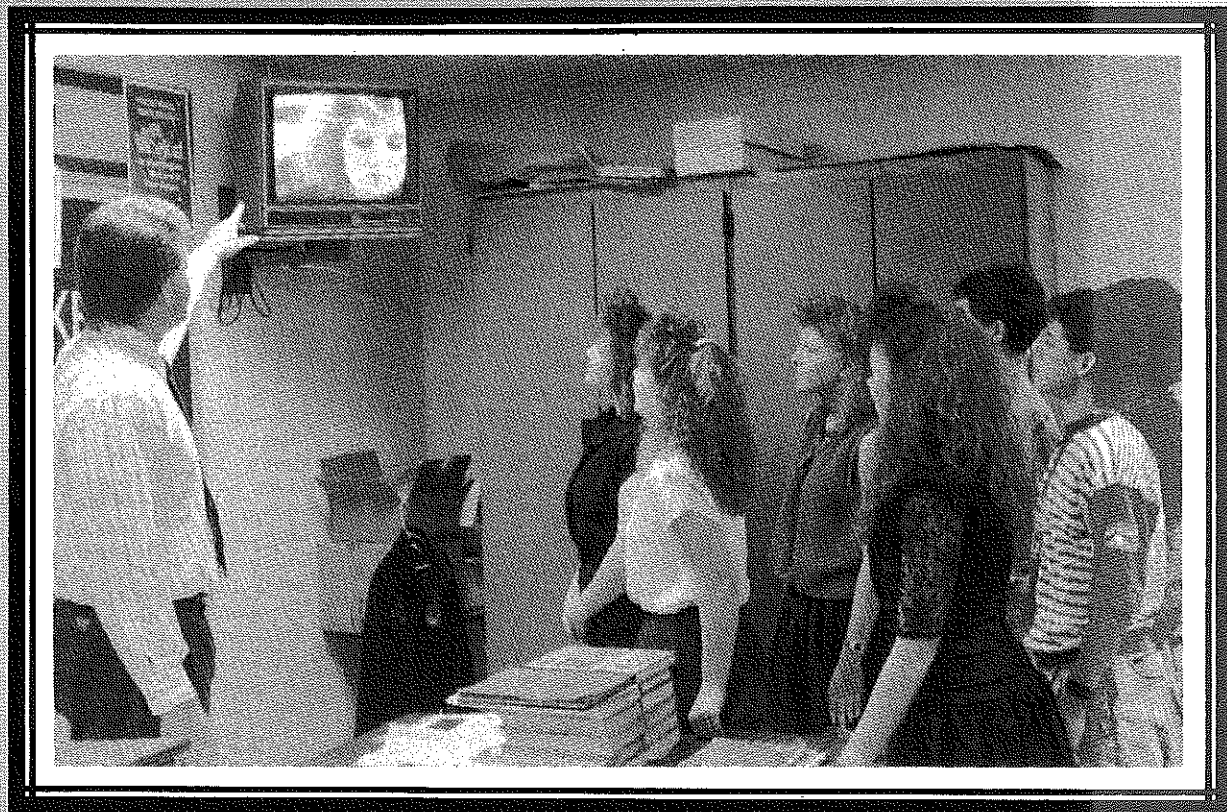


*The*  
**Agricultural  
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September, 1990  
Volume 63  
Number 3



**THEME:**  
**Focus On Teaching**

# THE AGRICULTURAL EDUCATION MAGAZINE



September, 1990

Volume 63

Number 3

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## ARTICLE SUBMISSION

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# Teaching Is the Tactic

The recent months have seen many changes come about in the profession of Agricultural Education. We have participated in, or at least witnessed such milestones as the National Study conducted by the National Research Council, The National Summit on Agricultural Education, the signing of the National Strategic Plan, and Summit II. Numerous other activities, planning sessions, papers, etc., have been conducted, processed, and written at both state and local levels.

Certainly one result of the preparation and release of the National Strategic Plan is that most, if not all, members of the family of Agricultural Education are developing plans for the future. The National Strategic Plan provides the profession with the framework by which we may develop strategic planning documents for each professional organization, each leadership development organization, each state, and each instructional program in agricultural education.

Concomitant with the strategic plans emerging from each entity identified above will be, or should be, the emergence of a series of tactical plans designed to provide the mechanism to implement the goals described in the strategic plan. It will be via the tactical plans and resultant implementation of those plans that the changes which are to occur will be precipitated. An example of this recently occurred in Arizona. A workshop was conducted in which a group of teachers and state staff personnel reviewed the National Strategic Plan, identified their own values, established ten goals for the Arizona Strategic Plan, adopted a Mission Statement, and drafted the Arizona Tactical Plan. The work has just begun! Now ratification of both the Strategic and Tactical Plans by the teachers in the state must be addressed. When that task is complete, the work must begin to develop appropriate planning documents for the teacher's association, the state department, the Agricultural Education Department, the FFA Association, the FFA Alumni Association, and each instructional program.

## Strategic Planning and Teaching

Along with the responsibility to prepare the Guest Editorial for this, the second edition of the Focus on Teaching issue, comes the opportunity to call for that Focus on Teaching to become pervasive in all subsequent Strategic and Tactical Plans. As I commented in the Theme Editorial in the first edition of Focus on Teaching, vocational agriculture has a rich history of high quality, effective, student-centered teaching. It is imperative that, irrespective of any changes which may, or may not occur, high quality, effective, student-centered teaching remain the hallmark of Agricultural Education. The planning process goes on. The future of our profession clearly lies in our own hands. We must build the future upon the solid foundation of the past. The cornerstone of our past successes is clearly our FOCUS ON TEACHING.



BY DAVID E. COX, GUEST EDITOR

*(Dr. Cox is Associate Professor, Department of Agricultural Education, The University of Arizona.)*

Throughout the ensuing planning process, we must begin the building of any programmatic renovations with this cornerstone.

## Teaching Is THE Tactic

A quick review of articles recently published in these pages indicates the ideas with which tactical plans will be developed. We have professionals who are thinking about including programs for elementary school age children, the elderly, pre-vocational education students, and other clientele groups. Others are gearing instructional programs and materials toward agricultural applications of science and/or high technology. Still others grapple with methods and intensity of application of subject matter through SOE and SAE. We all worry about the affect of the results of our own strategic and tactical planning upon the FFA.

No matter the direction of the future, agricultural education **MUST** profess and practice high quality, effective, student centered teaching. If this is not an integral, vital, and obvious part of every strategic plan, and put into practice by way of every tactical plan, the remaining parts of the plans will simply be paper. Without the continual emphasis upon effective instruction at every delivery point, Agricultural Education, or whatever we may call ourselves, will simply be lost in the milieu of mediocrity in public education.

As a profession, we must commit ourselves here, at the beginning of this academic year, to strategically as well as tactically practice our profession by practicing excellent teaching. Each of us in the profession must see to it that the strategic plans and the tactical plans for which we have input FOCUS ON TEACHING. Beyond input into the planning processes, as professionals we are obligated to practice our profession utilizing high quality, effective, student-centered teaching.

If each supervisor will emphasize teaching, and every teacher educator demonstrate effective teaching, and every teacher provide effective teaching, then we will truly be a profession which in strategy as well as tactics FOCUSES ON TEACHING.



# Effective Communication in Agriculture

*I have come to a frightening conclusion!  
I am a decisive element in the classroom.  
It is my personal approach that creates the class.  
It is my daily mood that makes the weather.  
As a teacher I possess tremendous power to  
make a child's life miserable or joyous.  
I can be a tool of torture or an instrument of inspiration.  
I can humiliate or humor, hurt or heal.  
In all situations, it is my response that decides  
whether a crisis will be escalated or de-escalated,  
and a child humanized or dehumanized.*

(A Poem, Author Unknown)

Teaching like communication is more complex than just sending and receiving messages. It is well documented that verbal messages have less impact than other forms of messages. Albert Mehrabian (1968) reported that only 7% of the total impact of communication was verbal. Thirty-eight percent of the impact was attributed to the ways in which words were spoken, and 55 percent of the impact came from facial expressions. It must also be added that the total impact of any given message also depends upon additional factors such as context and purpose of the interaction, and upon the perceptions of the interactants. The data clearly show that a teacher's actions are more important than what he/she may say.

The teaching process may be described as a reciprocal flow of information or communication which concludes in the processing of information, decision-making, and learning which may be cognitive, affective, or psychomotor in nature. Due to the role played by communication in the educational process, many researchers believe that communication skills should be taught to students or teachers and that nonverbal training be an important aspect of the instruction.

It is the belief of many researchers that teachers need to be informed of the nonverbal aspects of communication (Koch, Hall, 1971). Teachers are always communicating whether they are talking or not (Galloway, 1976). Their movements, gestures, tones of voice, dress and other artifacts, even their ages and physiques are continuously communicating something to the students. In like manner, students are continuously communicating with their teachers, a point too often missed by teachers relying solely on the verbal message for information purposes.

Over the years nonverbal communication has been categorized by many researchers who have come into contact with it. The following classification system fabricated by Knapp (1978) has seven categories: (a) **environmental factors**, consisting of elements infringing on the human relationship but not directly a part of it, such as additional noises, odors, colors, furniture, lighting, architectural style, and effects of previous action; (b) **proxemics**, which can be defined as one's social or personal space, such as territoriality, seating and spacial arrangement, conversational distance



BY STACY A. GARTIN, THEME EDITOR  
(Dr. Gartin is Associate Professor, Department of Agricultural Education, West Virginia University.)

and orientation; (c) **kinesics**, describes as body motions including gestures, gross body movement, facial expression, eye behavior, posture, and movement of other body parts; (d) **touching behavior**, consisting of teaching, hitting, holding, stroking, guiding another's movements, and greetings and farewells; (e) **physical characteristics**, consisting of physique, attractiveness, breath and body odors, height, weight, and hair and skin color; (f) **paralanguage**, including nonverbal cues that affect speech, such as voice pitch, volume, tempo and intensity, silent pauses, intruding sounds, and speech errors; (g) **artifacts**, which consist of clothes, make-up, perfume, hair pieces, eyeglasses, and various other beauty aids.

