriculum development and daily instruction is directed at ensuring student success on the assessment. The assessment drives all further curriculum development efforts. This is the “backward design” process as explained by McTighe and Wiggins in *Understanding by Design* (1998).

CAUTION: The “what” and “how” steps explained thus far in this article are very important. However, these steps are often frustrating and not particularly enjoyable steps to take in the curriculum development process. They require data gathering and deep thinking, and can often be very time consuming without offering any sense of progress. As a result, educators often gloss over these major steps and skip directly to the development of the actual learning activities. This is a fatal error. If we identify the wrong destination on a journey, our arrival at that destination—however efficiently it may occur—is still the wrong destination!

Once the assessments are developed, the next step is to develop the sequence of activities that will lead to the desired student learn-

ing outcomes. The agricultural education profession is masterful in this regard. Few professions do a better job of developing authentic activities that engage students at the highest of cognitive levels. The agricultural education model provides the teacher with a structure of classroom, laboratory, FFA and work-based learning activities through which authentic activities can be delivered. The task for the teacher is to “begin with the end in mind” as each of these activities is developed. We must ask ourselves at least two questions:

1. What do I want my students to be able to do by the end of a particular learning activity?
2. What steps must the students complete in order to accomplish this goal?

The process that follows these steps is very familiar to most educators. Clear objectives for learning activities that are measurable and observable are identified. Every effort is made to make sure that these objectives are written at the correct level of difficulty (see Bloom’s or Marzano’s Taxonomy). Finally, the teacher must endeavor to make sure that all objectives and sub-objectives have aligned activities.

Are we finished?

The process of curriculum development is multilayered. To do it correctly takes a great deal of thinking and hours of work. Every year, the teachers in the various career and technical education programs in the author’s district meet to work on curriculum; and, every year, he is asked the same question: “When will we be finished?” The answer is, “never!” It is a never-ending story.

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THEME ARTICLE

Developing an Agricultural Education Curriculum for 2015

By William D. Waidelich, Ed.D.

Curriculum standards based reform introduction

The modern standards-based education reform movement started with the 1983 report, "A Nation at Risk." Over the last 24 years, several state and national reform efforts have been established. Nationally, the No Child Left Behind Act is designed to target federal, state and local attention and resources to the schools that are most in need of help.

"No Child Left Behind (NLCB) ... outlines what it takes to implement high standards—a curriculum aligned with standards, multiple assessments, quality teachers, and public accountability" (Puriefoy, 2003). Does agricultural education have "a curriculum aligned with

Does agricultural education have a curriculum aligned with standards?

standards?"

The Consortium for Policy Research in Education (CPRE) has conducted research in schools and districts around the country. Goertz (2001), one of the principal investigators of a major CRPE

study, examined the ways in which districts can implement standards-based educational reform. Because implementation of state and federal policy occurs at the district level; school districts can choose to ignore, adopt, coordinate, or expand the policy as the district implements the policies.

Does agricultural education have curriculum standards that school districts embrace and adopt locally?

Puriefoy (2003) suggests that "[r]equiring all students to meet the same high standards makes the process of learning and everything about education public." As states adopt standards, they can help provide a level of consistency to the educational experiences provided



The prairie dog decided to join the badgers and gophers and create a private school...

in all schools. This should help narrow the achievement gaps between different populations.

Does agricultural education have curriculum standards that will help narrow achievement gaps between different populations?

One of the major strengths of standards-based educational reform is the change in the dynamics of the organization to provide higher standards for all students. Puglielli (2003) suggests that this reform will help an organization increase its capacity to “establish a more focused set of priorities for improvement and...[to] assure that scarce resources are being applied effectively” (p. 12).

Does agricultural education have curriculum standards that focus our efforts?

Content standards provide a set of clear and rigorous expectations for all students. These standards are designed to pro-

vide clear, specific statements that describe what a child is expected to know and be able to do in content areas at each grade level. The Battelle for Kids (n.d.) partnership suggests that “we must insist on high standards - when we expect more from students, they achieve more”.

Does agricultural education have curriculum standards that expect more from students, all students?

It is apparent that there is a need for clear and ambitious agricultural education curriculum standards. Can agricultural education develop curriculum standards that:

- are aligned with academic content standards,
- are embraced and adopted locally by school districts,
- help narrow achievement gaps between different populations,
- set priorities for improvement, and
- expect more from students?

Agricultural education Context

A little over 40 years ago the agricultural education profession debated over the inclusion of science in vocational agriculture. Today, the issue is still with us but with ever-increasing complexity. Features of The Agricultural Education Magazine in the 1960’s included:

- “Making Vo-Ag Broader Vocationally,”
- “The Effect of Vo-Ag on College Success,” and
- “Agricultural Education at the Crossroads.”

