The Agricultural
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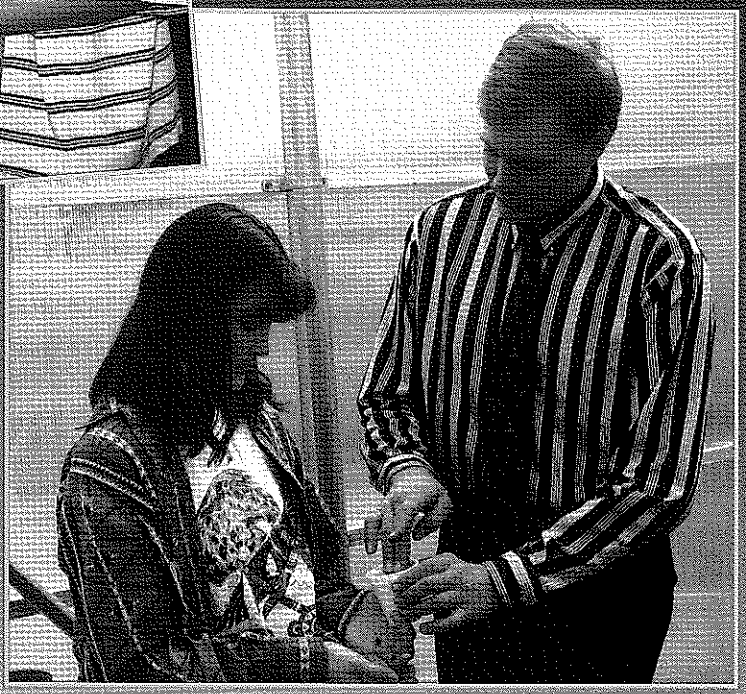
MAGAZINE

September-October 1996
volume 69
issue 2

Focus on Teaching



- The Magazine is Changing
- Students: Bored of Education?
- Attitude and the Value of Environment
- Fins, Feathers and Fur–Oh Yes!

Editor's Comments

The Magazine is Changing

By Lou E. Riesenberg

Dr. Riesenberg is professor and head of agricultural and extension education at the University of Idaho, Moscow.

As you've noticed by now, *The Magazine* is changing. During its December 1995 meeting in Denver, the Editing-Managing Board decided to cut the number of issues per year from 12 to six and add four pages per issue starting July 1, 1996. In addition, the board requested a complete make-over of the publication.

It is the board's hope that these changes will add value to the publication and better serve our readers. I encourage you to comment on these changes and provide further input on what you'd like to see in *The Magazine*. You can send e-mail to lriesenb@uidaho.edu or fax us at 208-885-4039.

Theme: Focus On Teaching

Dr. James J. Connors, as theme editor, has very ably assembled this issue focusing on classroom teaching in agricultural education. He and the other contributing authors have given us different views of this activity we call teaching. We hope you find the articles enjoyable, inspirational and informational. Incidentally, have you been to the "Head of the Class" in answering Dr. Moore's historical quizzes? We are interested in knowing our readers' scores. Feel free to submit yours!

Looking for Success Stories

During 1995, we tried to establish a new feature, "Success Stories," with marginal success. We have received many suggestions of programs and individuals to be the focus of an article, but not many good articles. We believe there are many excellent programs in our profession. Our intent is to highlight agricultural education programs that are successful (the program does not have to have won an award to be eligible) and share the 'secrets' of that success with other teachers.

Send in Your Story

We receive many requests for more articles about down-to-earth, hands-on, non-theoretical, out-in-the-field teaching tips for the classroom teacher. However, as a professional journal, we do not write the majority of articles published. Rather, we rely on articles submitted from the field. I challenge you to write and submit articles to *The Magazine* that feature techniques you've found work well in your program. Please take time to share your successes with your peers by submitting your stories for publication.

Author Guidelines Available

To assist you in preparing your story, we have author's guidelines available. The guidelines cover everything from how to prepare your manuscript to the types of manuscripts we publish.

In addition, we can provide you with a guide full of tips for editing your work. For a copy of these items, send your request via e-mail to lriesenb@uidaho.edu or fax us at 208-885-4039.

Send in Your Thoughts

At your request, *The Magazine* has begun a "Letters to the Editor" column. We're interested in your reaction to the content of this and all subsequent issues as well as your thoughts on the challenges and issues of our profession. You may send your comments to my attention via fax, e-mail or the post office (see page 3 for the address).

Upcoming Themes

Because of the change from 12 to six issues per year, three of the themes planned for 1996 will be carried into 1997. However, the themes for July/August, September/October and November/December 1997 have not been determined. We welcome all suggestions. The themes will be determined and announced in the January/February 1997 issue.

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About the Cover

Student teachers Al Brofman and Brian Wolf practice their instructional techniques with students during their student teaching experiences in Idaho in the spring of 1996.

SUBSCRIPTIONS

Subscription prices for *The Agricultural Education Magazine* are $10 per year. Foreign subscriptions are $20 (U.S. currency) per year for surface mail, and $40 (U.S. currency) foreign airmail (except Canada). Student subscriptions in groups (one address) are $5 for eight issues and $6 for twelve issues. Single copies and back issues less than 10 years old are available at $1 each ($2.00 foreign mail). All back issues are available on microfilm from Xerox University Microfilms, 300 North Zeeb Road, Ann Arbor, MI 48106. In submitting subscription, designate new or renewal and provide mailing address including ZIP code. Send all subscriptions and requests for hardcopy back issues to the Business Manager: Glenn A. Anderson, Business Manager, 10171 Suzanne Rd., Mechanicsville, VA 23111. Publication No. 737246

ARTICLE SUBMISSION

Articles and photographs should be submitted to the editor, regional editors or theme editors. Items to be considered for publication should be submitted at least 90 days prior to the date of issue intended for the article or photograph. All submissions will be acknowledged by the Editor. No items are returned unless accompanied by a written request. Articles should be typed double-spaced, and include information about the author(s). One hard copy and one electronic copy of articles should be submitted. A recent photograph should accompany the article unless one is on file with the editor. Articles in the magazine may be reproduced without permission.

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Theme Editor's Comments

The More Things Change...

By James J. Connors

Dr. Connors is an assistant professor of agricultural and extension education at the University of Idaho, Moscow.

The saying goes, "The more things change, the more they stay the same..." Could this be true in education? Every year about this time *The Agricultural Education Magazine* takes its annual look at classroom teaching. And every year the articles focus on what being an agriculture teacher is really like. In past years we have focused on the difficulty of teaching, what it is like teaching "in the trenches" and how teachers can stay on the "cutting edge." These articles made me ask the question, how has teaching changed?

"Good teaching is a matter of professional pride and satisfaction on the part of the teacher."

A Look Back

In 1934, Arthur Williams of the U.S. Office of Education wrote several articles for *The Agricultural Education Magazine* that looked at the professionalism of teachers. In one article Williams (1934) asked the question, "What constitutes good teaching?" He came to the conclusion that good teaching is a matter of professional pride and satisfaction on the part of the teacher. A good teacher should regard his/her job not as a meal ticket nor as a stepping stone to some other position but as a source of satisfaction and self-expression in living "the good life."

Over the years teachers have also striven to determine the effectiveness of their instruction. In 1951, J.A. Starrak, teacher educator from Iowa State College stated, "Our teaching may be regarded as effective when, and only when, it has produced in our students the changes which we desire to make and when those changes are relatively permanent" (pg. 272).

Many educational professionals would suggest that the recent emphasis on the integration of academics and critical thinking into agricultural education is a new phenomenon. Yet 13 years ago, Lowell Hedges (1983) wrote, "A teacher is primarily concerned with bringing about relatively permanent desirable changes in the student's basic skills of thinking, reasoning, judgment, manipulative skills, creativeness, communication, attitudes, appreciations and understandings" (pg. 8).

These examples show that many of the qualities that make up good teaching have been known for decades. One has only to look back in the literature to find good examples and ideas for making classroom instruction effective and meaningful for students. The one essential component is a dedicated teacher willing to give that extra effort to educate today's students.

School Bashing

In today's society, many people might ask why on earth would anyone want to become a teacher? Almost weekly there is a new article or television segment that laments the decline of the American educational system. In 1955, U.S. scholar Jacques Barzun wrote, "Teaching is not a lost art, but the regard for it is a lost tradition." Teachers today are often criticized or blamed for the perceived decline in student achievement. But much of this criticism is ill conceived. After studying the history of these negative attacks, Bracey (1995) stated, "I looked into the history of school-bashing and found it to have been a favorite pastime almost from the beginning of the public schools" (pg. 159).

Teachers are in a position of significant importance. By nature, their position will always attract attention and, in most cases, criticism. With all the negative publicity teachers receive, I recently decided to ask a group of graduating seniors in agricultural education why they decided to teach. Some of the responses I received included:

- "I love agriculture. I also enjoy working with young people, and I really like to watch them learn,"

"Vision without action is only a dream, action without vision simply passes time, but vision with action can change the world."

"More and more teaching positions are opening throughout the country. Existing agriculture programs are expanding and additional programs are opening at new schools."

- "I like kids and enjoy seeing them learn and develop," and
- "I would like to teach agriculture because I would like to influence young people in not only agriculture but also personal skills, leadership and ownership."