The positive use of nonverbal communication by the agriculture instructor in the classroom, with the student, parent, and employer in the supervised agricultural experience program, and in FFA activities, might solve many of the problems agricultural education is facing today. The decrease in the quality of supervised agricultural experience programs and enrollment in the FFA could possibly be reversed if more teachers communicated nonverbally the value and importance of SAEP and FFA to students. The use of nonverbal communication could contribute to our students' development of agricultural leadership, cooperation, and citizenship. The awareness of nonverbal communication on the part of the students and teachers could increase their competence and make them more gainfully employable.

The teacher is one of the single most important features in developing students to become more functional people in society. Teachers need to build a wide repertoire of knowledge in the area of nonverbal communication. This repertoire may assist teachers in becoming more culturally flexible and versatile. It may also assist teachers in operating within the students' frame of reference and minimize the incongruence that occurs between verbal and nonverbal communication.

## REFERENCES

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(Continued on page 22)

# Computer Technology Resources

## Database Managers: Functions For Today

"I need my computer to keep up with the changes. If I had to be a teacher without it, I'd find another job!"

"But Trina, nothing's really changed. I still have the same boys, in the same school, teaching the same old thing."

"Fred . . . everything's changed, the students, the facilities, the curriculum; I couldn't be the teacher I am today without a computer and a database."

The "Information Age" is upon us, a time which will be remembered by historians as an expansion of personal computer use and access to vast information resources. The old data management schemes, file cabinets, book cases, and rolodex aluable for static information, can no longer manage the fluid complexity and quantity of the information educators are responsible for today. As a result of increasing expectations for both students and teachers, the degree of accountability to which all of us are being held responsible will increase as well.

Developing new skills with regard to information management, skills that go beyond editing (word processing) or compiling results (spreadsheets), must include searching, sorting and indexing. Programs that allow manipulation of data in this manner are called Database Managers (DBM). You probably experience the most common uses of DBM programs on a daily basis without thinking too much about it; for example, the client/customer address file used to create mailing labels for this magazine is an application of DBM programming. Although this is a fairly generic use of a powerful tool, it is typical of the many tasks that can be accomplished. Powerful DBM application software is available from many software publishers; however integrated software packages (like AppleWorks or MicroSoft-Works) include DBM modules to create and manipulate "simple" data base files.

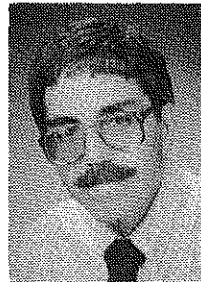
A DBM file can be thought of as a drawer full of information. Folders in the drawer (records) contain similar information. The data contained within each record is separated into sections called fields. Fields contain information unique to that record. Unlike a file cabinet, a DBM program allows the user to search, select and sort the information quickly and without the struggle or refiling all of the selected records when finished. Once the selection of data is complete, the results can be printed or saved in a file to be used later.

F: John L: Smith

F: Mary L: Stone

F: Hank L: Tuner  
A: 1821 5th St.  
P: 821-1524

G:12



BY NAT JAEGLI, SPECIAL EDITOR

(Mr. Jaeggli is Lecturer, Department of Agricultural Education, University of Arizona.)

In the student data base file above, a record was created for each student. Two field names appear for each record, first (f:) and last (L:) names. Additional fields might include a student's address (A:), phone number (P:), and grade (G:) in school. These records appear to be sorted alphabetically by last name. Records could be selected to include only those in 11th grade, or only those students living on 5th St. The real value of data base files begins to appear after large amounts of data begin to accumulate over several years. Now you can begin to search for relationships, and then sort and order the records into a fashion that most suits your purposes.

Many agriculture educators are being asked to be more accountable for the progress students are making in their programs. This is not only the grade students are able to maintain, but might include the number of SOE/SAE projects they participate in, the dollar value, the number of hours spent, and placement after graduation. This type of information is handled easily by DBM's and can be reported for the current year or any previous years that information exists in the file. Compiling this information by hand can be difficult, time consuming, and often inaccurate.

By merging the information in a DBM file, letters to parents or advisory committee members can be personalized with specific information. In addition to names, address, and salutation, a student's letter grade or committee responsibilities could also be included.

Although DBM's are generally considered to be a management tool, they can be used successfully as an instructional tool as well. Many kinds of records used by agriculturists can be incorporated into DBM files. These may include records for crops, fields, inventories, and livestock as well as commodity reports used to develop marketing strategies. Once the information has been loaded, students can begin to apply search strategies that help them discover relationships between records. Once DBM files have been created, they can be shared by others.

You may have read or heard about "Hyper Card Stacks." This is a fancy term for DBM files used by Apple Macin-

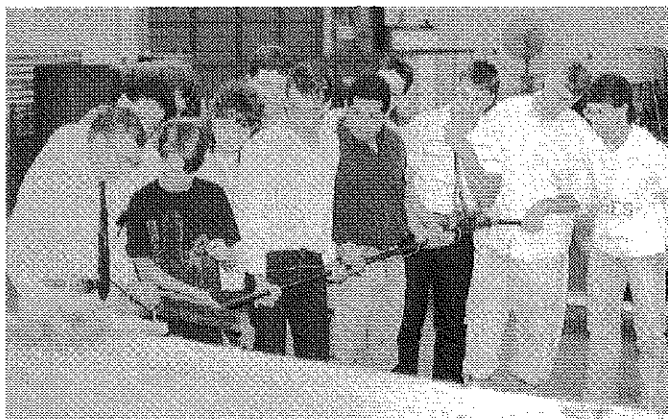
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# "YOU" Are the One

A wise old Chinese philosopher once said, "A journey of a thousand miles begins with a single step." When I began teaching, I, like many teachers set some goals, for myself and my program, many of which related to FFA achievements. My two major goals for teaching were (1) to learn something new each year, and (2) to always show that I care. At first it was not always easy to learn something new each year. Many fine teachers shared ideas and experiences with me. As I acquired knowledge and skills, I started giving my ideas to fellow teachers. Sharing knowledge, skills, and "tricks of the trade" is one of the greatest gifts one teacher can give to another teacher.

Since the early 1960's numerous changes have occurred in both agriculture and education. Most recently the profession has seen a push to establish semester courses. Some teachers are dragging their feet, while others are finding a renewed vigor teaching these non-traditional agricultural courses.

In addition to the traditional disciplines of animal science, plant science, soil science and agricultural mechanics, our program now offers semester courses in personal skills development, food technology, wildlife management and home maintenance. These new courses are of great interest to students who do not live on a farm.



"Traditional agriculture skills are still a part of our agriculture science curriculum." William Woody demonstrates the proper use of calf pulling equipment to a group of ag science students that are studying a unit in animal reproduction.

New concepts and approaches in agriculture science are highly motivating factors for some students who "don't want to be there." Most teachers have students that just don't care about anything. It is easy to say, "If they don't care, I don't care either." I have found that my greatest "trick of the trade" is to show I care. The excitement and motivation a teacher personally exhibits seems to always come back to them. Some students are intrinsically motivated, while other students must draw their motivation from the teacher.

Discipline is something all teachers must address. It has



BY WILLIAM T. WOODY  
(Mr. Woody is Agriculture Science Teacher, Lorena High School, Lorena, Texas.)

always been evident that when the teacher works hard every day in class, his/her discipline seems to be minimal. The question is, "how should the problem student be handled?"

Our school has an excellent idea. A thirty-minute activity period is provided at the end of each day. These thirty minutes are for voluntary or mandatory tutorials, detention for discipline, club meetings and other activities. If a student is not required to be in tutorials, detention, or a meeting, he/she may go home thirty minutes early. This activity period has been a tremendous improvement with discipline. The rule is, if a student loses time or fails a test, he/she must come to tutorials to make it up. This thirty-minute time period also gives teachers time to teach and reteach where necessary. This time is also used for enrichment. For secondary agriculture this time provides an opportunity to hold FFA meetings, and train leadership and judging teams. The activity period is such a productive time many students stay after school to continue to work. It seems the more we care about the students' enrichment the more they want to learn.

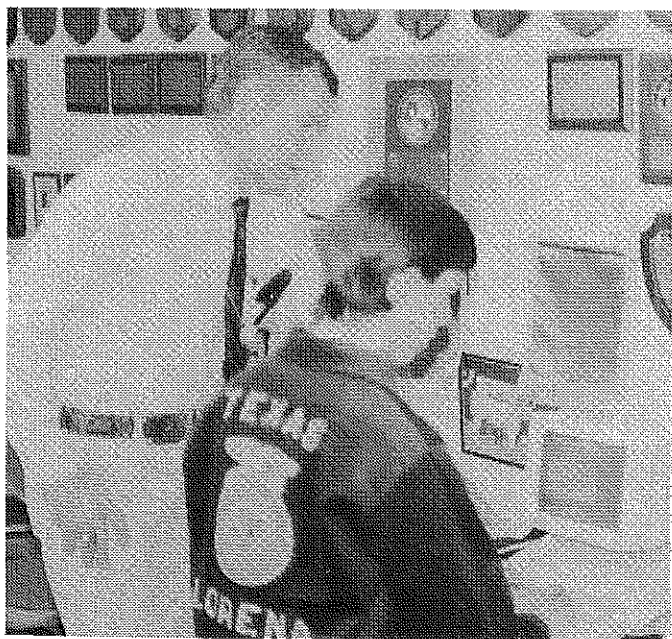


William Woody (center standing) and Dennis Mann (right) meet with FFA Booster Club members Woodrow Brewton (left) and Rod Carter (seated center) to plan activities for the Friends for Lorena FFA Booster Club. Mr. Brewton is the High School principal and Mr. Carter is past President of the support group.