Articles included:

- “Agriculture is more than production farming,”
- “College success with and without vocational agriculture in the high school,” and
- “Virginia study reveals need for new type of vocational training.”

Why have these issues not changed? What are the implications when the same topics are still prevalent 40 years later? Have we failed to clearly define what technical or academic knowledge and skills are taught to our students?

While members of our profession seem to disagree over whether agricultural education programs should be technically specific, job training-based programs, broader agricultural and science principle-based programs or programs that provide AP or college credit for science and agriculture, most in the profession believe that a blend of academic, employability, and

technical knowledge and skills serves students' best interests. A white paper, developed by Initiative #2 (Link Food, Agriculture and Natural Resources Content Standards to National Academic Content Standards) for the "10 x 15": The Long-Range Goal for Agricultural Education, outlines how agricultural education can link Agriculture, Food, and Natural Resources (AFNR) Content Standards to National Academic Content Standards. The white paper outlines the current situation as well as a preferred future for agricultural education curriculum in the year 2015.

10x15: The Long Range Goal for Agricultural Education

Initiative #2: Link Agriculture, Food, and Natural Resources Content Standards to National Academic Content Standards

"Additionally, for agricultural education to remain a viable and relevant component of public education, the profession must show how the curriculum addresses the academic standards set by many state departments of education. By integrating science concepts, which address the science standards, agricultural education is better able to secure its place at the educational policy and funding table" (Brian Myers, University of Florida).

What is the current situation in agricultural education as it relates to linking agriculture, food, and natural resources (AFNR) content standards to national academic content standards?

Nearly every state has developed

some type of agricultural education content standards, competency profiles, or course objectives that are used by agricultural educators in their respective states. However, each state uses a different process for the development of their state content standards for agricultural education. Some states use a validation process that includes agricultural educators; others use an industry validation process, while others use a combination of faculty and industry validation.

As a follow up to the agricultural education content standards development process, many states provide little or no assistance for local agricultural educators to develop their local courses of study. Locally, some teachers validate their agricultural education content standards by using their local advisory committees while others just copy the recommended state agricultural education content standards.

In addition, academic content standards have been developed nationally, and for the most part are recognized by both state and local teachers and administrators. These academic content standards are used in most state and national assessment models. In many cases, the linking of food, agricultural, and natural resource content standards to national academic standards by local and state agricultural educators is not done or has not been consistently applied. Some agricultural education programs link the two sets of standards (agricultural and academic) and might even provide math, science or communications credit towards graduation or college admissions requirements.

The lack of uniform national standards for agricultural education reduces students' abilities to transport the knowledge and skills or to transfer the credit that they

have obtained to another program or school. This lack of consistency at the national level leaves agricultural education unable to develop a national position as it relates to how AFNR content standards link to national academic content standards. This variability causes issues when agricultural education students transfer between schools and between states. Additionally, the level of mastery obtained by agricultural education students is not uniform making portability to post-secondary education more difficult.

The major outcome of the National Curriculum Content Standards committee is a nationwide electronic database of AFNR Content Standards cross-walked with recognized national content standards in math, science and communications. The AFNR Content Standards will be available for states and local programs to adapt to their respective needs.

The current AFNR content standards development process identifies three levels of mastery for agricultural education students to obtain: Level 1, Level 2, and Level 3. These levels of mastery allow agricultural educators to identify individual student performance toward achieving the AFNR content standards as well as the national academic content standards. The three levels of mastery assist agricultural educators in program planning and course of study development.

What is the preferred future as it relates to linking agriculture, food, and natural resources (AFNR) content standards to national academic content standards?

Beyond 2008, the National Agricultural, Food, and Natural

Continued on page 17

In the July/August Issue you were given the suggestion of tapping the Implicit Association Test (IAT) as a tool for use with your students. Hidden Bias Tests measure unconscious, or automatic, biases. Your willingness to examine your own possible biases is an important step in understanding the roots of stereotypes and prejudice in our society.

The ability to distinguish friend from foe helped early humans survive, and the ability to quickly and automatically categorize people is a fundamental quality of the human mind. Categories give order to life, and every day we group other people into categories based on social and other characteristics. This is the foundation of stereotypes, prejudice and, ultimately, discrimination.

Definition of terms

- A stereotype is an exaggerated belief, image or distorted truth about a person or group — a generalization that allows for little or no individual differences or social variation. Stereotypes are based on images in mass media, or reputations passed on by parents, peers and other members of society. Stereotypes can be positive or negative.
- A prejudice is an opinion, prejudgment or attitude about a group or its individual members. Prejudices are often accompanied by ignorance, fear or hatred. Prejudices are formed by a complex psychological process that begins with attachment to a close circle of acquaintances or an “in-group” such as a family. Prejudice is often aimed at “out-groups.”

How do we learn prejudice?