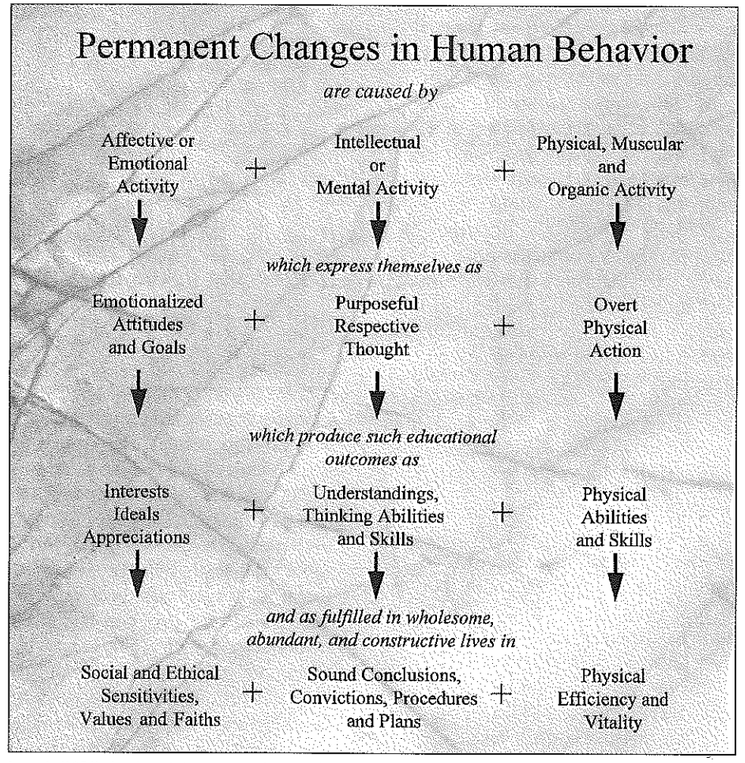
Obviously these students have had good experiences in education and see the importance of providing quality education in agriculture to interested students.

A Look Ahead

What will the future bring for agricultural education? That is the 10 million dollar question. I envision a bright future for the profession. Within the past few years, we have seen agriculture enrollments and FFA membership increase year after year. More and more teaching positions are opening throughout the country. Existing agriculture programs are expanding and additional programs are opening at new schools. Parents are becoming more concerned about educating their children in food safety, environmental protection and the development of leadership, citizenship and entrepreneurship skills. Agricultural education is the only subject matter area that is diverse enough to teach students about this wide range of subjects.

Futurist Joel Barker professes the importance of having a positive vision for the future. In his video titled *The Power of Vision*, Barker states, "Vision without action is only a dream, action without vision simply passes time, but vision with action can change the world." What is your vision for the future of your agriculture program, your FFA chapter or your community? As you begin this school year, what changes and improvements can you make in your teaching?

This issue of *The Agricultural Education Magazine* is dedicated to giving you ideas and examples in different areas of classroom teaching. A variety of agricultural education professionals share their experiences in classroom environment, teaching methods, student attitudes, utilizing facilities, residential and Native American agriculture programs. As you read these articles, I hope you will find interesting ideas that help you develop a vision for the future of your agricultural education program.



Starrak (1951) developed this system chart to describe changes in human behavior that result from good classroom teaching.

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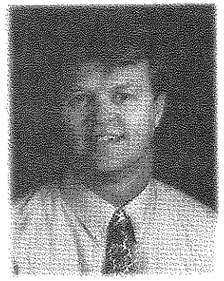
Theme Article

Students: Bored of Education?



By Pat Earle

Mr. Earle is the agriculture instructor at McBee High School, McBee, SC.

Enthusiasm? In the classroom? From students? No! It can't be! As I eat lunch with all the other teachers, I hear the horror stories of students gone mad, students not wanting to participate, students not wanting or unable to learn. How can a teacher be expected to work in this kind of environment? As teachers, we must first look inward. How is your enthusiasm? There's an old adage that I keep on my office desk that says, "Students don't care how much they learn until they learn how much you care." Your enthusiasm for your subject matter and its importance to the students' education must be obvious.

Generating Enthusiasm

To create enthusiasm, one must generate some level of student success. Have you ever had a student in your classroom that every other teacher has complained about, but in your class, he or she works hard and participates in all activities? One that you didn't know was a discipline problem until someone told you? Maybe the difference is s/he has enjoyed some level of success in your class. How? I like to believe that in agricultural education we address students' different learning styles, as reflected in our FFA Motto: "Learning to do, Doing to Learn..." Whether a student learns most efficiently through visual, auditory, kinetic or tactile strengths, we as teachers must find the method in which most student success occurs.

Creating Understanding

Many times, teachers just don't understand students and their process of learning. They teach the way they were taught. Teachers tend to be like the lady in a story told by the late congressman from Missouri, Jerry Litton. It seems there was a meeting in Eastern Colorado between sheep producers and environmentalists who were opposed to killing the coyotes which had been plaguing sheep producers. One lady offered her solution. "Why don't you trap the male coyotes, operate on them so they can't reproduce, then release them? This would reduce the number of coyotes." To this a sheep rancher replied: "Lady, you don't understand the problem, they ain't raping the sheep, they're killing them." Teachers must be able to "understand the problem" some students have with traditional classroom instruction. In agricultural education, we teach to students' strengths rather than to their weaknesses. This allows each student to achieve levels of success they may not reach in other areas.

> *"Students don't care how much they learn until they learn how much you care."*

Measuring Success

Do your students become "Bored of Education?" What is education? There are numerous definitions. In the education field, we devise standardized tests to measure students' knowledge and skills. We classify those who do well as "educated." In my agriculture classes, I tell the story of two of my first year ninth grade students being assigned the dubious task of digging an irrigation ditch for a drip irrigation system we were installing on the school grounds. They became jealous of the senior student who was supervising, and one went over and wanted to know why this senior didn't have to dig. The senior responded, "education."

The ninth grade student asked, "What's that?"

The senior placed his hand on a post and told the freshman to hit his hand. Just before the shovel landed, the senior moved his hand out of the way. "That's education," he said.

As the ninth grade student resumed digging, the other freshman prodded, "What did he say?"

"He said he had education."

"What's that?" the second ninth grade student asked. Then the first ninth grade student placed his hand on his own forehead and said, "Hit my hand..."

Teaching Life Skills

My philosophy of teaching is to strive to develop skills and knowledge to better enable one to earn a living and be able to get the most out of living. That is education! At the end of their first year in ninth grade agricultural science, I ask students to write a paper on the value of agricultural education in our schools as they see it. One boy wrote, "It teached [sic] me to live."

This helped me formulate my philosophy of teaching. It's not enough to just impart knowledge. We must recognize the concept of total student development as being necessary for students to assume successful roles in society and to enter the labor market.

I read an illustration comparing the amount of knowledge known to man as increasing in the last 50 years from the size of a golf ball to the size of a basketball. In education, illustrations such as these cause us to puff out our chest with pride but, in reality, what good is all this knowledge if we are unable to use it?

I remember the first year after I graduated from Clemson University I was eager to impart all of this knowledge and impress some of the adult farmers in my community. Standing by the fence, I began to suggest all the ways this farmer could improve production.

His response was simple and direct. He said, "I already know how to farm better than I do." This taught me that knowledge is not enough unless we use it. This emphasizes the need to improve the quality and relevance of instruction in teaching.

Whether it involves the high-level thinking skills of livestock evaluation or something as simple as which direction to turn a bolt, if we can relate this knowledge to something students can use, we will be successful. In my classes, we try to develop the total student by developing leadership, enhancing citizenship responsibilities, promoting cooperation with others, overcoming discrimination and stereotyping, and by serving students of special populations.

Making Connections

The daily rewards of being a teacher include watching students gain life skills that make them productive citizens. The very best part of teaching is exposing students to the connection between the classroom and the "real" world. The responsibility is to make that connection true. By using everyday examples, students realize that classroom "learning" is meaningful to them.

As teachers, we need to establish expectations of our students to develop these skills. As we all know, students tend to perform to the level of expectations. The long term rewards are enjoying these students' successes many years after graduation. As our states move through the School-to-Work transition, we like to believe that in agricultural education, we've been doing this for years.

Teaching is more than a person standing in front of students telling them what the book already tells them. Teaching involves commitment to the students as people, and aiming those students toward being educated citizens. A teacher must make the content area relevant to the student on their level. A person is not a teacher until someone has learned something. My aim is to let my students learn so they can better their lives.

Meeting Local Needs

Agriculture in South Carolina is constantly changing with occupations becoming more varied and numerous. To prepare students to meet changes in technical agriculture, our department at McBee High School has developed a multi-faceted program designed to meet the unique needs of the students in our area. Chesterfield County is basically a rural county with more than 70% of the county's population classified as rural. Our school district has one of the highest percentages of students in career and technology programs in South Carolina. In our local district, we have students that are 25 miles away from school. Our school has approximately 250 students in grades 9-12. Enrollment in agricultural education has increased from 67 students in 1987 to 134 students in 1996, representing 54% of the entire student body. All are FFA members.

Creating Active Learners

Students in our program, which consists of agricultural science, agricultural technology and agricultural mechanics, are expected to participate in all activities. Students must become active participants in their education.

If I am sick and the doctor gives me an injection, I will probably get well–even if I don't want to. However, education is not like that. There is no way one can benefit from education until they decide to become active participants. We in education spend so much time trying to put round pegs into square holes that we sometimes miss the main objective of education. It reminds me of the old butter mold my Grandpa had. We try to form every student using the same mold. We need to teach students, not just disseminate knowledge. We, as educators, must recognize that students have different learning styles. We must address those learning styles to be successful.

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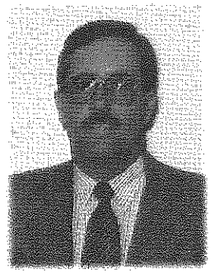
Tying Tradition to the Future



By Walter S. Wesch, Billye B. Foster & Jack F. Elliot

Mr. Wesch is an agriculture instructor at Baboquivari High School, Sells, AZ. Dr. Foster is an assistant professor and Dr. Elliot is an associate professor of agricultural education at the University of Arizona, Tuscon.

Yesterday

Agriculture has always been part of the Tohono O'odham way of life. According to tribal history, the Tohono O'odham have lived in small villages in the Sonoran Desert areas of Southern Arizona for thousands of years. When the Spanish came to the North American Southwest in the 1700s, they found the O'odham practicing their own form of irrigated agriculture. By utilizing floodwater from summer storms, the O'odham were able to grow a variety of crops, including corn, beans and squash. With the Spanish came domesticated livestock, and the O'odham began raising cattle and horses. Traditional O'odham floodwater farming slowly died out after World War II with the increase in employment and government social programs on the reservation.

Today

Today agriculture on the Tohono O'odham Reservation is a combination of individual family operations and tribal owned livestock and farming enterprises. All of the family operations are small, cow-calf herds. The tribal operations include several thousand acres of irrigated cotton, alfalfa and wheat, along with a large cow-calf range operation. Traditions are strong and change is slow to come to the Tohono O'odham tribe.