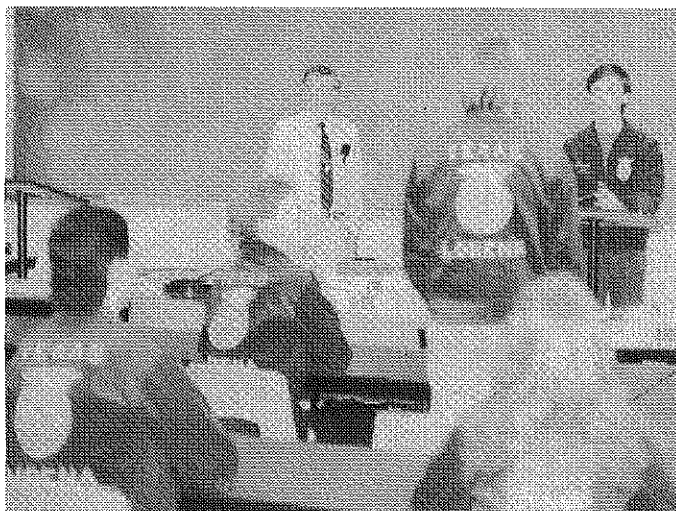
Each ag student is required to gain 1000 points in each semester course. Some points are gained in the class and laboratory, but a vast majority of the points are earned after school and on the student's own time. Teaching non-traditional young people the art of caring for animals has been a motivator in encouraging students to desire higher quality and large scope SAEP's. The school has made some land available for an ag science facility. The land lab makes it easier for more students to have a facility to house animals.

FFA involvement through classroom instruction has always been a strength of the agriculture program. An active FFA component can have a tremendous impact on student development. All programs should promote 100 + % of their students to become FFA members. In order for students to gain maximum benefit from the FFA, they have to participate. Deep down inside all students want to compete in something. FFA gives them this opportunity. The National Chapter Contest and BOAC are two activities that allow all members the opportunity to be part of a winning tradition. Classroom, laboratory, SAEP, and FFA activities promote student excellence and make it possible for many of our students to receive academic scholarships in agriculture. Local scholarships encourage young people to excel and also encourage high achieving students to remain in the program. The FFA Booster Club gives three local scholarships each year. In addition, there are many state scholarships available to students of secondary agricultural education.

Four years ago some of the ag program alumni organized a Friends of Lorena FFA Booster Club. The booster club truly enjoys giving the ag students opportunities for development and the chance of success. They have promoted a yearly local livestock show; they have several fund raisers, and are working on building facilities for the agriculture complex. Remember, start small, set rules and don't expect too much too soon. Try it. It will work.



William Woody works with Chapter President Randy Fehler on preparing the FFA Chapter's monthly newsletter. Randy is the editor of the "FFA News". Many articles are prepared by students in the Personal Skills Development classes.



William Woody is shown teaching parliamentary procedure in the new Personal Skills Development semester course. FFA chapter conducting ties closely to this course. Randy Fehler, the presiding officer, graduated Valedictorian of his class.

This writer believes that for a teacher to have the proper "Focus on Teaching," he/she must be a member of our professional organizations. A teacher must also work within these organizations to gain knowledge from teachers all over his/her state and this nation. Ag teachers can become actively involved in the agriculture teachers association at the state, regional and national levels. They can also become involved and are needed on numerous committees at these same levels. These experiences provide additional insight to what the business of agricultural education is all about. The profession needs you, and to be an outstanding and complete teacher, you need them. So, become actively involved in our professional organizations.

The teacher makes the difference. I teach with a very dedicated person, Dennis Mann. Mr. Mann and I are very dedicated to our program and each other. We work many hours more than we are paid. We believe that if you only work the hours you are expected to work, you will never be a success. "Those teachers who will leave their footprints in the sands of time are the ag teachers who wear work shoes." We also believe that if a student fails our class, we are failures, too, since failure is about the only thing that can be obtained without effort. This belief keeps us trying even when things never seem to work. We have found that tolerance is a great virtue and that the lack of ambition is fatal. So we study hard, train hard and coach hard. In the end we generally find that our results are equal to our efforts.

When we are very tired and feel no one really cares, Dennis and I always agree it will be all right as long as we care. One of the greatest rewards of all is when a student who had problems in school comes to us at graduation and says, "I would never have graduated from high school if it hadn't been for you two."

We give of ourselves to teaching and find that what we give we do not lose and what we have gained cannot be taken away. So, in the end, we will find it all to be a blessing for we have given so little and received so much. We will know that all our efforts could not have been in vain.

*(Continued on page 23)*

# Teach to Your Students' Strengths

Greg and Steven are seniors enrolled in the same agriculture course and are good friends. They are similar in many ways. Both enjoy sports, listening to music, and watching TV. They do well in science and math courses, but find English and history boring. Both participate in the same FFA activities and are described by their teachers as energetic and outgoing. They are enrolled in the same high school courses and have similar academic averages.

Despite their many similarities, Greg and Steven are fundamentally different. Greg would be best classified as "practical" and Steven as "scholarly." Greg is very mechanically oriented and can fix almost anything. Greg is extremely well organized, has a place for everything, and knows where it is. Steven reads constantly, notices very little around him, and often misplaces things. Greg has trouble following a lecture, but Steven follows lectures easily. However, Steven often gets bored when the teacher goes into complex details involving a procedure, and his attention wanders. The one place that Greg academically outshines Steven is in the shop. Greg seems to have an instinct for anything mechanical. He follows directions carefully and works very quickly, often completing a project well in advance of the rest of the class. Steven, however, seems to prefer the "trial and error" approach and consistently looks for a "better way" of completing an assigned project. He dislikes assigned projects and sometimes complains that they are not relevant. Often, this results in his projects being completed late or hastily completed as the time for projects draws to a close.

What is the fundamental difference between Greg and Steven? They have distinctly different learning styles. The process they use to learn new information is quite different, even though both may eventually learn what is required. Students of both learning styles may be excellent students and very successful in agricultural careers. But in many cases, the difference between how students learn and how teachers teach is too great. Students earn poor grades, become disillusioned, and drop out. In order to effectively teach students with a variety of learning styles, teachers need to understand the basic student learning styles and how they can accommodate the differences found in almost every agricultural classroom.

Learning style is a generic term used by educators to describe individual learning differences. Students differ in two basic aspects related to learning: their **perception** of information and **ordering** of information. Students perceive information as **concrete** or **abstract** in nature and order (or mentally process) information either **sequentially** or **randomly** (Butler, 1984). In general, perception deals with whether students find the new information as something they can directly see or apply (concrete) or some new idea that may not be directly applicable (abstract). Gregorc and Ward (1977) identify four distinct learning styles of students as (1) concrete sequential, (2) abstract sequential, (3) abstract random, and (4) concrete random. It should be noted that



By JIM FLOWERS

*(Dr. Flowers is Assistant Professor, Department of Agricultural Education, North Carolina State University.)*

there is no best learning style. Each of the four learning styles is equally desirable. Almost all students possess some characteristics of all four learning styles, but most students have a dominant learning style. In some extreme cases, one learning style is so dominant that students have difficulty learning in any other way. If a teacher uses teaching techniques that are compatible with a student's preferred learning style, learning should be enhanced.

## Student Learning Style

**Concrete sequential** learners prefer hands-on experiences for learning and step-by-step instructions. They not only look for directions, but they follow them carefully. They usually have well-developed senses and use them in learning situations. Concrete sequential learners need to see, as well as to hear. They see the teacher as the authority figure in the classroom and prefer being told what to do. A presentation or lecture must have a clear order and sequence, or concrete sequential learners will not be able to follow the presentation. Concrete sequential learners need a learning environment that is free from distractions.

**Abstract sequential** learners are characterized by strong reading, listening, and visual translation abilities. The adage that a picture is worth a thousand words is particularly true for abstract sequential learners. They love to read and are able to develop the main ideas from the material they have read. They want "substance" in a lecture or presentation. Abstract sequential learners are not affected by a dull lecture if the information is relevant and organized. Like the concrete sequential learners, they need a learning environment that is free from distractions.

**Abstract random** learners are "people oriented." They pay close attention to human behavior and prefer to work in groups. The presentation skills of the teacher are especially important to abstract random learners because they tend to evaluate the learning experience as a whole. Regardless of how important the information is, it must be presented in an interesting manner in order to be effective. Their preference is for less structure in their learning activities, and they often need additional time to reflect on what they have heard before it "makes sense" to them. They are not



bothered by a "busy" environment; in fact they seem to thrive in an atmosphere in which a lot of different things are happening at the same time.

**Concrete random** learners have an experimental attitude. They tend to get the gist of ideas quickly and are able to make intuitive leaps. They tend to skip steps and are often criticized by teachers for not "showing all of the work" or for "jumping to conclusions." Concrete random learners prefer to find answers in their own ways. They often prefer the trial-and-error approach over a set of directions. They prefer to work independently and are often excellent inquiry learners and problem solvers. Like abstract random learners, they also thrive in a busy environment.