Social scientists believe children begin to acquire prejudices and stereotypes as toddlers. Many studies have shown that as early as age 3, children pick up terms of racial prejudice without really understanding their significance. Soon, they begin to form attachments to their own group and develop negative attitudes about other racial or ethnic groups, or the “out-group”. Early in life, most children acquire a full set of biases that can be observed in verbal slurs, ethnic jokes and acts of discrimination.

How are our biases reinforced?

Once learned, stereotypes and prejudices resist change, even when evidence fails to support them or points to the contrary. People will embrace anecdotes that reinforce their biases, but disregard experience that contradicts them. The statement, “Some of my best friends are _____” captures this tendency to allow some exceptions

without changing our bias.

Does unconscious bias influence our behavior?

A growing number of studies show a link between hidden biases and actual behavior. Some common associations with hidden bias follow:

- Unconscious beliefs and attitudes have been found to be associated with language and certain behaviors such as eye contact, blinking rates and smiles.
- Studies have found that school teachers clearly telegraph prejudices, so much so that some researchers believe that children of color and white children in the same classroom effectively receive different educations.
- A now classic experiment showed that white interviewers sat farther away from black applicants than from white applicants, made more speech errors and ended the interviews 25% earlier.
- Studies indicate that African American teenagers are aware they are stigmatized as being intellectually inferior and that they go to school bearing what psychologist, Claude Steele, has called a “burden of suspicion.” Such burden can affect their attitudes and achievement.
- Similarly, studies found that when college women are reminded their group is considered bad at math, their performance may fulfill this prophecy.

Creating change

If people are aware of their hidden biases, they can monitor and attempt to ameliorate hidden attitudes before they are expressed through behavior. This information was adapted, with permission, from *Hidden Bias: A Primer*. The entire article can be viewed at http://www.tolerance.org/hidden_bias/index.html.



Resource Content Standards are recognized by all states as the preferred and adopted AFNR Content standards. All entities and agencies recognize the AFNR Content Standards; therefore, students transfer between schools, programs, and states without any loss of time or content. Because of this seamless consistency, agricultural education is recognized and adopted nationwide by schools, states, colleges, universities, business and industry. Achievement-based and performance-based authentic assessments are used by agricultural educators to validate agricultural and academic competency attainment. Because National AFNR Content Standards were developed, states were able to collectively develop both achievement-based and performance-based assessments that are used by multiple states. These assessments are recognized by industry organizations, associations, and businesses as “certificates of mastery” of the National AFNR Content Standards. Colleges of agriculture recognize agriculture content attainment, as evidenced by achievement on these assessments, towards college credit in agricultural subjects.

Additionally, the agricultural education curriculum model is recognized by academic content standard committees as legitimate academically-based programming. The AFNR assessments are recognized by the academic community because of related, measured academic content standards; the academic content standard achievements by agricultural education students are recognized by schools and states for high school graduation and by colleges and universities for admission requirements.

Finally, agricultural education students who complete an agricultural education program are highly sought out by colleges, universities, business and industry because of their achievement and performance assessment results. The results demonstrate that agricultural education students are better prepared for college and the workforce than students in traditional educational programs because 1) they completed an agricultural education program that is based on the integrated agricultural education model, 2) the curriculum met the National AFNR Content Standards and related academic content standards, and 3) their level of mastery was documented by nationally recognized achievement and performance-based assessments. Additionally, agricultural educators who use the integrated agricultural education model and incorporate the AFNR Content Standards and assessment model are highly valued by the educational community for moving each student to their highest level of mastery.

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What Impact Will State and Federal Legislation Have in Future Curricular Decisions?

by Shannon G. Washburn

The selection of a curricular focus for an agricultural education program is likely one of the most important decisions with which secondary teachers of agriculture are faced. This single set of decisions has implications for student motivation to enroll, stakeholder views of the program, SAE areas students are likely to consider, FFA activities in which the chapter will participate, and ultimately, the career decisions of many students. Simply put, the curricular decisions of the teacher impact virtually every aspect of the local program.

It goes without saying that curriculum adoption is influenced by a number of factors. As we look to the bright future of agricultural education, though, we need to remain cognizant of the impact state and federal legislation may have on our curricular decisions. An example of such impact can be found throughout the new Perkins legislation. Of particular interest is the potentially precedent-setting language related to assessment of secondary students enrolled in CTE programs.

The Carl D. Perkins Career and Technical Education Act of 2006, not only changed the name from Vocational Education to Career and Technical Education, it also redefined what constitutes Career and Technical Education. Included in this definition is an emphasis on “providing technical skill proficiency, an industry-recognized

credential, a certificate, or an associate degree.”

The legislation also added new language to the Core Indicators of Performance for Career and Technical Education Students at the Secondary level. Among the six core indicators requiring state documentation of a variety of measures, number two reads as follows: “Student attainment of career and technical skill proficiencies, including student achievement on technical assessments that are aligned with industry-recognized standards, if available and appropriate.” A quick read of the Perkins legislation overall reveals a heavy emphasis on industry-based assessment and potentially opens the door for a mandate of industry-based certification.