Agricultural education is relatively new to the Tohono O'odham Indian Reservation, having begun in 1969. Agricultural education at Baboquivari High School in Sells, Arizona, provides students opportunity to introduce the techniques and benefits of modern agriculture to their families.

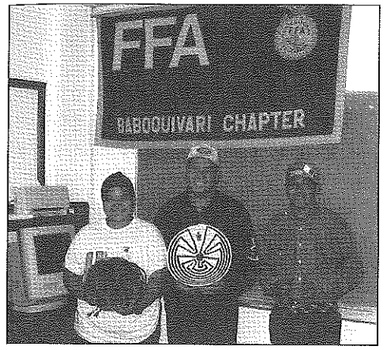
> *"Grandfather stands at the end of the field with the corn in a little bag of deerskin and sings the corn song. Then he speaks to the corn... then he gives the bag to mother."* (Underhill, 1951).

The reservation is an economically depressed area with limited private industry, and an annual unemployment rate of approximately 35 percent. Virtually all of the students are Native American with most considered to be economically disadvantaged. The agricultural education program at Baboquivari High School utilizes formal instruction, supervised experience and leadership development to deliver competencies necessary for employment, entrepreneurship and continuing education. Concurrently, the program strives to incorporate elements of traditional O'odham culture in program content and process. You may ask, "How can modern agricultural and occupational competencies be taught in such a strong traditional community? Can modern technology co-exist with traditional cultural practices and values?" Baboquivari's answer is to use elements of the traditional culture to teach and apply program competencies.

Tradition

For example, one of the mainstays of the traditional O'odham "hlmdag," or culture, is the manufacture of hand-woven baskets. Baskets were traditionally made and used within the household for a variety of tasks. Today baskets are sold as collectibles. Each basket is unique and handmade, exhibiting the talent of the individual artist who created it. Due to their individualistic nature and extraordinary quality, baskets range in price from $20 to more than $1,000.

The creation of O'odham baskets utilizes materials from three plants found in Southern Arizona. Beargrass (Nolina) forms the foundation of the coils of the basket and Yucca (Yucca) is wrapped around the coils. Beargrass and



Baboquivari FFA members with (left to right) Devil's Claw bundle ready for sale, finished hand-woven basket and seed pods. (Photo courtesy of Walter S. Wesch.)

Yucca are found in abundant quantities in the higher elevations of the reservation. Devil's Claw (Proboscidea) is used to form the black design in the basket and grows naturally at lower elevations. Devil's Claw has largely disappeared in the wild due to grazing pressure. Small quantities of Devil's Claw are grown under irrigated conditions in backyard gardens, usually by people who weave baskets. Most weavers prefer the irrigated product, as the fibers are longer and more flexible. High quality Devil's Claw brings a premium price as the demand usually exceeds the supply.

Three years ago, students at Baboquivari High School began growing Devil's Claw to sell to area basket weavers. This project brought with it new and more realistic ways to teach plant production, agricultural machinery and marketing competencies. Alfalfa, sudan grass and barley were already being grown at the school land-livestock laboratory, but these crops were fed to cattle owned by the Baboquivari FFA Chapter.

Devil's Claw provided a cash crop, complete with marketing strategies ideally suited for the learning environment. In addition to its educational value, the Devil's Claw project reduced the reliance on non-agricultural fundraising activities by the Baboquivari FFA Chapter. Producing and marketing their own agricultural products now allows FFA members to raise funds while attaining and developing program competencies.

The Junior-Senior Agricultural Science class first planted Devil's Claw in a 80' x 140' plot on the land-livestock laboratory in April of 1993. Student employees irrigated and cultivated the crop during the summer, and the crop was harvested when the new school year began in August. The crop was dried and bundled in the traditional manner by all students enrolled in the program. It was sold to weavers in the surrounding villages. Flyers and word of mouth were the primary sources of advertising. The 1993 Devil's Claw crop generated more than $1,100 from a 1/4 acre plot. More importantly, students gained competencies in botany, crop production, machinery operation, soil science, surveying, record keeping and marketing.

Reviving Tradition

In 1994, students grew and sold pumpkins in addition to Devil's Claw. Marketing expanded by selling Devil's Claw and pumpkins door-to-door in the villages surrounding Sells. This technique enabled students to reach older customers who did not often travel to Sells, the capital of the Tohono O'odham Nation. On request in the following year, an unusual variety of traditional O'odham winter squash was also grown. This crop catered to the elders in the community who revealed a desire for the type of squash their families grew when they were children.

Baboquivari FFA members cultivating the newly emerged Devil's Claw crop. (Photo courtesy of Walter S. Wesch.)

Since its inception, several unforeseen benefits have been realized from this enterprise. Raising a traditional O'odham crop has served to help reinforce the importance of the traditional O'odham culture for students at Baboquivari High School. On many Native American reservations, a generation has been molded by mass media to be more familiar with MTV than with their own heritage.

Benefits

Both the school district governing board and parents are very concerned with preserving the O'odham language and culture. Increased production of Devil's Claw has benefited basket weavers in the community by ensuring a stable, year-round supply of consistent quality material. Focusing on the importance of tradition and helping stabilize community income has created positive public relations for the agricultural education program and the school. Students from O'odham history and special education classes participate in the harvesting and processing, thereby creating a collaborative environment between agricultural education and academic instruction.

Tradition and Economics

The success of the Devil's Claw Project at Baboquivari High School has not been without challenges. The local Devil's Claw market is small and highly volatile. Even a small increase in production has caused demand to fall off necessitating price reductions. Annual income from the Devil's Claw has stabilized in the $600 to $700 range. One problem continually addressed is adjusting the amount grown to ensure there is sufficient activity

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Theme Article

Attitude and the Value of Environment

By Billye B. Foster

Dr. Foster is an assistant professor of agricultural education, University of Arizona, Tuscon.

In order to be an effective educator, what should we accept as our list of responsibilities? Should we become wizards at determining student learning styles? Should we devote our time to becoming the undisputed masters of our subject matter? Perhaps we should become disciples of leadership training, focusing all our energies to the development of that phase of our programs. Many would argue that Dewey's original five steps to problem solving should be at the top of our "responsibility" list.

Doubtless all of the areas mentioned are important. The question is not, "Which one is the most important," but rather, "Is that all there is?" Are we adequately prepared to be effective educators? Have we touched all the bases? Sometimes we become so engrossed in the technical wizardry of today's research and the recent discovery by other sources of "hands-on" teaching that we seem to forget some of the basic elements involved in effective teaching. We know what we expect of our students, but do we know what to expect of ourselves as mentors of learning?

Examining Attitude

Aristotle maintained that the way to teach good character is to expose children to it and invite imitation. Is it possible that our own attitudes could be imitated by our students? Agricultural education has been praised for the use of "hands-on" educational techniques. Rapport between students and teachers in our field has traditionally been positive. Are we so effective in this area that we no longer need to address the issue?

Recently on a trip through the campus bookstore, a new book caught my eye, *Mentors, Masters and Mrs. MacGregor*, by Jane Bluestein (1995). I picked it up and skimmed a few pages. I was sufficiently impressed and bought it. Back in the office, I allowed myself the luxury of reading a few pages of my new purchase. Basically, the book is a compilation of stories about teachers who made an impression on a variety of people's lives. The one common thread in all the stories I read was that the teachers created a pleasant learning environment for the students. "She made me feel special...," "He knew how to harness my energy...," "He brought a lot from that experience into the classroom...This was more real." "She used to say, 'Oh, I love the way Rosalee pronounces that word.'"

There are more than 170 stories recounted in the book, and they all have that same thread; a teacher who made students feel special, welcome in their classrooms, and welcome in their lives. Many stories told of students finding the teachers later in life and thanking them for having such a positive impact on the students' own lives. More times than not, the teachers seemed surprised at this revelation.

Creating the Right Climate

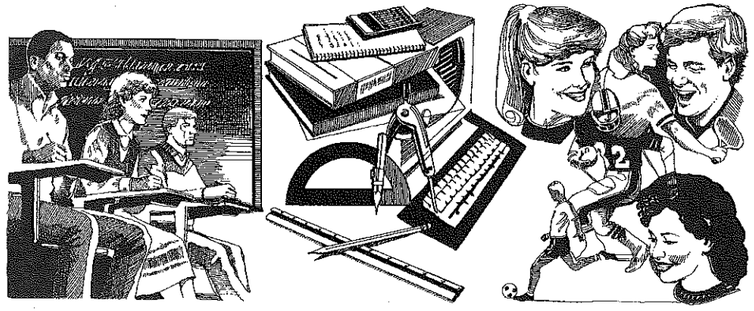
In agricultural education, we have always espoused the need for a comfortable classroom climate. Many teachers take for granted that the neatness or physical attractiveness of their facilities makes daily classroom routines more interesting. But what do we call that unnamed resource? Where do we teach how to be reachable by students? When should teachers learn how to be supportive and be a friend to their students without losing their authority? This issue is addressed in most teacher education classes or at least it is mentioned. Unfortunately, we often spend more time on classroom management and discipline techniques than on sound techniques for becoming a supportive and constructive teacher.

> *"The way to teach good character is to expose children to it and invite imitation."*

In his book, *The Power of Positive Teaching*, McCormick (1994) devotes at least two chapters to this subject. Along with defining the need for a positive learning environment, McCormick lists 10 items he believes people who establish positive learning environments do on a regular basis. Here is a brief outline of those items:

- Make students feel they are worthwhile and valuable.
- Make students feel welcome in the learning environment.
- Deal with needed behavioral changes in students from a positive point.
- Make use of appropriate nonverbal cues.
- Know students, their interests and needs and home situation.
- Learn to empathize.
- Establish acceptable standards of behavior and workmanship for productive performance.
- Make instruction student centered.
- Know the difference between discipline and punishment.
- Exhibit an enthusiastic teaching style.

McCormick later expands on this topic by providing a list of suggested techniques for establishing a positive learning environment. This list includes the use of "Happy Grams" and even simple ideas like shaking students hands occasionally as they enter or leave class.