### Teaching For Different Learning Styles

Teaching styles also seem to fit into the same distinct categories. Is it possible that the most successful learners in a given classroom happen to possess learning preferences that match the instructional preferences of teachers? This would be a logical conclusion. Since the goal of teaching is to help all students learn, teachers might be more effective if they adapted their teaching strategies to the learning styles of their students. The problem with this suggestion is apparent. Within any classroom are students with all four learning styles and with varying degrees of dominance. The solution lies in what Butler (1984) describes as Style Differentiated Instruction, or varying the learning activities for students to incorporate activities that will appeal to each of the learning styles. This is consistent with the research in effective teaching that suggests effective teachers incorporate variety into their lessons.

Learning activities especially suited for students with concrete sequential learning styles include the use of models or drawings, instruction sheets, illustrated lectures, workbooks or lab manuals, construction of projects, computer assisted instruction, and field trips. Abstract sequential learners find reading assignments, well-organized lectures, debates, and audiotapes especially effective. Small group discussions, audiovisual programs, short reading assignments followed by group activities, and assignments that permit time for reflection are most effective for abstract random learners. Concrete random learners benefit most from independent study projects, optional reading assignments, case studies, games and simulations, and activities that allow for trial-and-error.

Within almost any unit of instruction teachers should be able to develop learning activities for students with different learning styles. For example, when teaching a lesson on Marketing Agricultural Products the following activities could be utilized:

1. Read the textbook, pp. 154-160, and summarize the major concepts related to marketing decisions facing the

agricultural producer. (Abstract Sequential Learners)

2. Present a marketing situation to the class in the form of a case study. Use small group discussions to arrive at a consensus as to the best solution to the marketing problem. (Abstract Random Learners)
3. Provide a list of study questions and appropriate references on types of agricultural markets to the students. Use a supervised study technique to locate answers to the study questions. (Concrete Sequential Learners)
4. Assign a mini-paper on marketing strategies in agriculture. Students may develop a strategy for marketing any agricultural product. (Concrete Random Learners)

The advantage of using Style Differentiated Learning strategies is that each of the learning activities appeals especially to one of the groups of learners in the class. None of the activities suggested for the example lesson will match the preferred learning style of all of the students in the class, but each style of learning will be addressed before the lesson has been completed. By using this strategy, students will also have the opportunity to develop abilities in the non-dominant learning styles. Students with strong random learning styles may need to work on their sequential abilities, and those with abstract reasoning tendencies may profit from exposure to more concrete learning activities.

*Postscript: 15 years later.* Steven (who exhibited characteristics of both abstract sequential and concrete random learners) attended the land grant university in his state and earned an undergraduate and a graduate degree in agronomy. He graduated near the top of his class and is working in the research and development division of a major agricultural chemical company. Greg (definitely a concrete sequential learner) also attended the same land grant university and struggled through the agricultural engineering curriculum. He graduated in the lower third of his class and went to work for the same agricultural chemical company as a systems engineer. His mechanical talents were soon made obvious, and those talents along with his strong organizational skills led to a series of promotions. He is currently head of the division in which Steven works, and the two old friends get together often to talk over old times. Although both thoroughly enjoy these meetings, Greg probably enjoys them more.

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# A Ration For A Successful Agricultural Education Program

To qualify as a successful agricultural education program, your program must receive the National Chapter Gold Emblem Award, or receive two American Degrees per year, or five State Degrees per year, or place ten judging teams in the top ten in the state, or have the program taught by a teacher who has read *Dress For Success. Well, Maybe Not!*

Everyone identifies a successful program differently. What one person sees as an excellent program may be just an average program to someone else.

The following is my definition of a successful agricultural education program: **A program is successful when all avenues have been explored and realistic goals have been set and carried through by all persons involved with the program - including the students, teachers, administration, and community.**

There is one common tool the profession has to measure the success of an agricultural education program - the National Chapter Award application. This process effectively measures the FFA side of the program, however, it does not show a true picture of the total program. Some other tools that help broaden the picture are the American Degree, State Degrees, NVATA Outstanding Program Awards, and NVATA Outstanding Teacher Awards. These awards allow us to see how teachers measure up against the rest of the applicants, but the true measure of success must come from peers, students, and parents with whom the teacher works.

This article will attempt to develop a ration which identifies three major factors in building a successful program; the student, the administration and staff, and the teacher.

## The Student

What describes a successful agricultural education student? Does the student need to have a 4.0 GPA and score a 31 on the ACT test? Certainly not! A successful agricultural education student is the student who is willing to do a little more than average. This student will attempt to do things that might be termed risky by others. This student builds a strong supervised experience program (SEP), gets involved in contests and activities, and does the extra little things that make a difference. A teacher cannot always measure a student's success during his or her secondary years. Sometimes they will "fool" you! Occasionally, a student does not reveal all of his or her talents while in high school, but goes on to graduate from college and secure successful employment in industry. Sometimes it is difficult to measure the success of a student during the high school years; instead, the teacher must look at the student in a "real-life" setting.

How can a teacher nurture a student toward success? I say through **positive reinforcement!** Teachers must identify something positive in every student and reinforce that student's strengths and help them overcome their weaknesses.



BY SAMUEL G. CUSTER

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Teachers need to assist the student in setting future goals, whether it be involvement in agriculture or in some other field. Every student is an individual and must be dealt with on that basis.

A student from my first class has just gone through a complete cycle in the program. This student was labeled as a failure by a teacher in Jr. High. At that time she was immature and restless, but she showed some determination in my class, so I gave her the opportunity. This student worked hard as an FFA member, but had some setbacks along the way. She left out the third paragraph of the creed in the county contest. She submitted a bronze rated scrap book. She walked down the stage in the wrong direction in the State FFA Queen Contest. She was not selected as a National FFA Officer. However, she did graduate from college while working as an agri-broadcaster for a nationally known company. She was the editor for the magazine published by the Ohio State University's College of Agriculture. Today, she works as a communications specialist for a Fortune 500 company. We must help each student see an opportunity for success. Every student is an important ingredient in making the agricultural education program succeed.



1988-89 Versailles FFA Chapter officers — if you can convince the students that they are the best, they will perform that way.

## The Administration and Staff

The second ingredient for a successful agricultural education program is the administration and staff.

In the high school setting it is extremely important to receive the support and backing of the administration and of fellow teachers.

A means of receiving this support is to pass along the praise. For example, it is important to share the spotlight with the superintendent and/or principal when complimented on the success of your program. Most of the time the administration only receives criticism for what is going wrong and does not receive praise for what is going right.

It is important that agriculture teachers promote strong relations between fellow teachers. Agriculture teachers need to identify two or three other teachers each year to assist the program in some small way, and then reward them. It is important to realize that most other teachers do not have a means for receiving recognition for student success like agricultural educators. Reward them and allow them to become an important ingredient.



1989-90 Versailles FFA officers — if students are given opportunities they will respond. You must convince them they are worth the extra time and money.

## The Teacher

The final ingredient in my ration is the teacher. Agricultural education teachers come in all shapes and sizes (although most show good spring of lower rib), colors and backgrounds, and ages and gender.

However, there is one common denominator of all successful agricultural educators — they care.

A successful program requires a teacher who cares. The teacher needs to care about the well-being of the students. The teacher needs to care about the appearance of the program, the school as a whole, the profession, and about himself or herself, as a professional.

Identify a successful program in your area and you will find a teacher who is genuinely concerned about the well-being of the students. The teacher does more than teach



Freshman agriculture education students — ideal students in agricultural education are those who take an interest and do more than average students do.

agriculture; he or she serves as a role model, a parent, a counselor, and a friend.

Within this successful program, you will find a teacher who is sincerely concerned about the appearance of the program. The teacher takes it personally how his/her students appear, how they compete, and how they accept success and failure. The program is one of the most important parts of his or her life.

The successful program has a teacher who has respect for the total school - not just the agricultural education program. The agriculture teacher realizes the importance of the program, but is also aware of and respects the various other disciplines and people who make up the entire school system.

The teacher in a successful program realizes that if he/she does not support the profession there will be no profession in the future. The successful teacher must take part in ensuring the future of agricultural education. During these changing times it is easy to sit back and watch change take place. Agricultural educators need to jump in and become a part of change. Those who sit back and observe will most likely watch their program fizzle.

## Summary

To have a successful agricultural education program, it takes a teacher committed to the program. It takes administrators and staff who feel they are part of the team. And finally, it takes students who are given the opportunity to succeed.

A successful agricultural education program can easily be summed up with this ration:

- 1 part student with opportunities and goals.
- 1 part administration and staff who are involved.
- 1 part teacher who cares.

# Cooperative Learning As A Teaching Strategy

Take a moment and picture the perfect learning situation. Students are eagerly engaged in the lesson. Throughout the class period a high level of interest is being generated from all students. Students are working together to solve problems. The students know what is expected from them and they are working hard to complete the objectives. The teacher has planned the lesson well. Consequently, the students need only minimal guidance throughout the learning activities.

Sounds too perfect! At the very least, this is the day you would like to have the principal observe class and complete an evaluation. This is not an unrealistic situation.

One of the most recent trends in education is the development of cooperative learning strategies for all grade levels and classrooms. Cooperative learning, however, is not new. Cooperative learning has been used in the United States since 1806 when it was used extensively with the Common School Movement. Others would recognize cooperative learning as part of the one room school where students benefited by teaching and by being taught by other students.

## What's New?

What makes this approach to teaching new, different, and usable by agricultural educators? Recently a great amount of effort has been used to develop cooperative learning/teaching strategies that will work in any classroom or laboratory. These new strategies come at a particularly good time because many agricultural teachers have shown interest in changing the thrusts of traditional programs and the methods they use to teach students.