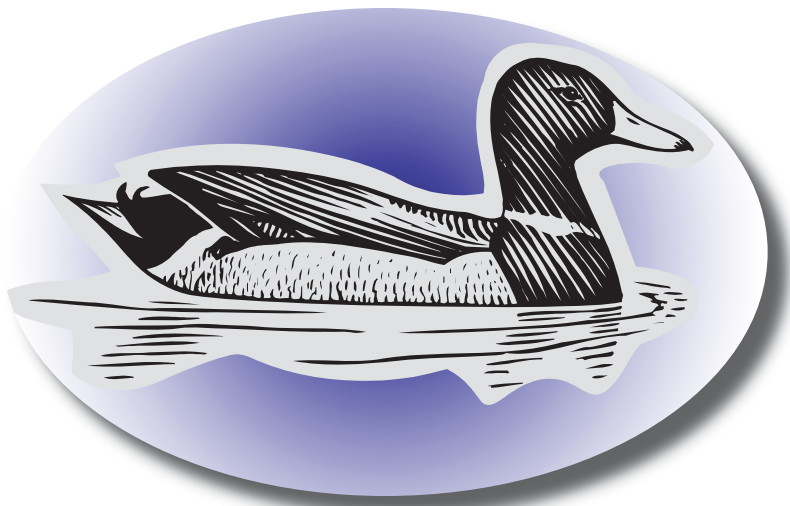
Many educators likely contend that in this era of high stakes testing, it was only a matter of time before standardized CTE-specific assessments became a reality. As we examine how the new Perkins language will impact agricultural education, it is important that we not overlook the short and long term impact this Core Indicator and the new CTE definition may have on our current and future curricular decisions.

A basic assumption central to this discussion is that CTE programs should be industry-based and should lead to workforce skill development. The concern for this author arises in the potential interpretation of core indicator number

two which currently includes an important caveat: “if available and appropriate.” “If available and appropriate” leaves important wiggle room for those CTE programs whose curricular focus does not have a direct connection to an existing industry-based certificate program. We must explore the ramifications that would result if the next Perkins reauthorization would strike “if available and appropriate” or if states would choose to overlook this meaningful caveat.

To many Florida agricultural education leaders, this new indicator is strikingly similar to language introduced in the Florida legislature during its most recent session. While the federal language is not as far-reaching as the proposed Florida language, the similarities are evident. Had the original language of the Florida bill persisted, Florida CTE programs would be required to lead students to a mandated outcome of industry-based certification. In addition, the bill would have required that CTE teachers not only be state certified teachers, but that they hold industry-based certificates as well.

In many political, commercial, and educational arenas, Florida is considered a “bellwether” state. This term has evolved from its agricultural origins to indicate a particular state that is a good indicator of the future direction the rest of the country will turn in the future. If this is the case in Career and Technical Education, the challenge that faced Florida Agricultural Educa-



The ducks did well at swimming, but running ruined their GPAs....

tion may soon be headed to a state near you. Fortunately, through the advocacy of the Florida Association for Agricultural Educators and other CTE leaders, the language of the Florida legislation was revised before passage, but the experience certainly served as a wake-up call for the importance of not only political awareness and advocacy, but also for what may face us in the future.

In many CTE areas, industry certification as an outcome of career and technical education may seem a natural progression. For instance, in health occupations and the trades, most career fields have had industry certifications in place for decades. In agriculture, however, many of the hundreds of career opportunities do not maintain a certification assessment to establish a baseline of knowledge for individuals entering the profession. One may quickly point to existing industry certifications in the following areas:

- Artificial Insemination
- Equipment Operations
- Food Service
- Horticultural Services
- Veterinary Assisting

- Welding

Admittedly, the above is not an all-inclusive list of agricultural industry certifications, but as we explore the career fields included in this list, we must examine the curricular implications which may result if industry-based assessment (certification) was required rather than only required when “available and appropriate.”

A historical strength of agricultural education has been a fairly balanced emphasis on both “education in agriculture” and “education about agriculture.” We often pride ourselves that our programs are attractive not only to the student looking to immediately enter the workforce, but also to the student bound for advanced education. Would a curricular emphasis driven by industry certification requirements alter this balance? As we look at this particular aspect of the Perkins legislation, does it indicate we’re moving in the direction of a diminished emphasis on literacy and an overemphasis on job training?

As you evaluate the agricultural industry in your state, in what areas do industry-recognized standards

exist? Do the industry-recognized standards or certification areas align with those areas of greatest focus in our existing agricultural education curricula? Assuming the answer is “not exactly,” the following questions arise. In order to align our curriculum with industry-recognized standards, what modifications would have to be made to the content and delivery of our curriculum in order to prepare students to sit for an industry-based exam? If the focus of our curriculum shifted to the preparation of students for industry-based assessments, how would the composition of students served by agricultural education change?