Creating Expectations

The Pygmalion Effect has often been cited as a rule for teacher attitudes. It can be simplified to project the thought that people usually live up to what others expect of them. Older students, like children, behave as they are expected to behave. If their teachers perceive them to be a mediocre "C" student, why should the students try for more? On the other hand, many teachers can recite stories of average students who when told of their potential became superior "A" students.

According to Knight (1988), "How students perceive themselves (self-image) and feel about themselves (self-esteem) will influence their behavior as well as their achievement." Knight and many others proclaim that self-image/self-esteem are probably among the strongest indicators of student academic success. What is effective education? Doesn't success factor into this area? Perhaps it is not always reflected in academic success, perhaps it is also reflected in career or personal success. The bottom line is successful teachers have successful students.

Creating Enjoyment

Along with the need for structure, lesson plans, discipline, enthusiasm and knowledge of subject matter, successful teachers need to be able to create an aura of comfort in their learning environments. Whether in the classroom, laboratory or at an SAE site, teachers need to nurture the belief that it's OK to ask questions. It's OK to relax, because after all, the relaxed, stress-free mind is more apt to retain information for later use. It's even OK to have fun in the learning environment, as long as the fun is centered around the subject matter.

These concepts are not new to agricultural education. In fact, they are so well incorporated into most programs they become automatic. For example, a student has an SAE project that involves a greenhouse. The student produces bedding plants and hanging baskets. In the spring on a weekly basis, the student sells his/her products at a local farmer's market. Is it OK to enjoy this process? Is the student learning? Can the teachers build on this experience? The answer to all three questions is a definitive YES!

> *"Attitude is a little thing that makes a big difference."*

A positive learning environment incorporating a student-centered, comfortable–even "safe"–climate has always been a part of the agricultural education concept. However, the danger we face today is in thinking this type of classroom/laboratory environment should simply be intrinsic in our teachers. These things, like most others, can be learned. Behaviors can be developed. In addition, we should encourage these settings as they are truly one of the hallmarks of our program.

Many times as teachers or even as parents, we caution our students that attitude has everything to do with their behavior. Attitude is a commodity not only limited to use by students. Educators have attitudes. Good educators have positive ones.

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Theme Article

Fins, Feathers and Fur - Oh Yes!

By Susan Crank

Ms. Crank is an agriculture instructor at Northwest Career Center, Dublin, OH.

Hands-on experience is the foundation on which vocational and agricultural education are built. Educators know the benefits of hands-on experience to the learning process. In the Animal Management Technician program at Northwest Career Center, fins, feathers, fur and scales are the hands-on tools used to prepare students for careers in the animal industry. By combining hands-on experience with animals, students receive valuable experiences that replicate duties and responsibilities on the job.

School Laboratory

The primary hands-on experience we provide is through the school laboratory. Students work 2 ½ hours in the lab each day and are responsible for the daily operation of the pet shop and grooming shop which offer pets, pet products, and grooming services to the public. Students also manage the ward areas which house colonies of rats, mice, gerbils, hamsters, guinea pigs, rabbits, chinchillas, cockatiels, snakes and lizards.

The laboratory is divided into two rotations: grooming and ward/pet shop. In the grooming area students prepare paperwork, check in customers and groom dogs. Grooming duties include cleaning and plucking ears, trimming nails, brushing and combing, clipping pads and genitals, performing clipper work, setting patterns, bathing and drying dogs. Students are under a time constraint and must have their work done on time as dogs are picked up at the end of the school day.

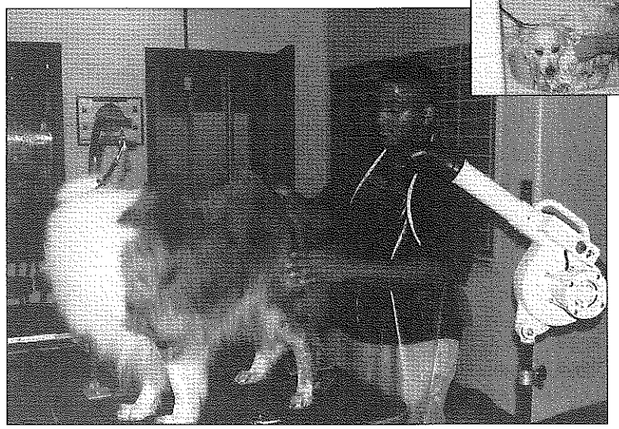
Although students have had prior technical information presented in the related class, students find it is quite a bit different learning about nail trimming than actually trimming the nails of a 90-pound uncooperative Rottweiler or brushing and bathing a wiggling, rambunctious Yorkie.

Besides the obvious grooming skills learned, an important part of grooming is the practical experience it provides in understanding animal behavior. Most students have had limited exposure to dogs. Some students have a dog of their own, but many have never owned a pet and have no experience around dogs. It is one thing to study animal behavior theory, communication styles, and body language, but quite another to apply it. Learning to restrain cooperative and uncooperative dogs can only be accomplished by practice. While students learn on well-behaved dogs owned by the instructors, further hands-on experience is necessary in order to master the skill.

On the job, students will need to restrain dogs for veterinarians or technicians as well as handle dogs in grooming shops, pet shops or boarding kennels. It takes practice with a variety of dogs to feel confident dealing with uncooperative or aggressive dogs.

Skill Development

In the ward/pet shop rotation, students are responsible for the care and management of all the animals plus the daily operation of the pet shop. In the ward area this includes: feeding, breeding, record keeping, cage cleaning, sanitizing, weaning and marketing of all animals. Junior students are primarily responsible for all feeding and cage cleaning while senior students are responsible for breeding and record keeping.



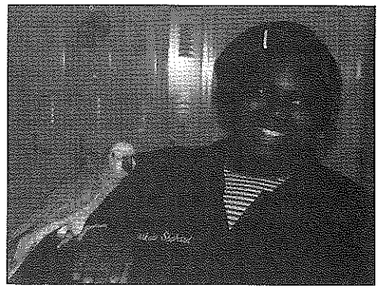
Students work with a variety of dogs to learn the basic skills of bathing dogs. (Photo courtesy of Susan Crank.)

Long-haired and double-coated dogs require more drying time. (Photo courtesy of Susan Crank.)

Students learn the diets, housing, handling and restraint, and breeding requirements of each species in the related class, and then put the technical information to work in the laboratory. As each species has different requirements, the same tasks are not done every day. Some animals' cages, such as rabbits and guinea pigs, are cleaned daily while gerbil cages are cleaned weekly. Students feed and water daily as well as perform daily observations and record keeping.

On cleaning days, all bedding is removed and the cage is cleaned and sanitized. Seniors use an established breeding system and move animals to breeding cages, monitor breeding schedules and move animals back to their permanent cages. They keep records and add nesting boxes to species requiring them and rebreed animals that do not conceive. As animals are weaned, students move them to the sales area in the pet shop for retail sales to customers or wholesale to local pet shops.

Developing observation skills and understanding the normal health of the animals is an important part of the ward area. Employers want employees to be able to recognize health problems or abnormalities in all species of animals. Daily observation sheets are used to record any abnormal health or behavior such as diarrhea, eye discharges, hair loss, injuries or any other problems. Sick animals are moved to the clinic area or treated with medications. If the problem is serious, the animal will visit the veterinarian.

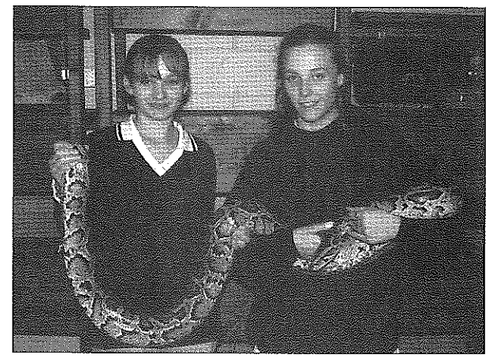


Students work with the school's blue front Amazon and learn the process of teaching a bird to speak a new word. (Photo courtesy of Susan Crank.)

In the clinic area, students also perform animal health skills such as weighing animals, taking temperatures, nail and beak trimming, administering medications and performing fecal flotations. All cage cleaning and disinfecting are done in this area also.

Pet Shop Operation

The pet shop is operated much the same as a retail pet shop. It is open to all students and to the public during school hours. Students are responsible for ordering, purchasing, inventorying, pricing, marketing, advertising and displaying merchandise as well as answering the phone, making grooming appointments, operating the register, writing receipts, balancing the register and assisting customers.



All varieties of pet shop animals are housed in the school lab, including snakes and other reptiles. (Photo courtesy of Susan Crank.)

The pet shop also maintains a tropical fish area which houses eighteen 33-gallon aquariums. As tropical fish sales is a large percentage of most pet shops' business, knowledge of tropical fish is critical for pet shop careers. In this area students learn feeding, water quality, equipment operation and maintenance, record keeping, aquarium set up and tear down, aquarium maintenance, fish identification and species knowledge. At the beginning of the year, each senior student is assigned an aquarium and is responsible for decorating, setting up and planning fish for it. A field trip to the wholesaler allows the student to select their fish and learn about their species. When the fish arrive, each student is responsible for acclimating and releasing their fish followed by setting the retail price for the fish.

Communication skills and customer interaction are important skills learned in this area. While public speaking events help students develop confidence in speaking in front of a group, learning to assist customers, check in of dogs, answering telephone calls and customer questions in a one-on-one environment is quite a bit different. Each situation the student faces is different and each customer's needs are unique. Good communication skills are essential as they can make the difference between the type of job and the rate of pay the student will receive. The school lab is an essential part of the learning environment. Without it, students would not be able to practice what they learned or to gain expertise at the various skills.

Mentoring

While the school lab provides many experiences and opportunities for students, because of curriculum, finances, equipment and time, there are skills we teach in related classes but do not have the opportunity to practice in the lab. Mentoring solves this dilemma while giving students the opportunity to experience, first hand, what a typical day is like on the job. Several times a year, students complete mentoring assignments. On mentoring days, students report to an employer and spend their career center time with them rather than at school. Students get to select the area of specialization they wish to visit and make arrangements with the employer regarding the day and time they will visit. Upon completion, students fill out a

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The Greenhouse as a Focus for Agriscience

By Tom Hurst

Mr. Hurst is an agriscience teacher, Vicksburg Community Schools, Vicksburg, MI.