Students are working together in cooperative learning groups to gain agricultural experience. (Photo courtesy of Thomas Bruening.)



BY THOMAS BRUENING

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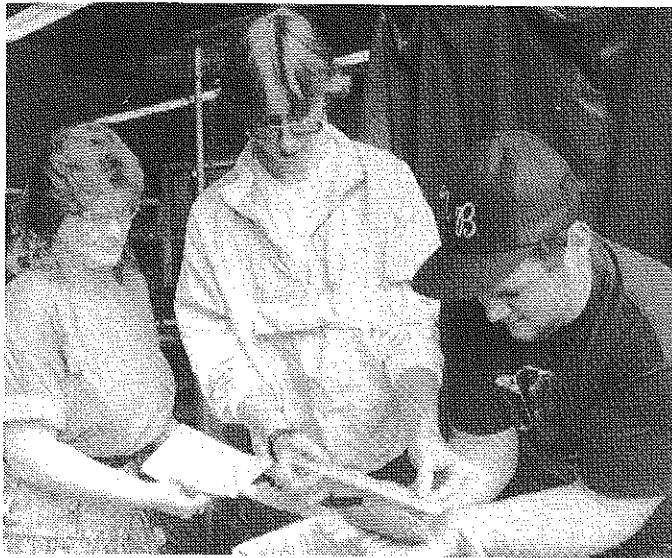
The premise of cooperative learning is much different from just putting students in groups and expecting wonderful results. Johnson and Johnson (1987) of the University of Minnesota have done much of the recent work in cooperative learning. They indicate that there are five elements which must be included in small group learning for it to be truly cooperative learning.

## Positive Interdependence

The first element in cooperative learning is **positive interdependence**. In order to reach positive interdependence, students must perceive that they will sink or swim together. One way this may be achieved is through the development of mutual student goals. In order for students to develop goals they must understand how to share resources and information. Students who can "see" the value of being dependent upon others will easily buy into this process. This positive relationship fosters the "we" mentality among students. Traditionally, we have fostered this attitude in many of our successful FFA endeavors. However, it is necessary to use this approach with students in classroom and laboratory settings to promote group tasks with a feeling of mutuality. For example, if the group task is to investigate, write, and give a report about marketing, the students should receive a group grade for the work. Students should be assigned differing roles and resources within the group. This strategy helps students take on responsibilities in group settings and forces them to allocate available resources to complete the assigned tasks.

Increased self-worth can also be achieved through this type of group interaction. Whereas low achievers will strive to do their best for the benefit of the entire group, high achievers will assist others in accomplishing the group task. Through this approach, heterogeneous groups learn to trust and depend upon the value of other students. Thus students will learn to emulate conditions found in real world settings. It is highly unlikely that students will ever be placed into the equivalent of "leveled reading groups" in the workplace.





Positive interdependence is established between students when each student assumes responsibilities within the group. (Photo courtesy of Thomas Bruening.)

### Face-to-Face Interaction

Face-to-face student interaction is a critical element in the cooperative learning strategy. Interaction of students in a school setting can be an activity where students explain to each other and not just to the teacher how problems are solved. By engaging in this type of activity, students can help each other understand how tasks are completed. To further explain how this might work, let's use an agricultural marketing example.

Futures trading of commodities can be a difficult concept for students to comprehend. Traditionally we have only looked at marketing from the producer's perspective. With the many occupations involved with marketing, it would be valuable for students to experience all marketing roles. Students in the cooperative learning group could be assigned to practice selling a commodity with input from all students. Working through a specific simulation, students would identify specific marketing roles. Through this process controversy will be promoted and students will in turn be more deeply engaged in the lesson. The ultimate benefits include peers checking each other for understanding and clarification as well as gaining better communications skills.

Employers consistently indicate that communications skills are important assets of employees. Therefore, giving students the opportunity to practice and experience communications in working conditions is valuable for these students and our agricultural education programs.

### Individual Accountability

Individual student grades mean accountability. Group work and the lack of methods to determine individual accountability have always been a problem with this activity. New strategies have been developed in cooperative learning that suggest we now have ways of dealing with this problem more effectively.

A question that often arises concerning cooperative learning is what to do with the student who does not participate,

who allows others to do most of the work, or who fails to learn the required material. To keep this from happening teachers can average individual scores for a group grade. Thus, when one student's score will lower the group's average, the high achieving students will pressure the other student to improve his/her score to raise the group's average. On a more positive note, students can be shown how to work with each individual in order to master the subject matter. Students can use cooperative learning and criterion-referenced grading systems. In this grading scheme, individual scores can be based upon bonus points when all members of the group reach the established criterion. In this example, if all members of the group reach the criterion score, then each student receives a bonus. If you were giving a 100-point marketing test (see Figure A), the four team members would earn a five-point bonus for maintaining their collective grades above an 80% average. This strategy promotes peer encouragement and teaching among group members so that all may benefit from group performance. This is the same strategy being utilized by highly successful Japanese industrial groups to promote team effort, positive attitudes, and ultimately an excellent product.

#### Criteria for Bonus Points

80 - 89 = 5 bonus points  
 90 - 99 = 10 bonus points  
 100 = 15 bonus points

	Individual Score	Total Score
Everet	80	85
Suzanne	93	98
Meredith	87	92
Chris	95	100
Average	88.75	

Figure A: Cooperative Learning Scoring Example

Psychologists have always known that learning is an individual activity and that one person cannot learn for another person. This does not mean, however, that an individual can't have a dramatic positive or negative effect upon the influence of others to learn. Peer pressure from inside the group structure can play a key role in the interest students have to participate and learn.

The opposite of cooperative learning is competitive learning. The premise of competitive learning is that a student will only succeed if the competition fails. The typical bell-shaped curve is the best example. If students are convinced they are average, they will never work beyond a mediocre level that the teacher expects.

Getting students to stretch and grow using evaluation, while at the same time providing individual accountability, is possible with competitive learning. One of the more innovative strategies used by teachers employing cooperative learning is a team score with individual improvement points. Through this process students contribute to the team effort while earning individual improvement points.

## Social Skills

Obviously all students do not come to school with positive social skills. Likewise many students need to be taught social skills to participate successfully in society. Therefore, teachers need to take responsibility to help students learn these skills. When the responsibility for learning is a group function, as with cooperative learning, conflicts among and between individuals will occur. Then the teacher's role is to step in and suggest conflict resolution strategies. Thus cooperative learning provides a vehicle for teaching and learning social skills.

Agricultural education teachers are known to be effective in developing lessons involving problem solving activities related to agricultural business applications. However, problem solving can also be used to help develop students' social skills. Application of learning strategies to develop small group communication skills is akin to killing two birds with one stone. For example, reflect upon cooperative groups determining the pros and cons of using agricultural chemicals. Through this process students learn more about the environmental issues as well as how to discuss these issues.

Team building is an important social element that will result from well-planned activities. Giving each group the authority to develop a team name helps win skeptics and promotes the group's identity. Additional activities include the use of roundtable discussions where all of the students within a group are asked to contribute ideas. Possible examples for individual groups include (1) brainstorming management practices for lawn care, (2) troubleshooting small gas engines, or (3) developing a marketing approach for a bedding plant project. The process of developing a team identity begins with a unifying cause for the students.

## Group Processing

Students must be taught how to evaluate their behavior and that of their peers. This is not an inherited trait. Planned observations by teachers and students should be made in order for groups to become stronger. Frequently this is the most difficult task for students to perform. While they are easily critical of each other, it is difficult for them to provide constructive criticism of their peers in such a way that the criticism is valued by the student being cited. Again this attribute is worth the time needed to build it. In the past

many teachers have readily used group processing to evaluate leadership activities. Banquets, contests, and fairs provide excellent opportunities for teachers to have students participate in group processing.

Cooperative learning could provide an excellent means of getting students working together experiencing agriculture. Students like to work in groups. Using the experimental project concept, students working in cooperative groups can develop greater understandings through the process of ideas and information.

## What Does It All Mean?

In order for cooperative learning to be successful, teachers must selectively design the student learning activities and closely monitor the group process in action. Structuring cooperative learning means more teacher planning, not less. By planning more, teachers will have the flexibility to be more attentive to students' needs in the learning process. Students will be more actively involved in the lesson, therefore, they will be doing more of the actual work. This is definitely a student-centered approach to education. Teachers should attend workshops and seminars so that they can incorporate this strategy slowly into their repertoire of teaching methods. Cooperative learning can be a valuable tool used by agricultural educators. However, individual instruction and competitive learning should also continue to play a vital role in the total educational strategy. Learn more about this strategy by reading the articles and books cited in the references.

Why should you try cooperative learning? Research by Johnson and Johnson (1987) and others indicate that academic achievement of secondary students who participated in cooperative learning improved their scores. Most studies indicate that group goals and individual accountability are the two elements within cooperative learning which contribute to student growth. Cooperative learning is another valuable tool which teachers can use to promote a higher level of student learning and achievement.

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# Agricultural Education At the Middle School

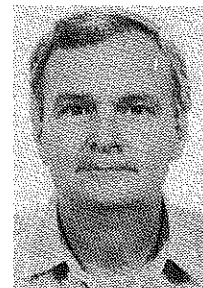
High School Vocational Agriculture has been one of the greatest success stories in education during this century. This success has, to a large degree, been the result of the multi-delivery approach to learning traditionally used by the teachers. Since the inception of agricultural instruction in the public schools, experiential education has been the foundation of the instructional program. Success with SOEP, laboratory exercises, and hands-on application of skills and leadership activities in the FFA have made the programs strong from the grass roots level to the national level. As times change, educators are devising new means of using these avenues to deliver instruction in agriculture and to better meet the needs of modern students. Demographics of those enrolled in the program have changed dramatically over the course of a few short years. In addition, the mode of delivery has changed. The introduction of the semester system in most areas is replacing the traditional four year program of study. Vocational Agriculture (Agricultural Education) has almost always meant high school programs (grades 9-12). In recent years the trend has been to expand the program to include the middle school (grades 6-8).