With every new challenge, new opportunities arise. This discussion would be incomplete without inspecting what we might do to prepare for the eventuality that industry-based assessments are required rather than required only if available and appropriate. From the perspective of this author, these opportunities include the following.

- Explore those aspects of the agricultural industry in which high demand, high wage jobs are available and suffer from a shortage of employees. We need to ensure that agricultural careers are included in the conversations taking place in our states regarding those professions seeking expanded pools of new employees. This message could be much more clearly communicated if agricultural education worked with industry to develop the list of those career areas and remained proactive in ensuring such lists reflect current employee demands.
- Establish new dialogues with our friends in the agricultural

industry. We should work to determine the feasibility of establishing partnerships with the industry in those areas in need of employees and determine whether certifications exist for entry into those fields. This would be a wonderful opportunity for agricultural education to share its message with industry allies and develop a win-win partnership. Such partnerships may lead to collaboration on curriculum revisions, foundation partners, SAE and scholarship opportunities for agricultural education students, or reduced fees on industry based certification exams.

- Identify those areas of the agricultural industry that best align with the focus of existing curriculum. Collaboration with industry leaders may result in the creation of new certification assessments to serve as a goal for future agricultural education students. It is possible that agricultural education program completers could establish a competitive advantage in securing positions because of their educational backgrounds in agriculture and their knowledge of the standards addressed by industry assessments.
- We need to insure that the curriculum offered to students is current, meaningful, and reflective of the most important aspects of the contemporary agricultural industry. Doing so will not only earn favor with our many and varied stakeholder groups, but will also best prepare our students for a dynamic and growing industry. Failure to do so will draw negative attention for

our programs and reinforce the notion that CTE programs may be outdated and/or obsolete.

- Clearly communicate that while agricultural education programs do emphasize job preparation, this is not our singular focus. Agricultural education plays an important literacy role in educating future consumers about the importance of the agricultural industry. Our colleagues in the agricultural industry as well as in the political arena need to be continually reminded that the literacy role we play in the industry is of critical need in the industry and the economy. Our industry is well served not only by a steady stream of future employees, but also by knowledgeable consumers and decision makers.
- We need to document and distribute data and success stories to verify that the agricultural education curriculum does effectively prepare students for agricultural careers as well as advanced education. In this data driven age, it will become increasingly important for agricultural education to document the impact it makes on career preparation and the agricultural labor force.
- We must remain continually proactive in advocating for our programmatic needs and shaping the policies that will impact our programs. As discussions for the next Perkins reauthorization heat up and as your local legislators explore the mission, purpose and value of CTE, we all need to be vigilant in communicating the agricultural education message. While most of us likely agree that an industry-based

emphasis is critical, a mandate of industry based certification may be detrimental.

- A final opportunity illuminated by the proposed Florida legislation deals with teacher professional development. If industry-based certifications do exist in areas related to your curriculum, preparing for and completing such a certification may be valuable professional development for you as a teacher. Certainly, increasing and documenting your knowledge of current industry practices would be viewed by most as a definite benefit for the agriculture teacher. Perhaps this will serve as an incentive for some to verify their knowledge of current practices via completion of a certification program.

The curricular choices we make in agricultural education have implications not only for students at the local level, but also for the profession at large. In order to continue to enjoy the strength and vitality of agricultural education, it will become increasingly imperative that we develop and meet meaningful outcomes for our programs. In addition, if we are to continue to enjoy the diverse opportunities we are able to offer students, it will become increasingly important that we remain active in shaping the policies that impact our programs.

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The Animal School

a fable by Dr. G. H. Reavis

Once upon a time, the animals decided they must do something heroic to meet the problems of a “new world.” So they organized a school. They adopted an activity curriculum consisting of running, climbing, swimming and flying. To make it easier to administer the curriculum, all the animals took all the subjects.

The duck was excellent in swimming, in fact better than his instructor; but he made only passing grades in flying and was poor in running. Since he was slow in running, he had to stay after school and drop swimming in order to practice running. This was kept up until his web feet were badly worn and he was only average in swimming. But average was acceptable in school, so nobody worried about that except the duck.

The rabbit started at the top of the class in running, but had a nervous breakdown because of so much make up work in swimming.

The squirrel was excellent in climbing until he developed frustration in the flying class where his teacher made him start from the ground up instead of from the treetop down. He also developed “charley horses” from overexertion and then got C in climbing and D in running.

The eagle was a problem child and was disciplined severely. In the climbing class he beat all the others to the top of the tree, but insisted on using his own way to get there.

At the end of the year, an abnormal eel that could swim exceedingly well, run, climb, and fly a little had the highest average and was named valedictorian.