When I'm asked what I do for a living, I usually respond that I am an agriscience teacher. The responses range from blank looks to genuine curiosity about the opportunities available in agriculture today. The conversations are good because they force me to focus on what my primary role as an educator really is: teaching!

As agriculture teachers, we know it is all to easy to get wrapped up in FFA activities, fund-raisers, school land laboratories, greenhouses and community development activities. What we were hired to do was teach: to expand the minds of our students, to expose them to a variety of activities and concepts, and to create in them the desire to be lifelong learners. Fortunately, the diversity and nature of agriculture and natural resources education allows us to accomplish these goals.

Integrating Activities

Agriscience educators use many methods to integrate classroom and laboratory activities. Activities should focus on student and community needs.

Vicksburg Agriscience is based at Vicksburg High School in Kalamazoo County, Michigan. We are part of a comprehensive high school and a county vocational consortium with the county agriculture program based at Vicksburg. There are approximately 740 students in the high school and 110 students in the agriscience program.

Kalamazoo County is a leader in greenhouse bedding plant production and our spring horticulture program reflects the production and marketing aspect of the area. Students follow greenhouse crops from ordering supplies and plant material through the final retail sale of their products. Profits from the greenhouse are used to fund FFA leadership development activities.

Starting Out

Students are first exposed to horticulture activities in the ninth grade natural resources class as general greenhouse workers. They transplant plugs and seedlings, take and stick cuttings, fill containers, pinch plant material and assist with general greenhouse tasks. The curriculum exposes students to a variety of agricultural sciences, and this is their introduction to the horticulture industry.

> *"What we were hired to do was teach: to expand the minds of our students, to expose them to a variety of activities and concepts, and to create in them the desire to be lifelong learners."*

In the second year botany and soil science course, the students focus on the plant science aspect of horticulture and agronomy. Students conduct investigations into a broad background of soils. Topics covered include:

- soil texture, permeability, drainage, compaction and formation
- extensive use of soil survey and field sampling techniques
- soil exchange capacity and nutrients
- micro and macro nutrients, soil pH, conductivity and organic matter
- soilless media formulations, slow release and soluble fertilizers

Lab Activities

Laboratory investigations and plant growth demonstrations are conducted by students when practical. The units are co-mingled with the botany activities due to the length of time required. Many of the investigations may require an entire growing season for results to be perceptible.

Students then participate in a general botany program with attention to the aspects we have found to be most relevant. These include:

- general plant structure of monocots and dicots
- seeds and fruits
- photosynthesis and respiration
- plant growth regulators, natural and grower applied, trophisims
- plant reproduction, sexual and asexual through many techniques
- plant nutrition and transpiration
- fruit and flower development

> *"In the botany and soils course, students learn the need for record keeping in crop growth, the steps in the planning process and the need for teamwork."*

Developing Research Skills

As the students progress through their soils and botany investigations, they are assigned a plant research paper. Research design is taught as the proposals are being developed. In groups of two the students must design, construct and carry out at least a two-month plant investigation. The project must fit within eight square feet of greenhouse bench space and contain no more than two internal variables. All experiments must have both a control and an experimental group.

Students are required to maintain a log of observations and complete a modified five chapter format research paper on their activities. Over the years, the research paper has become a major component of the course. It requires students to stay focused for long periods and to maintain accurate records. Every year some students are faced with the task of preparing a research paper with poorly collected data and insufficient logs. Completed papers are added to the students portfolios. Students are also encouraged to enter their research study in the FFA agriscience student competition.

In the botany and soils course, students learn the need for record keeping in crop growth, the steps in the planning process and the need for teamwork. Students receive a strong foundation in soils and plant physiology and apply the basic science concepts in their supervised experience program. After completing the course, students are ready for employment in the greenhouse management and operation industry.

Science Credit for Agriculture Courses

At Vicksburg Community Schools, we grant science credit for the first two agriscience classes. The vocational agriscience classes are taught all year for a double-class block, much as they would be at a vocational center. Students come from area schools starting as juniors or seniors. The mix of local students who have a background in agriscience with students who have a traditional science background can be a challenge. Needed remediation is handled by teaming students and the use of a technical program assistant. Incoming students may observe the ongoing investigations of the previous classes and will eventually pick up the basic horticultural sciences, but without as much technical depth.

Hands-On Learning

These students, with guidance from the teacher, select, price and grow all the marketable crops in the greenhouse. Variety selection starts in September, the first seeds are planted in December, and marketing is completed by the end of May. Production horticulture comprises about half of the curriculum, and other aspects of agriscience are covered during slow periods in the greenhouse schedule.

Developing Entrepreneurial Skills

By March, the students have worked through most greenhouse growing aspects and are ready to apply their skills to a realistic entrepreneurial business application. Working in teams of two, students must complete a greenhouse management activity which takes them through a full year's bedding plant operation.

Using industry publications and catalogs, they must complete a business and operations plan for a small spring-only operation. They must order all supplies, create schedules, recruit and train labor, assemble a cash-flow statement and create a marketing plan. All calculations are assembled using a computerized spreadsheet which allows for "what if" planning. The final document is a 10-14 page business plan.

Evaluation

Evaluation is two-fold. First, the teacher reviews the business plan for accuracy, completeness and understanding. Then, the student "attends" a simulated meeting with a bank agricultural loan officer where start-up and operating loans are analyzed. The operation must have a positive cash flow and return a reasonable wage to the entrepreneurs, in addition to an increase in net worth. People from the community with agribusiness and banking experience serve as the loan officers.

> *"Our students do not all enter production agriculture, but the entrepreneurial base is an asset to all."*

The plans are checked for realistic possibility of success, sustainability and increased operator profits. This part of the evaluation has been a strong motivator for students. They do not wish to be unprepared or inaccurate in front of prominent community members.

The following is the Greenhouse Management Activity utilized in the Vicksburg Agriscience Program.

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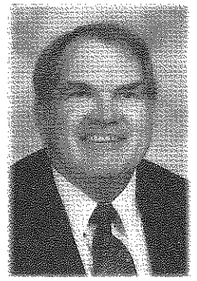
Join Us in Cincinnati for the AVA/NVATA Convention



By MeeCee Baker & Tom Heffernan

Dr. Baker is the NVATA president-elect and the agriculture instructor at Greenwood High School, Millerstown, PA. Mr. Heffernan is the current NVATA president and the agriculture instructor at Pleasanton High School, Pleasanton, TX.

The AVA and corresponding NVATA conventions are slated for December 4-8, 1996, in Cincinnati, Ohio. The AVA Agricultural Education Division Policy Committee, along with the convention program chair, detailed the division's schedule this past spring. This year's meeting promises beneficial activities including inspiring speakers, an agricultural education trade show, numerous professional development workshops, and relevant business sessions. All NVATA members will be receiving pre-registration information early this fall. We invite you to meet with the members of your profession at this exciting event.

Speakers

Gregory Justice, associate professor of theater arts at Virginia Tech, will serve as the division kick-off speaker. Justice employs acting techniques to improve classroom teaching. His presentations link professional theater techniques to instructional methodology. Voice, physical being, nerves and energy will be examined in this insightful and entertaining performance.

The division closing session will bring Dr. Jane Coulter of the USDA to the podium. Dr. Coulter is widely recognized for her untiring advocacy of excellence in education, and her role in launching numerous USDA higher education national competitive grant programs. Furthermore, Dr. Coulter served as the driving force behind the USDA effort to develop the first national computerized on-line information system for accessing a vast array of data on the attributes of the United States food and agricultural sciences higher education system. Dr. Coulter received the USDA Distinguished Service Award, the highest award given by the USDA, in 1987 and 1993.

Special Events

Three other division activities are planned. An agricultural education trade show will feature instructional materials and products for the profession. A continental breakfast will compliment this event. In addition, a legislative forum featuring national leaders will update participants on current issues. Lastly, a social event will be hosted by agricultural educators from the tri-state area surrounding Cincinnati.

Workshops

NVATA will again host several professional improvement workshops. These in-service activities will take place on the morning of December 4 and the afternoon of December 6. Each teacher will have the opportunity to attend four workshops. Confirmed sponsors at this time include: Interstate Publishers, John Deere Publishing Company, The National Council for Agricultural Education, NVATA and members of the profession. Presenters will provide teachers with instructional materials to use in their home programs. Workshop topics include:

- Shade Gardening
- Time Management
- Block Scheduling
- Small Animal Management
- Agricultural Science and Lab Skills
- Diversity Issues in Agricultural Education
- Plant and Soil Sciences
- Environmental Science
- Equine Science
- Internet Uses in Agricultural Education
- Agricultural Policy (Farm Bill)
- Physical Science Applications in Agriculture
- Animal Welfare
- Biological Applications in Agriculture

Business

NVATA will conduct business in the new committee format adopted last year. NVATA regions will appoint two official delegates to each of the seven committees. In addition, all members are encouraged to participate in committee meetings. Two regional and three general business sessions are scheduled. Discussion during meetings is

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Agricultural and Environmental Education at Milton Hershey School

Since 1909, the generosity of chocolate magnate Milton S. Hershey has provided a cost-free education and home to underprivileged children at the Milton Hershey School (MHS) in Hershey, Pennsylvania. Founded as the Hershey Industrial School by Milton and Catherine Hershey, who did not have children of their own, the school first served as a home for poor orphan boys.

In 1918, three years after Mrs. Hershey's death, Milton Hershey pledged his entire personal fortune of $60 million toward support of the school, with a mission of offering a cost-free education and a home to the region's neediest children and training them in academics and vocational trades. Having been established for boys only, girls were first admitted in 1976. Milton Hershey School now admits boys and girls of any race, color, religion, nationality and ethnic origin. The Hershey Trust has maintained one of the largest educational endowments and owns more than 75% of the voting stock of Hershey Foods Corporation.