In Georgia, middle school programs are designed as an introduction to rather than an in-depth study of the agricultural discipline. These programs offer several benefits. A properly conducted program can be an asset to the secondary program in the area of recruitment. Not only is the agricultural literacy level of the students increased, but also the agricultural awareness of the community is expanded. Although there are many similarities in the secondary and middle school programs, the exploratory programs are different in several respects and present unique challenges:

(1) **The clientele are different.** High school agricultural education programs have almost always been elective courses, so most of the students enrolled in the programs have an interest in agriculture and want to be in the classes. The middle school programs are different in that they are usually mandatory and the students don't have a choice in the selection. This means that sometimes students are enrolled who not only have no interest in learning about agriculture, but may actually have a negative conception of agriculture. The challenge to the instructor is to turn this disadvantage into an advantage. The key is to use teaching strategies that will not only gain and hold student attention but also change their attitude about agriculture.

(2) **Middle school programs often have limited facilities.** Since the intent of the program is exploratory, laboratories may be limited or non-existent. This calls for innovation on the part of the teacher to provide experiences for the students without the use of extensive facilities and equipment.

(3) **Courses are for a much shorter duration.** The typical



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length of an exploratory course is from six to eight weeks. This very much limits a teacher to the number of units possible to teach in that time period. A teacher must then become more selective in the units taught and in the teaching strategies used.

(4) **Middle school programs don't enjoy the amount of available teaching materials such as curriculum guides and textbooks.** Since the programs are relatively new, texts and teaching materials are limited, so the teacher must adapt more material to his/her situation.

The exploratory agriculture program at Putnam County Middle School at Eatonton, Georgia is a good example of the type program under discussion. Eatonton, Georgia is a small town located in the Piedmont region of Georgia. The program is less than a year old and is designed as an exploratory course in agriculture. Sixth, seventh and eighth graders are enrolled in the course for a six-week period. The objective of the program is to introduce students to the "world" of agriculture. For those students wishing to continue their education in agriculture, the program at Putnam County High School offers the opportunity. The same basic principles used in teaching high school agriculture are used. As in any good agricultural education program, the basics are first learned in the classroom and then carried through to application in a laboratory setting. Principles of plant growth, animal production and soil science are touched upon during the six weeks the students are in the course. Even with limited lab space the students are taken through experiential education. The challenge has been to plan and implement activities that appeal to the students, are within their capabilities, and can be done using limited facilities. The program enjoys solid administrative support, but is so new that facilities for the program have not yet been fully developed.

Learning activities are planned for each unit. For example, elementary landscaping was done in conjunction with an ornamental horticulture unit. The students planted flower seeds in pots and grew the plants in the classroom. They were then transplanted into beds around the school to enhance the appearance of the campus. For the first time the students actually grew something themselves! The learning that took place in the classroom was greatly enhanced by the hands-on activity. At the culmination of a unit on natural resource management, the students built birdhouses using simple handtools. Concepts of self confidence and pride in workmanship were learned. As in large projects of this nature, the students learned that they could complete a project and take pride in the fact that they did it themselves. Parents became more aware of the activities of the program when the students carried their birdhouses home.



Simple hand tools are used to build houses at the completion of a unit on Natural Resources. Such activities teach self-confidence and pride in workmanship.

The exercise that created the most activity came during the teaching of plant growth and soil type. Four tomato plants of the same height were potted in four pots using four different types of soil. One was potted in an organic soil, one in a loam soil, one in a clay soil and the other in sand. Students were then involved in a variety of learning activities using the plants. For instance, in an introductory soils unit, the students were taught the concepts of soil texture and water retention. The old demonstration of the settling jar was used in the classroom to demonstrate soil particle size as the various size particles settled to the bottom in separate strata. As a laboratory activity, the students used the tomato plants potted in the different soil types to conduct tests in water retention. A cup of water was poured one at a time, into each pot. The time taken for the water in each pot to reach the bottom was noted. Inferences were then drawn from the rate at which water was absorbed into the soil.

In a problem-solving session the students drew conclusions such as which soil would have the most problems with

erosion and which would dry out first. The key to making the activity a success was that the students themselves were involved. The students poured the water and timed and recorded the filtration rate. Periodically the plants were measured for growth and the measurements were recorded. Since the plants had all been given the same type and quantity of fertilizers, conclusions were drawn as to the effects of soil type and fertilizer availability. Besides the obvious lessons in technical aspects of agriculture, other lessons could be learned as well. The scientific method and problem-solving were outgrowths of the activity. A follow-up to the lesson was the identification of the various soil types around the students' homes.

Simple activities such as these provide many advantages. First, the attention of the students was increased. Their involvement in the potting of the plants, pouring of the water, timing of the percolation, and recording of the results gained and kept their attention like few other approaches could. Second, learning is better retained through a hands-on approach. This concept has always been imbedded in the philosophy of agricultural educators and research has shown quite clearly that the concept is sound. Third, those students who have misconceptions of what agriculture is all about can begin to see the application of scientific principles. As mentioned earlier, the main objective of most middle school programs in agriculture is exploratory and the central focus of the courses should be to pique the student's interest in agriculture. To do this, preconceptions must often be dispelled. The application of scientific methods and principles give these young students a different perspective of agriculture than what they might have expected.



Young students take pride in growing and transplanting flowers around the school campus. For many of them, it is the first time they have ever grown anything.

*(Continued on page 22)*



# International Agriculture

## Applied Research: Lessons From The Third World

Research shows that agricultural producers can more readily accept new technology when they can see the benefits and participate in the demonstration of new technology. One of the responsibilities of agricultural educators is to take research findings to farmers and others so that they can improve the quality of their lives. Effective agricultural education teamwork with local farmers through field demonstrations convince those who may otherwise doubt that certain practices can be done. Field demonstrations permit teaching of theory along with practice and present subject matter in a way that can be understood easily to screen out irrelevant practices and to utilize that which is beneficial for increase in food production.

### Protein and Growth Rate

A lack of protein is frequently a limiting factor in animal diets. Grains and their by-products are deficient in both quantity and quality of protein for farm animals. Since protein sources are expensive feeds, most farmers in developing nations do not feed protein feeds. If they do, the protein is usually not in the right proportion. Higher growth rates and more feed efficiency are reported for rations with balanced proportions of protein.

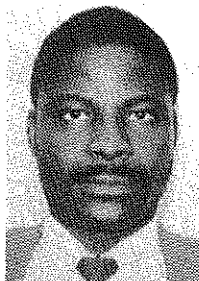
Broilers have become a significant source of animal protein in the diet of many people of the world. Chicken meat is one of the cheapest sources of protein in many parts of the world. The superiority of chicken meat to all domestic animals in respect to protein is due to the very low fat content of the muscle. Fast growing chickens require less time to reach market weight, reducing the cost of keeping the flock. Broilers are the quickest source of income among all farm animals. Despite these impressive advantages, broiler production in many developing nations is, to a great extent, still dependent on traditional management and nutrition programs. There is a great need to increase and improve broiler production. The objectives of this project were to teach improved management and production practices for broiler chickens through the demonstration method and to demonstrate the effects of different protein sources on broiler growth rate.

### Procedures

The materials used in the demonstration were:

1. Heat lamp
2. Wood shavings
3. Disinfectants
4. Sixty day-old chicks
5. Waterer
6. Feeder
7. Cardboard
8. Iodine

The chickens were divided into two groups. Group A was fed a diet with soybean meal as the major protein source



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and Group B was fed a diet with cottonseed meal as the major protein source. Feed samples from the two diets were sent to a laboratory for chemical analysis. Table 1 shows the chemical analysis of both diets in terms of percent of nitrogen, calcium, and phosphorus.

Table 1  
Results of Chemical Analysis of Diets 1 and 2  
for Nitrogen, Calcium, and Phosphorus

Diet Number	Percent Nitrogen	Percent Calcium	Percent Phosphorus
1-Soybean meal	3.46	.73	.73
2-Cottonseed meal	3.16	.64	.38

The pens were swept, washed, disinfected, and allowed to dry. Wood shavings were spread on the floor of the pens about an inch thick. Heat lamps were placed and turned on. The chicks were kept under heat lamps surrounded by cardboard to keep them warm. Chicks were fed every day and waterers were washed daily. The chicks were observed every day. The chicks were weighed weekly; chicks were starved for eight hours to clear their gastro-intestinal tracts for the weekly weighings. The chicks were wing banded for identification purposes and iodine was applied as they were tagged to avoid infection. As the chicks grew, the feeders and waterers were raised to avoid waste of feed and to keep the water clean.

### Results

At the end of eight weeks, the birds in Group A had consumed 132.4 kg of Diet #1 (with soybean meal as the protein source) at a cost of \$.74/bird while the birds in Group B consumed 44.5 kg of Diet #2 (with cottonseed meal as the protein source) at a cost of \$.48/bird. Diet #1 cost \$.21 kg and Diet #2 cost \$.20/kg.

The birds in Group A were almost double the size of birds in Group B at the end of the project. The largest bird in Group B weighed 1160 gm which was smaller than any one

(Continued on page 23)

# Making Learning A Team Effort

Imagine that you are at a football game. It is late in the game. Your team has the ball on the 17 yard line and is driving for the touchdown needed to win. It is third and four as the quarterback brings his offensive team to the line of scrimmage. The quarterback calls the signals, the snap, he hands off to the fullback who muscled his way through a hole off tackle, cuts to the outside and is finally brought down on the three yard line. Two plays later your team scores the winning touchdown.