The prairie dogs stayed out of school and fought the tax levy because the administration would not add digging and burrowing to the curriculum. They apprenticed their child to a badger and joined the ground hogs and gophers to start a successful private school.

Does this fable have a moral?

The Animal School was written and first presented by Dr. Reavis, the Assistant Superintendent of the Cincinnati Schools, in 1940 on the occasion of a technical training seminar on “The Administration of the School Curriculum With Respect to Individual Differences.” The fable demonstrates how much more effective education can be when student’s strengths and interests are recognized and incorporated into the curriculum.

This fable is now public domain. There are a number of versions available online and many include variations to the original. When addressing curricular issues, Agricultural Education has long touted serving the needs of students and communities. Whereas, some may feel the profession is already on the cutting edge. The moral of *The Animal School* should be revisited often, as often as new cohorts of students start down the path of education.

Aligning Curriculum with Teacher Needs

by Kirk Edney

Where are we going with curriculum issues?

Ernest L. Boyer, in his definitive report on school reform “High School,” identifies the second goal of education as promoting student learning through a curriculum based on significant, shared human experiences. The basis for curriculum has changed little since the report, but the landscape of curriculum issues is certainly more varied.

When viewing the curriculum landscape, the most significant landmark is that all state education agencies differ in their views on curriculum requirements. Across the country you find varying levels and strengths of state mandates for agriculture, food and natural resources curriculum. Texas provides educators with standards called the essential knowledge and skills (TEKS), which mandate curriculum content for each approved course. This design is to ensure similar course content between districts. Texas does not mandate what courses are taught other than core courses specifically required for graduation. Some states may simply mandate graduation requirements, and allow districts the flexibility to meet those requirements. This scenario may make it challenging for teachers to find curriculum that specifically addresses their state mandates.

When aligning curriculum for specific needs, these state mandates

must be considered. In some cases, national curriculum content standards may offer needed guidance and direction. The current National Content Standards Initiative, when completed, should be an excellent tool for providing curriculum structure and guidance for some states. Many states allow greater options for local control of curriculum. Certain agriculture, food and natural resources courses may be considered to meet science credit requirements on student transcripts in those states.

Avoid the pitfall of equating

Two distinct issues strongly impacting curriculum development and dissemination are intellectual content and method of delivery.

curriculum with textbooks. Curriculum guidelines provide educational structure; textbooks are content that may or may not be aligned with that structure. Teaching a textbook ‘cover-to-cover’ is not necessarily the same as teaching the curriculum. Some states choose to fund textbooks selected through an extensive approval process at no cost to the individual districts. Other states allow teachers to pick and choose from an approved or suggested textbook list; while still other states allow teachers to pick and choose resources as they see fit, and encourage those teachers to gather whatever resources they can find. Curriculum development is expensive and time-consuming; customizing curriculum resources to meet specific states’ standards can be a beneficial option for some entities. Curriculum standards or guides are essential to enable teachers to deliver high-quality instruction using the resources available. Textbooks, laboratory activities, life experiences and other resources are tools that quality teachers use to teach the curriculum.

Two distinct issues strongly impacting curriculum development and dissemination are intellectual content and method of delivery. The intellectual content on which our profession focuses is food, agriculture, natural resources and leadership development. Content must be technically accurate and learner-appropriate. Additionally, any curriculum must be rich with opportunities to

reinforce contextual applications of mathematics and science. Materials associated with contemporary curriculum must have sufficient variety between text, images, media content, and other components to have value for individuals with different learning styles. Selection and utilization of appropriate images used in curriculum development is an additional consideration for intellectual content. It can be challenging to capture relevant video footage for curriculum products on a timely basis. Also, curriculum must be delivered in a format technologically appropriate for the campus, teacher and learner. A teacher may wish to utilize online curriculum delivery, but with inadequate computers in the classroom, this creates a challenge.

The number of emerging players in the curriculum field is on the rise. Complete and/or supplemental curriculum products are available from industry trade groups such as the National Center for Construction Education and Research (NCCER) and the National Automotive Technicians Education Foundation (NATEF). Manufacturers such as John Deere and Lincoln Electric have developed tremendous educational resources and training programs. Our federal government has developed some excellent curriculum materials, such as those found in the OSHA General Industry Safety training program. These types of products focus on industry certifications and attempt to provide training for career fields experiencing shortages of trained employees. As schools are strongly charged with the responsibility of preparing students for industry certification, these industry-driven curriculums are

finding greater acceptance and demand. Continued emphasis on the career cluster /career pathways initiatives will drive the demand for these types of curriculum.