The school continues to strengthen its family-like community environment for the children who need it most, and to develop the education and community life support systems needed to allow each child to reach his/her fullest potential. The school's enrollment policy is steered toward admitting poorer children at a younger age whose parental or family support may be extremely limited or nonexistent. Many of the children come from urban areas and are from single-parent families. These children, the school believes, may benefit most from long-term stability in an environment where they are fully nurtured and educated. As a result of this supportive environment, students will have the opportunity to flourish and achieve high standards in their scholastic performance as well as in their total growth.

Agriculture's Role

The Agricultural and Environmental Education (AEE) Program is an important bridge between the school's history and the future development of our students as productive citizens in the 21st century. As a link with the past, the program honors the Deed of Trust by creating comprehensive opportunities for all students to be involved in agriculture, gardening and horticulture. AEE links to the future by showing students the relationship agriculture and the environment have on life in general and in various career opportunities.

The AEE Program serves as a complementary tool to enhance classroom learning for students in grades K-12. Students, house parents, teachers and other school staff members work together to create the academic infrastructure for projects that provide all students with hands-on learning opportunities and experiences to bring real-world application to classroom learning. For students, the AEE program provides an important and tangible linkage between what is learned in a book and how it is applied in a non-threatening, real-life experience. By providing these linkages, the program can generate greater enthusiasm for learning and higher levels of achievement. They also provide opportunities for setting and achieving goals.

By Marcia Paterson

Ms. Paterson is the director of agricultural and environmental education, Milton Hershey School, Hershey, PA.

The program's educational resources are focused on a 500-acre land laboratory. Of the 500, 68 acres are used for cropping and waterways. The land laboratory includes four centers: horticultural, environmental, animal and dairy and foods processing. Each center has a classroom as well as outdoor facilities and is staffed with instructional and assistant instructional advisors who facilitate projects and programs with students, teachers, house parents and other Milton Hershey School staff (see figure 1). Beyond the program's administrative staff of four, there are four instructional advisors and seven assistant instructional advisors.

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"The Agricultural and Environmental Education (AEE) Program is an important bridge between the school's history and the future development of our students as productive citizens in the 21st century."

Agricultural Education at Milton Hershey School, continued from page 17

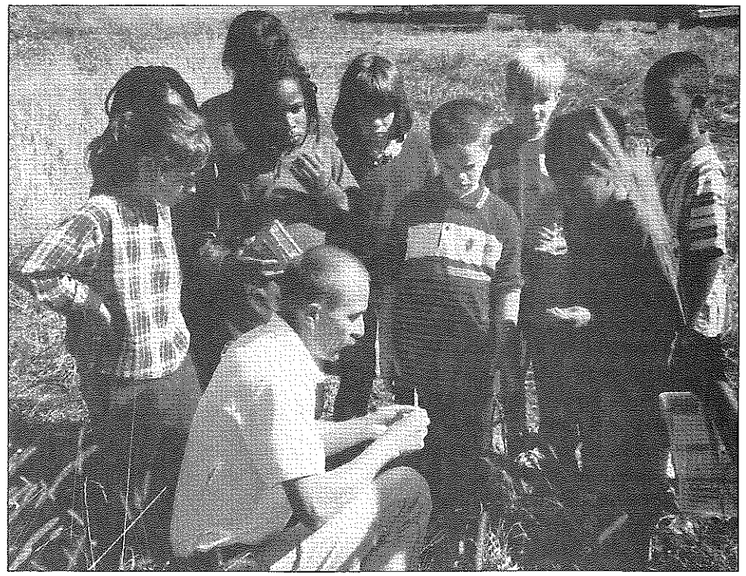
Student Projects

Each student-centered project—whether initiated by a student, teacher, house parent, MHS staff member or AEE staff member—follows the guidelines set forth through a tool called a project planner. Upon my arrival at MHS, I made it a priority to develop this tool and establish a formal process for documenting projects within the program.

The six-page document can easily be used for individuals or teams, as well as small or large group class projects. It is a necessary tool that helps instructional advisors and their assistants at each center organize, plan and support the numerous projects being accomplished by 1,100 students in a variety of groupings. It is not unusual for a student to be involved in the Environmental Center through a class and the Animal Center through their student home. 4-H and FFA members prepare a "project planner" before documenting information in their record books.

> *"The project planner covers goals, objectives, action plans, outcomes and accomplishments, anticipated budget, evaluation and reflection."*

The project planner covers goals, objectives, action plans, outcomes and accomplishments, anticipated budget, evaluation and reflection. Because of the complex administrative structure at the Milton Hershey School, it is necessary for all parties within the scholastic and community life areas to be knowledgeable about each student's projects, thus each planner must have the appropriate signatures of house parents, teachers, principals and residential administrators.



Steven Darhower, a member of the AAE Horticulture Center staff, works with elementary school students. (Photo courtesy of Marcia Paterson.)

The Horticulture Center

The Horticulture Center is located on the campus' east side a short distance from the school. The center provides opportunities for students to acquire first-hand horticulture knowledge through scientific research. Students engage in hands-on practical approaches by developing new varieties and propagating vegetables, fruits, flowers, trees and plants.

The AEE Program and Horticulture Center are fortunate to have business and industry partners that are excited about working with students. By hosting some of their own scientific studies, our students have the opportunity to study real test plots and experiments along-side industry scientists and producers.

Students have the opportunity to work with these crops in all areas of planning, soil preparation, planting, maintenance, harvesting and ultimately the marketing and sale of the consumable product to the public through the roadside Project Market, which helps emphasize the importance of science in our daily lives. Students also develop their entrepreneurial skills through growing greenhouse crops for the holiday season. This was a first for MHS students, and a resounding success for all of the individual participants.

For students interested in fruit science, 10 acres of land resources are devoted to apple, peach and nectarine orchards. Recently cherry and apricot trees and blueberry bushes have been added as additional enterprises. There is also a plot of strawberries that students harvest and market at a local auction.

Other major projects include a deciduous nursery that the sixth grade students will nurture for four years and market when they reach the ninth grade. This project will be accomplished with the aid of local business partners in the nursery/landscape industry. Students can also practice their design skills by participating in a landscaping project for many of the student homes on the MHS campus as well as planning, designing and planting a formal garden with a pergola.

Within the next year, a new facility is being planned that will include 7,200 square feet of greenhouse space. It will be divided into

Figure 1

Program Overview

- AEE director
- associate director
- coordinator
- secretary

Horticulture Center
- 131 acres
- fruit and vegetable trials
- greenhouse crops
- specialty gardens
- deciduous tree nursery

Animal Center
- 81 acres
- large animals (horses, etc.)
- small animals (sheep, etc.)
- aquaculture (indoor and outdoor)
- service animals

Environmental Center
- 85 acres
- environmental landscaping
- stream bank restoration
- natural woodland/wetland
- campus greenway

Dairy and Foods Processing Center
- 135 acres
- 70 head of Holstein cattle
- complete dairy operation
- replacement heifers and calves
- pilot plant for foods processing

different areas of concentration, such as foliage and tropical plants, research and production and a joint aquaculture/hydroponics area. Separate greenhouses will be constructed and outfitted for students in K-5 and 6-8. Adjoining the greenhouse space will be a headhouse, classroom, tissue culture laboratory, conference, office and program administrative areas.

Horticulture is introduced to students beginning at the kindergarten level with simple gardening projects that continue throughout the summer and fall months. As students enter the tenth grade, they have the ability to enter the horticulture vocational career pathway and, in three years, complete a certificate of initial mastery as authenticated by the craft committee, which is made up of local horticulture business and industry representatives.

The Environmental Center

The Environmental Center is located within a short bus trip from the school buildings and within a neighborhood of student homes. It is housed in a recently renovated dairy barn. The lower portion of the barn was gutted and the 5,000 square foot space was converted to an applied, experimental classroom including a wet lab, museum, conference and office space.

Students at all levels are involved in projects that focus on the stewardship of natural resources. Student activities also accentuate the interaction of our food and fiber needs within the context of environmental stewardship and conservation. They study the relationship between the control and management of natural resources and the five kingdoms of life. The 85-acre facility is located in the middle of natural woods, riparian zones and wetlands which are ideal conditions for raising trout. Some of the elementary 4-H students concentrate their time in maintaining 2,500 palomino, brown and brook trout from fingerling stage to their release during the spring season. One long-term project is to connect "green" areas of the 10,000 acre campus, much of which have natural springs and creeks, with an interpretive trail inhabited with native flora and fauna. This will happen by having students in grades K-12 complete small 4-H or FFA SAE projects initiated by their teachers, teams or house parents. Students have already benefited from interdisciplinary projects by studying Aldo Leopold and the current best-seller *Ishmael* by Daniel Quinn. Each of these pieces of literature creates an automatic connection with the balance of nature. Reading these and other writings help students become catalysts for conscientious stewardship of the environment.

> *"Students at all levels are involved in projects that focus on the stewardship of natural resources."*

The Animal Center

The Animal Center is housed in a number of facilities throughout the campus. Besides a horse stable and a beef cattle barn, many of the small livestock are housed in a larger facility that is shared with the Dairy and Foods Processing Center. Some student homes are host to a variety of animals including goats, rabbits, chickens, sheep and a conservation management and behavior program involving white tail deer. 4-H students work with service and seeing eye dog societies by fostering puppies through their first 18 months of life prior to specific training and subsequent to being placed with a handicapped or disabled individual. A number of 4-H members are also learning about animal therapy by providing a service to local organizations that serve senior citizens and ill children with visits from their trained 4-H animals that may include dogs, rabbits and chickens.

Within the next two-to-three years, the Animal Center will be located in another newly renovated dairy barn. This new facility will allow most activities to be located within the central campus close to the elementary and middle schools and student homes. Here, students will have the opportunity to partici-

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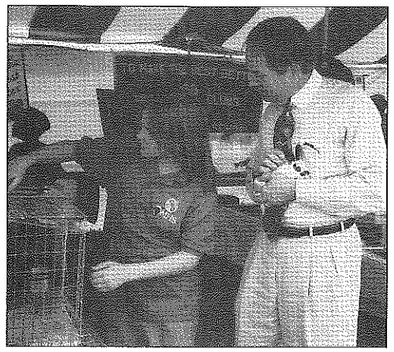
Agricultural Education at Milton Hershey School, continued from page 19



Dr. William Lepley and a middle school 4-H member at an annual MHS 4-H Fair where all 300 members can participate. (Photo courtesy of Marcia Paterson.)

pate in year-round equine studies, care and maintain for 4-H and FFA show animals, and experience first-hand, the relationship and bonding that takes place between people and animals. These situations will be tools and examples of interrelationship building for life-skill development, teamwork and community involvement. Students of various ages participate in 4-H and FFA and are involved in showing animals at local fairs and horse shows and at the State Farm Show.