What did it take to score that touchdown? A great deal of teamwork. Each player on the offensive team had to know their assignment for the particular play called. They had to know the snap count. Each player had to properly execute his assignment at the exact proper time. The offensive team relied on each other for their success - teamwork.

Suppose we look at a business, an implement dealership. The owner of that business has to rely on many people for its success. He/she cannot do everything alone. The owner relies on the manager, accountants, sales people, parts people, mechanics, custodians, and others to do their job in helping make the business a success. That again is teamwork.

We can examine many examples in the life around us that exemplifies the need for teamwork. Yet in most classrooms we see teachers requiring their students to work independently without any talking to their classmates. Why not emphasize teamwork dedicated to the enhancement of learning in our classrooms more often? This teamwork is called cooperative learning.

## Benefits

Although cooperative learning has been used to some extent for many years, it has only been recently that the method has been examined and emphasized in terms of its value to the teaching/learning process. Slavin (1988) indicated that there is now evidence that students working together in small cooperative groups can master material presented by the teacher better than students working on their own.

Johnson and Johnson reported that, "Cooperative learning experiences, compared with competitive and individualistic ones, promote higher achievement, greater motivation, more positive interpersonal relations among students, more positive attitudes toward the subject area and teacher, greater self-esteem and psychological health, more accurate perspective taking, and greater social skills" (1989, pp. 178-179).

The benefits reported are what we are striving for as teachers. Not only do students attain a higher level of achievement, but they gain other skills so important in life.

## Types of Cooperative Learning

We have been using small groups and some forms of cooperative groups in local agricultural education programs

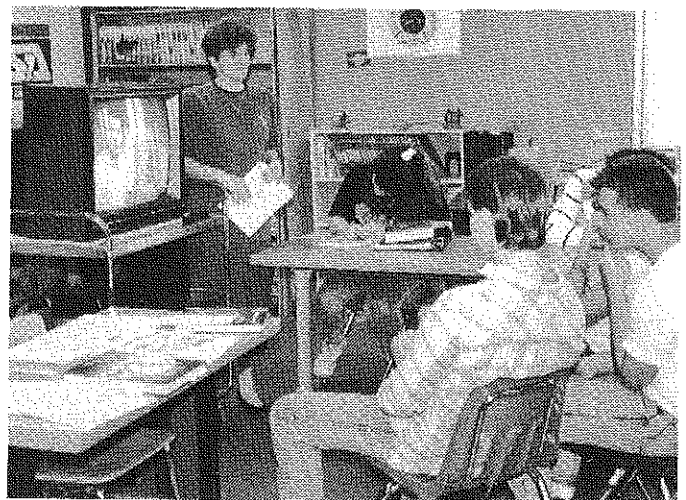


BY VERNON D. LUFT

*(Dr. Luft is Professor and Occupational Teacher Educator, Department of Curriculum and Instruction, University of Nevada-Reno.)*

for a long time, sometimes without being fully aware of the method being used. Cooperative learning groups are somewhat different than other small groups in the way they are structured and the expected outcomes.

The literature reports various names for the various types of cooperative learning groups. The four groups I am going to discuss include: jigsaw learning, group projects, information resource groups, and study teams. One characteristic inherent in any cooperative learning group is that the group members must be heterogeneous in their ability, motivation, and other factors deemed important.



Audio visuals assist with clarity as electricity is discussed by Ms. Varner-Friddle at University High School.

## Jigsaw Learning

This group is an approach that requires students to depend on each other to acquire important information. The steps of the process are: First, divide students into three to five member groups. Each member is given a different segment of the same article, handout, or text. Student A in each group is given part one to read, Student B is given part two, etc. A brief time is allowed for silent reading of the material.

The next step is to allow 10 to 15 minutes where all class members who have read the same segment meet to review

their material, identify critical points, and prepare presentations for their original group. Student A in each group will get together to discuss part one, Student B in each group will discuss part two, etc. During this step, it is important that everyone thoroughly understands their respective material.

The jigsaw process is completed when each member of the group presents his/her segment to the other members of their original group. Each group member will have the complete package of information at the end of the activity. The activity may be concluded with a class discussion regarding the article, handout, or text material. This allows the teacher to check for understanding and to respond to any questions.

Who says we have to lecture or have class recitation in order for students to acquire new information? The jigsaw learning approach requires students to be responsible for the new material in a team effort.

### Group Projects

Group projects of various sorts are familiar to many agriculture instructors. We've used group projects in classes, agricultural mechanics, horticulture labs, and other instructional settings. If a group project cooperative learning method were used for an assignment such as a research or term paper, it would function as follows. Students are grouped into long term "topic teams" in which they choose their own topics to research over a quarter or semester. Students write individual papers and give both individual and team presentations. Students work in teams to engage in a great deal of discussion, sharing of materials, and planning their papers and presentations.

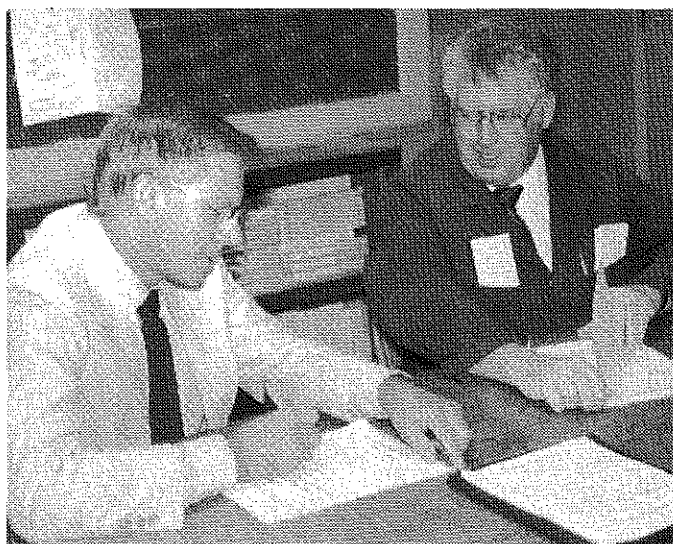
Student editing is encouraged as part of this method. Before papers are due, students are encouraged to edit each other's work to reduce the number of errors. In fact, an incentive may be awarded in the form of bonus points if their papers, taken collectively, have less than a predetermined number of errors.

### Informal Resource Groups

An informal resource group can be used to stimulate discussion to learning. During a class, the instructor might divide the students into small groups of two or three to review a critical point, check their understanding of a concept, or discuss how a practice might be applied. This impromptu cooperative learning activity changes the focus of learning from the teacher to the students. It often generates important questions that need to be discussed and reveals processes that students do not understand or concepts that need further clarification.

### Study Teams

The purpose of this group is to help students prepare for tests. Study teams are organized a week or two before an exam. Students might be placed into teams of three or four making sure they are heterogeneously grouped. Each student is assigned a portion of the material to be covered on the exam. If study guides are used, each may be assigned a portion of the guide. Students are encouraged to help each other during study sessions in or out of school. As an incentive to promote cooperation and higher achievement,



Dr. Layle Lawrence performs program evaluation with Mr. Robert Beach at Clay-Battelle High School.

students may be offered the opportunity to earn bonus points if the average score of their team reaches a predetermined standard (ie. 85%).

### Summary

The benefits gained from using cooperative learning, particularly gains in achievement and life skills, warrant serious consideration of their use. I've used cooperative methods more frequently in my university teacher education classes and found that students do learn from each other and enjoy the process more than most traditional instructional methods .

The cooperative learning methods discussed can be adapted to many class activities in agriculture. If many accomplishments in life are completed using a team approach, why not make learning in the classroom and lab a team effort?

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### About the Cover

Mr. Mark Hostuttler, Hundred High School, provides students with information and feedback about the importance of facial expressions while interviewing for a job. Mr. Hostuttler's cooperating teacher during student teaching at Hundred High School was Mr. Virgil Wilkins.

# Teacher Behavior: The Key To Classroom Management

I grew up on a small, diversified farm near a rural community in southeastern Idaho. My parents were of European descent, my father being a German immigrant and my mother's parents coming from Sweden. Our family life was based around structure and discipline — the result, I am sure, of the "old country philosophy." The first four years of my education took place in a rural four-room school. During the first three years of my grade school experience, my behavior as a student was probably not exemplary but certainly acceptable. Then came the fourth grade and Mrs. Christensen. Mrs. Christensen was a nice, concerned and caring person. However, a friend and I made her year one of constant misery. We were "hellions," "ringleaders," "attention seekers," the "class clowns." We delighted in getting the "best" of Mrs. Christensen.

Now some questions: Why did it happen? How could a generally good kid become such a "bad boy" or behavior problem during the summer between the third and fourth grade? It was not as though I did not know the difference between good and bad behavior. I did know the difference and I was often chastised for inappropriate behavior by my father, who was indeed a stern disciplinarian. Why did it happen? Why did I act the way I did? The answer lies in the simple fact that Mrs. Christensen allowed me to act in such a manner. She allowed me to become a behavior problem.