Noteworthy examples of specialized curriculum are the National FFA's LifeKnowledge materials, the Kauffman Foundation materials on entrepreneurship, and other specific curriculum applications by trade groups. Local demand and increasing urbanization has led to the development of courses in such areas as companion animal care and veterinary technology. Enrollment in these courses has continued to expand in spite of the availability of or access to quality curriculum. The Council has made a tremendous impact in curriculum development, offering focused materials to meet specific emerging needs. The Council continues to be a positive, progressive force for agriculture, food and natural resources education.

Some regional educational service centers (ESCs) in Texas have emerged as curriculum developers. Product development by these centers is often driven by the implications of the No Child Left Behind legislation and its call for adequate yearly progress, or AYP. These types of products are generally contextual or 'applied' materials, and seem to be effective in raising student test scores in targeted areas. Other states may have similar entities with similar roles.

A curriculum issue that must be dealt with is accountability--matching what is taught to what is tested, measured, or evaluated. In today's arena of high-stakes testing, this challenge does not apply directly to agriculture, food and natural resources education.

The side issue that emerges is "How does what you teach in agriscience support or enhance what the science or math teachers cover?" This should not really be an issue for career and technical education teachers; we have always been the delivery arm of curriculum integration. The Perkins legislation charges us to do exactly this--to support and enhance what is taught in the general classroom. As professionals in agricultural education, we appreciate the responsibility of providing more real-world applications for mathematics and science content.

What are some lessons we need for the profession?

Regardless of the intent of curriculum issues in state and national arenas, education happens at the local level. The impact of quality curriculum on teaching and learning takes place in public school classrooms. It is important to remember that when it comes to curriculum, one size doesn't fit all. Every school simply cannot effectively participate in all of the curriculum innovations at one time. There is a limit to the number of pathways a school can offer, a limit to the number of unique courses that can be taught.

A school's existing facilities can limit the effectiveness of the curriculum. In most cases, effective horticulture programs need a greenhouse and functional aquaculture programs require tanks and ponds. To be effective in teaching real-world skills, instruction in power, structure and technical systems instruction needs laboratory space and industrial-quality tools and equipment. School districts and educational leaders at various campuses may also have differing expectations

regarding curriculum.

Educational technology can also be a factor in curriculum delivery. The digital divide still exists. To deliver a contemporary curriculum, a teacher must have access to contemporary educational tools.

Early adopter and early majority teachers may prefer electronic curriculum delivery, but schools and students must be positioned to utilize that format. If a school's online grade book won't interface with a teacher's test generator output, text-based testing of the taught curriculum may offer the best solution. Schools will continue to incur some printing cost, and many students have learning styles or needs that necessitate the use of text-based materials. Printed samples of student output can be effectively utilized during parent conferences.

Delivering curriculum content through podcasting may be an intriguing option, but students and schools must be in a position to support utilization.

Curriculum selection should be an on-going process, and should last all year, not just a few days in the fall or summer. Agriculture, food and natural resources teachers need continuing opportunities to view the different curriculum products that are available. A difference also exists between the formal and informal curriculum, between the classroom curriculum and curriculum materials focused on experiential education.

Workshops by Kent Feeds and other manufacturers also deliver important content, which translates into daily teaching and learning. Emphasis on the leadership skills developed through student

participation in FFA calls for curriculum development and training in this area. Many leadership lessons are taught through less than formal school settings, at camps and meetings. The need for a coherent, quality leadership development curriculum is strong. Fortunately, the quality of our student leadership instruction is held in high regard and we can point to many examples of the success of our curriculum. Other disciplines have seen the need to develop specific courses for student leadership development.

The need continues for teachers to receive training on various aspects of the curriculum, such as strengthening the mathematics and science context. The efforts of the AgrowKnowledge project,

Continued on page 25

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2008

Subscription Rates to Increase

In an effort to continue to improve the quality of the magazine and cover the rising cost of production, *The Agricultural Education Magazine* will increase subscription rates for the first time since June 1994 when rates increase from \$7.00 per year to \$10 per year. Beginning in January of 2008, subscription rates will increase as follows:

- Domestic rate \$15 (including mailed copies and password access to issues archived on the web)
- Domestic rate \$12 (hard copies only)
- Domestic rate \$10 (digital access only--password entry)
- International rate \$22
- Institution bulk rate \$7

The Agricultural Education Magazine has served the profession of agricultural education for eighty years. It has documented the history and evolution of an educational system with humble beginnings in Des Moines, Iowa that is now recognized as the premiere educational systems in the world. The Editing & Managing Board offer our thanks to the subscribers and practitioners that have helped make this publication an integral part of the profession.

and various state-managed Perkins-funded projects are very beneficial as curriculum products. Participants in the Delta Conferences return to the classroom with a highly visible commitment to be effective teachers. Content learned at skills-based summer workshops is also incorporated into effective teaching and curriculum revision.

The effectiveness of a curriculum may be difficult to measure. If students do not attempt or are unable to master industry certification examinations, how will accountability issues be resolved? Some communities may have preconceived ideas about evaluating the curriculum and effectiveness of local programs.