The Dairy and Foods Processing Center

The Dairy and Foods Processing Center is a full-time dairy on the campus with an average annual production of 20,000 pounds of milk per animal per year. The center has a 70-head Holstein herd that does not include replacement heifers and calves. Students work with all ages of dairy cattle and at all stages of herd management. Through a variety of experiences, all K-12 students learn about food chains, reproductive cycles, animal behavior, economic interdependence, genetics, veterinary care, nutrition and governmental policies. Student interns from the summer of 1996 are preparing for gainful part-time employment in the center during the school year.

Summer Program Opportunities

Prior to the introduction of the AEE Program, summer employment for students at Milton Hershey School Farms was just a part-time job that did not focus on career pathways or opportunities. During the summers of 1995 and 1996, more than 60 high school students participated in on-campus internships that focused on education and skill development. Internships are available for students ages 14 and older. After applying, interviewing and accepting internship employment at one of the centers, each student plans a two-to-ten week program that includes an individual project. Students complete their internships with a résumé and a completed project planner that has real-life implications and connections.

Where is it all going?

The AEE centers serve as vital links to the world of work and continuing education through knowledge of specific career pathways and development of employability skills, including attitudes toward work. These linkages directly involve employers and business representatives in the curriculum development, instructional methodologies and evaluation for each program. Lessons and research projects reflect the demands of the workplace. On-the-job performance requirements and competencies are aligned with specific skills. With educational partnerships as its guide, the Milton Hershey School's Agriculture and Environmental Education Program is an action-centered program of student interactions within the scope of agriculture and the environment so that students are prepared to enter the private sector or continue their education and further their skills until they ultimately select a career.

Join Us in Cincinnati for the AVA/NVATA Convention, continued from page 16

sure to be lively in light of recent happenings in the agricultural education community. All NVATA regions will be electing alternate vice-presidents, while new vice-presidents will be selected from Regions III and IV. Furthermore, elections for national president and president-elect will take place.

Awards

Awards will be presented during the NVATA sessions. Winners from Ideas Unlimited; Outstanding Program, Teacher and Young Member; Honorary Life Memberships; Outstanding Cooperation; and Outstanding Service Citations will be announced. Sponsors of these award programs will be on hand to make presentations and greet teachers.

Celebration

For the second consecutive year, NVATA membership has increased! A membership gala recognizing membership gains and celebrating our association is set for Thursday evening. This event will provide the opportunity to enjoy a social evening with other teachers.

Please join us and the agricultural education profession at the national convention in Cincinnati. This year's events hold opportunities for advocacy, development and camaraderie.

Students: Bored of Education, continued from page 7

In order to do this, we must have student and teacher involvement along with discipline. We must develop attitudes, work habits, ethics, leadership skills and interpersonal communication skills. Students must learn to live and work in our society. I have responded to hundreds of questions from potential employers concerning student employment. Most often, they don't inquire about grades. Their questions center on the preceding traits. Studies have shown that employers tend to disregard grades and school evaluations and rely more on the job applicant's attitude, behavior and job work experience. They centered their questions on these traits when selecting workers.

How can we develop these desirable characteristics in our students? We must have support from the home, community and the students themselves working toward this common goal. Students perform up to your level of expectations. There seems to exist in our culture the expectation that young people are destined to fail. The trouble is, if you expect young people to fail long enough, it becomes a self-fulfilling prophecy.

Students are taught through instruction and work experience to develop skills and knowledge for employment and upgrade in employment. In my opinion, the greatest measure of professional contributions and accountability comes from student successes. For students to achieve success, there has to be challenge.

Students may try to give the impression of wanting to take an easy course when in reality, they want to be challenged. They want to learn. At some schools, the career courses were traditionally dumping grounds for underachievers. Using marketing terms, I believe if you offer a "product" that is salable to your "client," it will attract "customers." This product must be challenging to the students, and I believe that is what students truly want. During our last grading period this past year, more than 50 percent of the students in our agricultural education program were on the school's honor roll.

Measuring Success

Student successes are generated by involvement in class and its activities. Our students have consistently placed in the state's top ten in the Career Development Events in which we participate. Our agricultural mechanics class averaged 12 percent higher on state-wide achievement tests than agriculture students at other schools. Our FFA chapter has received the Gold Emblem in South Carolina in the National Chapter Program and has received the highest ranking eight years in a row. As we have developed leadership skills, our chapter has produced star farmers, South Carolina star agribusinessmen, National BOAC winners, and four state FFA officers in a row.

> *"I believe in the future of agriculture with a faith born, not of words, but of deeds..."*

There is no greater measuring device for student success than what occurs in the world of employment beyond high school. For the last seven years, our senior classes have had a placement rate of 78% based on the State Department of Education criteria. As one can see from these statistics, emphasis is placed on placement where employers actually hold you accountable. As our education system emphasizes the School-To-Work transition and a Tech-Prep curriculum, we may need to broaden what we, as educators, consider education. We must strive to educate a total student with many skills. These students would find their place in the world of work and be successful in their chosen field.

Setting the Stage

As you begin your school year and review the way to do business, let me challenge you to offer only the highest quality product. I would also like to bring attention to some words which should be dear to everyone reading this article. These words didn't mean much to me at first because when I first had to learn them, my thoughts about agriculture were somewhat different. In fact, the real reason I learned these words was that it was required of the Greenhands before they went on the FFA trip to the state fair. I can remember starting my first try, standing with my hands rammed into my pockets up to the elbows, rocking back and forth on my feet. "I believe... I believe... I believe I ain't going to the state fair this year."

But, I did learn those words, and they will stay with me. I want to challenge all agriculture teachers to take to heart the opening words of our FFA Creed: "I believe in the future of agriculture with a faith born, not of words, but of deeds..."

Fins, Feathers and Fur, continued from page 13

mentoring assignment describing what they did and learned.

Mentoring is a fantastic opportunity for students that provides valuable insight into their chosen career. Students may assist a veterinarian, observe surgery, work with unusual animals, perform animal health tests or administer medications. They may discover they faint at the sight of blood, dislike cats, get tongue-tied with customers or they love surgery, working with a large variety of animals, or the hustle and bustle of the work place. All experiences, good or bad, are valuable and allow students to modify and improve their career paths. This also better prepares the student for the job and provides a valuable learning experience.

Mentoring also provides employers with the opportunity to work with different students and a chance to evaluate them before hiring. Many employers were not hiring, but after working with a particular student they offered them a job. Some employers are on our advisory committee and many are long-time supporters of the program. We encourage their feedback and incorporate their ideas and suggestions into the curriculum.

Career Specialization

As our program area is unique, most traditional FFA Career Development Events do not serve our purpose. In Ohio, we have 12 Animal Management Technician programs and have five skills contest areas that incorporate skills learned in the program. The five events are: Dog Obedience, Dog Grooming, Aquarium Management, Animal Management and Animal Health. All events involve a written test, identification and a hands-on skill evaluation.

We approach skill events as a time for career specialization. Each student is required to choose one of the five skill areas to specialize in depending on their career goals. All five events are geared to various career areas such as veterinary medicine, grooming, pet shop, kennel technician, animal technician, obedience training or aquarist.

Beginning in January, we spend one day a week for 10 weeks in our career specialization areas. The instructors spend time with each group reviewing the previous week's assignment and giving quizzes. Students independently study technical information and breed or equipment identification as well as complete worksheets and practice skills. Students have access to flash cards, equipment and supplies. Employers and former students are invited to assist and provide small group instruction as well as hands-on skills practice. Many students arrange volunteer time to work or mentor at various businesses to gain additional experiences. At the end of the 10-week program, an event and evaluation is held with the winners going on to state competition.

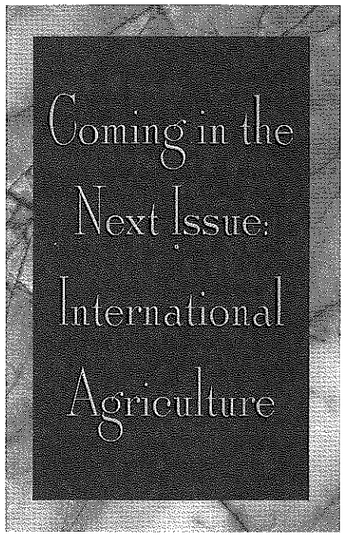
As our career specialization involves all students, every student gains skills, knowledge and experiences that will better prepare them for their career. Some students focus more intensely on their goals and others explore other areas in the animal industry. Regardless of the outcomes, all students have received hands-on experience and technical knowledge in a specific animal career.

Hands-on experience provides endless opportunities for students and creates a learning environment in which students can actively participate and learn valuable job skills. With all the different learning styles and handicaps students possess, hands-on experience allows students to be successful and to enjoy learning. Try something new and incorporate fins, feathers, fur and scales in your classroom. You can add a new meaning to "learning by doing."

July Quiz Answers

Here are the answers to the quiz published in the July 1996 issue of *The Agricultural Education Magazine.*

1. a. 1929.
2. d. 1952.
3. b. *The National Future Farmer.*
4. a. A herd of Angus cattle. Yes, a former Miss America was on the cover of the first magazine.
5. a. *The American Farm Youth.*
6. a. 6.
7. d. By FFA members in a national contest sponsored by the magazine. Charlie won in a runoff election. The four most popular names submitted by the students were Dwight, Egbert, Johnnie and Charlie.
8. b. Corn growing.
9. c. *FFA New Horizons*
10. d. 1996.



What Do You Know About SAE?

Go to the Head of the Class

By Gary E. Moore

Dr. Moore is a professor of agricultural and extension education, North Carolina State University, Raleigh, and is the historian for the American Association for Agricultural Education.