How do the various trends affect both beginning and experienced teachers?

On my office wall, I display a 1978 AVA Journal cover depicting “today’s vo-ag teacher” and the multitude of issues, including curriculum, with which practitioners deal daily. Articles in the September/October 2006 issue of this magazine remind us that teachers continue to deal with these same issues today

Professional development continues to be important for both entry-level and experienced teachers. Training in curriculum issues is essential to broaden knowledge base, improve teaching skills and delivery methods, and to simply broaden awareness of available curriculum products. Teachers need opportunities to look at exactly what curriculum is available, and how curriculum in agriculture, food and natural resources can be a major contributing factor to student

success.

Beginning teachers need curriculum products that allow them to experience teaching success as they develop their own personal teaching skills. These teachers may need more complete, all-inclusive curriculum materials containing content, sequencing, evaluation, and delivery tools that are probably aligned to state curriculum standards. Mastering the process of effectively teaching the curriculum allows beginning teachers to “survive and thrive,” and get past those challenging first five years on the way to becoming experienced teachers. As novices improve their knowledge base and expand their teaching style, they are in a better position to tailor delivery and evaluation products to the curriculum content they cover. Maturing teachers will enhance their curriculum through the addition of personally-selected manipulatives and revised demonstrations.

Agriscience teachers will continue to be self-directed learners, and will work to identify and utilize what works best in their locales. Agriculture, food and natural resources programs have generally had some degree of autonomy in curriculum selection. Campus educational leaders usually depend on agriscience teachers to be the best judge when making curriculum choices. When it comes to curriculum selection, teachers in local school districts will determine the best fit.

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Glatthorn, A. A. (1994). *Developing a quality curriculum*. Alexandria, VA: Association for Supervision and Curriculum Development.

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2008 Magazine Themes and Theme Editors

January/February 2008

Theme Editors: Carl Igo
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John Ricketts
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University of Georgia
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“Sustainable Agriculture—Sustainable Education

How can we ensure a future for Agricultural Education?”

Sustainable agriculture integrates three main goals--environmental health, economic profitability, and social and economic equity. This movement continues to gain momentum in our society. But, *what about the sustainability of Agricultural Education?* Since 1929 this Magazine has served as a reflection of the health and well-being of the Agricultural Education profession. What will we report in 2008?

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March/April 2008

Theme Editor: John Rayfield
Assistant Professor
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“Passing the torch—What do you say to students considering a career in Agricultural Education?”

“Enrollment in teacher education programs in agriculture is at an all-time low, but the demand for well-educated agriculturalists is at an all-time high,” (Robert) Martin said. “The retirement of baby boomers is beginning to increase the need for teachers in agriculture and other related areas, such as science, math and consumer sciences” (Iowa State University College of Agriculture and Life Sciences’ News Release, August 2007).

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May/June 2008

Theme Editor: Robert Torres
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“Problem Solving or Appreciative Inquiry— Which is best?”

Problem solving is the process of moving toward a goal when the path to that goal is uncertain (Michael Martinez). John Dewey developed a sequence of steps that are referred to as the problem-solving sequence.

Appreciative Inquiry is about the co-evolutionary search for the best in people, their organizations, and the relevant world around them. (David Cooperrider and Diana Whitney). Appreciative Inquiry has been referred to as the art and practice of asking questions that strengthen a system’s capacity to apprehend, anticipate, and heighten positive potential.

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July/August 2008

Theme Editor:

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“Leadership opportunities for underrepresented populations-- What are YOU doing?”

Diversity is about empowering people and promoting the human spirit. It makes an organization/group effective by capitalizing on all the strengths of each participant or member. Simply enforcing government regulations will not get you to be the best. To obtain the fullest competitive edge, you need to create great teams by using the full potential of every individual. Teams are much more than a group. A group is collection of individuals where each person is working towards his or her own personal goal or agenda, whereas a team is a collection of individuals working towards a common goal or vision. This creates a synergy effect within the team -- one plus one equals much more than one.

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September/October 2008

Theme Editor:

John Mulcahy
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“Is Agricultural Education *really* the premiere educational delivery model?”

Agricultural Education involves a myriad of expertise. Effective classroom teaching, laboratory management, FFA organization activities and development, utilization of teaching and learning principles, problem solving skills, and extended educational moments through Supervised Agricultural Experiences are only part of the requirements of an ideal program. The question is—are all programs so complete?

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November/December 2008

Theme Editor:

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“If you could do it all over again, what would you change?—Reflections on teacher preparation practices.”

Preparing the next generation of Agricultural Educators is a daunting responsibility. Times and methods change continually. How do you know which practices should be kept and which should be changed or replaced? This issue seeks to ask the practitioner in the field what worked (and still does) for them, and what do they wish had been part of their preparation.

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