Agriculture students are expected to have Supervised Agricultural Experience (SAE) programs. SAE has been an important component of the agricultural education program for decades. How much do you know about SAE? The answers will be included in the next issue of *The Magazine.* GO TO THE HEAD OF THE CLASS if you know the answers.

1. The original name for SAE was:
   a. home-project plan.
   b. Supervised Occupational Experience program.
   c. farming project.
   d. supervised farming program.

2. When and where was the concept of SAE as it is fundamentally practiced today started?
   a. In 1906 at Cornell University.
   b. In 1908 at Smith's Agricultural School in Northampton, Massachusetts.
   c. In 1914 at Platteville High School in Wisconsin.
   d. In 1916 at USDA headquarters in Washington, DC.

3. The originator of the SAE concept studied philosophy under William James and earned both a bachelor's and master's degree in philosophy from Harvard. This person is:
   a. Liberty Hyde Bailey, Dean of Agriculture at Cornell.
   b. Rufus Stimson, State Supervisor of Agricultural Education in Massachusetts.
   c. M.A. Fields, Teacher Trainer at the University of Wisconsin Platteville.
   d. C. H. Lane, USDA Specialist for Agricultural Education.

4. The philosophy on which SAE is based is:
   a. pragmatism.
   b. idealism.
   c. realism.
   d. reconstructionism.

5. The federal law requiring agricultural students to have "directed or supervised practice in agriculture, either on a farm provided for by the school or other farm, for at least six months per year" was the:
   a. Adams Act of 1906.
   b. Smith-Lever Act of 1914.
   c. Smith-Hughes Act of 1917.
   d. Public Law 740.

6. SAE programs started to decline because the wording of a later federal vocational education act stated, "...such education may be provided without directed or supervised practice on a farm." The intent of the act was that SAE programs could be conducted off-the-farm in agribusiness, greenhouses, etc. The law was widely interpreted as students were no longer required to have an SAE program. This act was the:
   a. George Barden Act of 1946.
   b. National Defense Education Act of 1958.
   c. Vocational Education Act of 1963.
   d. Carl Perkins Act of 1984.

7. As a result of the previous act (question 6), a new type of SAE came into existence. This new type of SAE was:
   a. experimental.
   b. home improvement.
   c. exploratory.
   d. placement.

8. Two national conferences were held in the early 1980s (1982, 1984) to examine experiential learning in agriculture. A new type of SAE emerged from these conferences. This new type of SAE was:
   a. experimental.
   b. home improvement.
   c. exploratory.
   d. placement.

9. Immediately prior to being called SAE, this program was identified as:
   a. Supervised Farming Program.
   b. Career Education Program.
   c. Home Project Plan.
   d. Supervised Occupational Experience Program.

10. A current trend in education is actually a manifestation of the Agricultural Education SAE Model. This current trend is:
    a. School-to-Work transition programs.
    b. the Paidea Program.
    c. career academies.
    d. career education.

For answers to the quiz published in the July issue, refer to page 22.

Barnack's Method of Education

A View from the Agricultural Mechanics Laboratory Egress Opening (Shop Door)

By Jim Sorensen

Mr. Sorensen is an agriculture instructor at Kimberly High School, Kimberly, ID.

The theme for this issue is "teaching." Now even though I have not read any of the articles, I can guess that they will deal with all sorts of new and innovative methods of getting information into those little microprocessors known as students.

I have been around a long time (some think too long), and I have seen many changes in teaching methods. In the right hands, nearly any teaching method will work–even bribery. For example, last winter my students and I adopted a stray cat to live in the agricultural mechanics laboratory and learning center (shop and classroom). I have to admit that this particular cat was rather intelligent, as far as cats go. She learned that if she was a big enough pest, she got just about anything she wanted. In spite of this animal's ability to stare and look stupid and her ability to sleep about 22 hours a day, I was able to teach her to "lay down and roll over." Yes, when I looked at her and told her, "Aggie, lay down and roll over," she would usually do just that. Many people were amazed, and so was I, for that matter. One teacher asked me how I taught a cat to do tricks, and I responded that you can teach a cat to do about anything if you have enough patience. The trick is to get their attention. This brings us to the "Barnack method of education."

The Barnack method of education is simple. Those regular readers of this column will understand my love of acronyms, so it is called the DVPPR method of education. For the benefit of those unfamiliar with acronyms, it is pronounced: D as in duh, V as in very, and PPR as in purr.

D is for Desire

Now this does not mean lust, as some might think, but desire on your part to teach the little microprocessors so they don't grow up wearing a stupid sign around their neck, and desire on their part to not grow up to be the village idiot. I realize that some purists are cringing at the crudeness of the language and the fact that it is not currently politically correct. My advice to these people is to quit reading now, because it is about to get worse (or as some would say, more worser).

V is for Value

The material being taught must have some value to the learner. In other words, why is the material being presented? If you are the teacher and you cannot answer this question, then maybe you had better think things over. Just because the unit is in the curriculum guide or is in an FFA CDE (Career Development Event) does not mean it has value to your students.

P is for Perspective

One must occasionally pause to reflect on what it was to be a teenager. I was complaining to another teacher about the fact that my students did not know the difference between an Angus and a Hereford, and what's more, they did not seem to care. This old bird told me not to worry about it, as it was all a matter of perspective. He recalled that when he was a teenager, he was more interested in watching Mary than in learning the difference between an Angus and a Hereford. You know what? So was I.

P is for Practice

In other words, just presenting the unit won't cut it. The old adage: teach, re-teach and teach again if you want the students to remember seems appropriate here. This one was not a real problem for us in the agricultural education field initially. Now, with the number of students we have, the limited materials, the amount of material we are supposed to cover coupled with the amount of time that we have available, finding the time to practice is becoming more and more difficult.

R is for Reward

Everyone wants a reward for their efforts. Usually people think of a reward as being something materialistic. Buying students a soda for a good job or "just because" will often work wonders. However, a kind word, a thank you, or a smile is frequently reward enough. Students read teachers well. They can tell if you care about what you teach and if you care about them. Caring is rewarding for them as well as for you.

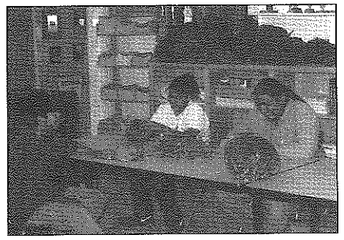
There you have it in a nutshell, Barnack's method of teaching or DVPPR. Remember that I have a degree from the South Hills Institute of Technology, so I must know what I am talking about.

Yesterday, Today and Tomorrow, continued from page 9

to teach the program competencies associated with the enterprise. This must be balanced with maintaining a stable price and assuring the community a reliable supply of Devil's Claw.

Tomorrow

Agriculture students at Baboquivari High School are exploring the feasibility of growing Beargrass for sale to basket weavers. While it is relatively abundant in the wild, Beargrass grows in rocky, steep mountainous areas. This makes it difficult to harvest for many of the elder tribe members. It is hoped that irrigated



Baboquivari FFA members bundling Devil's Claw seed pods for sale. (Photo courtesy of Walter S. Wesch.)

Beargrass can be produced at a price and quality attractive to consumers who currently either gather their own, or buy it from others. Investigating the possibility will offer further educational opportunities in marketing and agriscience competencies.

Teaching agriculture on a Native American reservation is a challenging experience. Utilizing formal instruction, supervised experiences and leadership development helps to meet these challenges. As true in any agricultural education program, identifying needs and developing strategies to address them creates a positive and successful learning environment.

References

Underhill, R.M. (1951). *People of the Crimson Evening.* Riverside, CA: U.S. Indian Service.

The Greenhouse as a Focus for Agriscience, continued from page 15

Vocational Agriscience: Greenhouse Management

You and your partner have entered into a greenhouse venture. As with any business you will do a business plan before seeking financing or starting any construction. You will operate the venture for one season as specified below.

Facility
- two bay gutter-connected greenhouse 48' x 150' x 10' gutter height
- double poly design, roof opening vents
- gas forced hot air heat
- 6-140' basket rails with drip lines
- spring-only production
- crop mix:
  - —20% perennials
  - —20% potted crops 3" or larger
  - —10% vegetables.
  - —50% spring annuals (40% impatiens, 60% mixture of 30 other varieties)
- baskets to capacity

Items Needed for Final Plan
- seed order with prices and totals
- plug and/or plant material order
- consumable orders: containers, soil, fertilizer, pesticides, etc.
- energy costs
- labor costs
- marketing plan and expenses
- equipment list and orders
- growing calendar
- Integrated Pest Management (IPM) plan
- overall purchase and financing plan
- crop goals and quantities
- cash flow projection

References

Vaughan Seed Catalog, Ball Red Book, trade journals, *Wenkee's Catalog*, BFG, Mollema's instructor, growers and lending institutions.

Other Items
- injector-2 head, carts, walkways, floor coverings, seeder, benches, seed house, lights, sprayer, alarms and others

Major Machinery
- fork lift/tractor
- delivery van/pickup
- other as determined

Heating Costs Per Square Foot

Month	70° F	55° F
Jan.	$.30	$.24
Feb.	$.26	$.20
Mar.	$.16	$.09
April	$.10	$.04
May	$.05	$.02

Purchase Considerations
- turnkey facility cost: $28,000
- structure, coverings, controls, heaters, vents, rails, drip system for baskets
- to be financed over seven years.

Other Points of Information
- You may buy pre-filled flats and baskets.
- You may use pre-mixed fertilizers.
- All greenhouse controls are on timers or thermostats.
- You may seed, buy plugs or a combination.
- Start-up may be financed on more than one loan.
- Equipment may have other uses.

Wrap Up

As students exit the program, they have a business base for whatever field they will enter. Our students do not all enter production agriculture, but the entrepreneurial base is an asset to all. The long-term feedback from students has been good even though there is some grumbling during the activity. They have been very successful in college agriculture and business programs, and many have entered the industry in a variety of allied applications in addition to horticulture. The final evaluation in the eyes of the community is the spring bedding plant sale when the greenhouse is opened to the public for retail sales in May. Students earn a commission toward FFA activities based on their sales referrals and customer service abilities.

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