What is classroom management and what is discipline? Why is it that some teachers never have a problem with student behavior and for others student misbehavior is their downfall? What is it that "good" or "best" teachers consistently do in effectively managing their students? Discipline has been defined as presentation of order and maintenance of control. Another definition of discipline is training to act in accordance with established rules. Classroom management, on the other hand, is defined by Orlich et al (1990) as a "humanistic orientation to the classroom environment." (p. 362) A college professor of mine described classroom management as those strategies and techniques used to maintain the environment and discipline as the application of the rules after classroom management strategies break down. Regardless of your definition, the bottom line is that classroom management and discipline are for many teachers, especially student teachers and beginning teachers, a major problem. By the time a student has completed a K-12 education and a teacher preparatory program, he/she will have directly observed more than 13,000 hours of teaching. Yet when students accept their first teaching assignment and step into the classroom, they are often unable to cope. (Ryan, 1982)

What is it that good teachers consistently do? After spending many hours observing high quality student teachers and beginning teachers, six characteristics or behaviors emerge.



BY JOHN P. MUNDT

(Dr. Mundt is Assistant Professor, Agricultural and Extension Education, University of Idaho.)

## Organization, Planning and Preparation

Teachers who have minimum classroom management and discipline problems have their lessons planned in advance. Class presentations and discussions allow for spontaneity but always remain focused on the objectives and purpose of the lesson. Lesson objectives are clearly defined and communicated to the students. There is appropriate rigor in the curriculum and assigned tasks. Teachers' expectations are defined and students are held accountable. The teacher will often make statements like, "Students, this is what I expect from you regarding today's lesson." Explicit and precise communication is what keeps students focused and on task. Expected student classroom behavior is clearly and precisely defined and taught. Examples of appropriate and inappropriate behavior are often provided to the students.

The rules and consequences are well taught, planned in advance and are in harmony with what is expected in the school building. Routine activities and tasks such as taking attendance and other housekeeping procedures are smooth and increase students' time on task. There are a few broad rules, and the rules are appropriate. Generally, the bigger the rule book the more problems the teacher creates. To summarize: "What a teacher plans for, and what a teacher expects, is what he/she gets."

## Communication

Good teachers speak clearly and explicitly. They recognize that their voice is a tool and that they must vary the tone and loudness of their voice. A major component of good communication is good listening. A good teacher listens and hears what is going on around him/her. A sense of humor is maintained and the teacher is able to laugh at himself, and with the students. Communication expresses itself in non-verbal cues as well. Good teachers exhibit a positive stance and posture. They dress professionally and exhibit confidence and maturity. If a student perceives the teacher at the very beginning as a confident and mature person, then half of the battle is won. The old adage, "You never get a second chance to make a good first impression," holds true.



## Power

Good teachers recognize that they have tremendous power. They have power by the virtue of their position and they use it. But power must be used wisely and not abused. The abusive use of power will create revenge and lack of trust among students. Students know when they have done something wrong and they expect the teacher to respond with appropriate disciplinary action. Beginning teachers often fear that students will not "like" them when they use their power. Good teachers recognize that the wise use of power brings about student respect for the teacher and each other. Student respect for the teacher is absolutely essential in order to maintain a positive learning environment.

## Classroom Norms

According to Orlich et al (1990), a norm is usually defined as a behavioral rule accepted to some degree by most members of the group. (p. 362) Students will feel an obligation to adhere to the rules which provide stability to their classroom. How many times have you heard students in your classroom admonish and police each other when the environment is not conducive to learning? A good teacher recognizes, fosters and nurtures appropriate classroom norms.

## Awareness

A good teacher is aware of what is going on around him/her. They are observant and know what all students are doing in their class at all times. Often times it appears to me that many teachers are oblivious to what is going on around them, or they choose to ignore inappropriate student behavior. They allow much disorder to go unnoticed as if it would go away by itself if not acknowledged. The best teachers notice when students are not on task. They know that two students' sudden interest in a three-ring notebook is because in between its covers is hidden a magazine. A teacher must be aware of and constantly observant and then deal quickly with inappropriate behavior.

## Consistent Behavior

A good teacher is consistent in his/her behavior and actions. A good teacher fairly interprets and applies the rules. A good teacher is consistent and fair in grading student

work. Teachers who have few problems with classroom management are consistent in what they expect from students both from the standpoint of classroom behavior and student achievement. The rule of **Firm, Fair and Friendly** applies across the board.

## Summary

Effective classroom management is vital to effective teaching and learning. Teachers must exhibit those behaviors which provide a stable and positive learning environment. Most beginning teachers express that if they had it to do over again they would have been much more strict from the first day of school. Recent studies of first-year teachers emphasize the importance of clearly establishing and communicating the rules and expectations at the beginning of the school year. We want teachers to consistently make statements like Mundt (1989) found in his study of first teachers:

I had no discipline problems and I attribute this to the strong discipline policy in the school, and the fact that on the first day I clearly explained to the students what I expected.

By explaining the above qualities with students, the potential for teacher success is enhanced, and that which a student derives from each hour spent in school will be major keys to his/her future success in life. These are the keys that we as educators have been entrusted to pass on to our students.

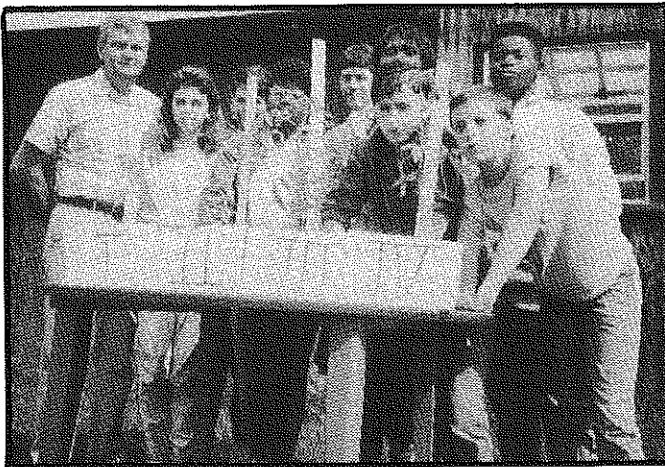
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# Agricultural Education At The Middle School

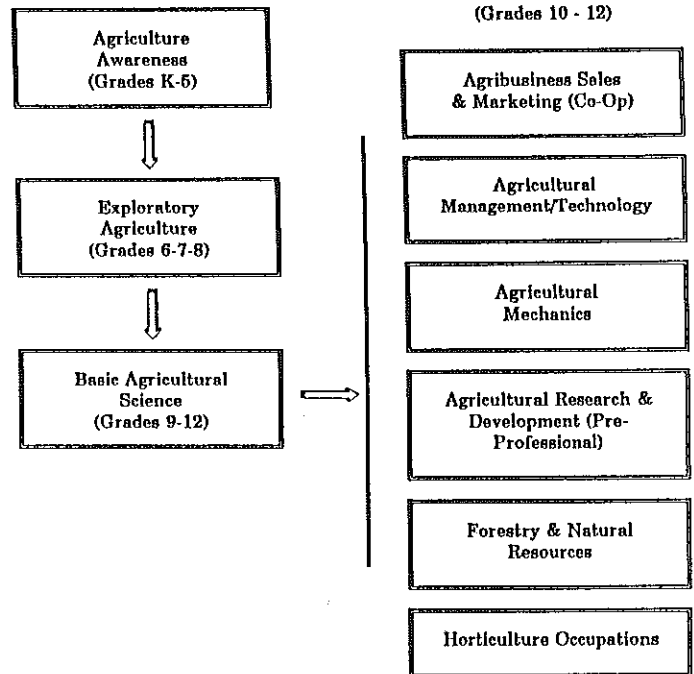
(Continued from page 16)

These techniques are by no means new. They have been used by agriculture teachers for decades. They are simply revised to fit the new situation of younger learners with a different background who will be in the program for a short time. The key principles are the same as with high school programs: involve the students! Let them be involved in activities that will keep and hold their attention. The strength of our programs has always been flexibility and adaptation. With these tools the middle school programs will grow and prosper.



Several demonstrations and hands-on activities can be achieved using potted tomato plants. The plants require very little space to grow.

## Model for The Agricultural Education Program in Georgia's Public Schools



Middle school programs in Georgia are aimed at exploring the world of agriculture.

# Effective Communication In Agriculture

(Continued from page 4)

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## "YOU" Are The One

(Continued from page 7)

I entitled this articles "YOU" ARE THE ONE and I truly believe that you are the one that will make the difference.

You are the one who has to decide  
Whether you will teach or toss it aside.  
You are the one to make up your mind  
Whether you will lead or linger behind,  
Whether you will try for goals that are afar,  
Or be content to stay where you are.  
Take it or leave it, there's something to do.  
Just think it over, it's all up to you.

I hope this article helps you in some way to be an even better ag teacher. When someone asks me who made agricultural education the best this country has ever had, I will know "YOU" ARE THE ONE.



William Woody (left) and co-teacher Dennis Mann prepare for a busy afternoon working with students and FFA members in the thirty minute enrichment class at the end of each day. "We believe we improve agriculture by teaching."

## International Agriculture Applied Research: Lessons From the Third World

(Continued from page 17)

of the normal birds in Group A. Group B birds were not marketable at the end of the 8th week. The net return for Group A birds was \$6.62 compared to \$0.59 for Group B. The mortality rates were 12.5% and 5% in Groups A and B, respectively.

### Conclusions

The data shows that Diet #1 is more economical and profitable; soybean meal is a good protein supplement for

broiler chickens. The described benefits of Diet #1 have universal application. However, the economic results may vary dramatically since availability and cost of soybean meal varies among countries.

It is not enough to solve an agricultural problem, but more important is how to get the people to practice the result. The message of agricultural education should focus on selected demonstrator farmers who will assist in spreading the improved practices to other farmers.

This demonstration could be performed in a formal classroom setting with high school agricultural education students. Students should be encouraged to experiment with different protein sources and to hypothesize which protein sources are more economical and profitable.

## Computer Technology Resources Database Managers : Functions For Today

(Continued from page 5)

tosh. "Stacks" have some advantage (music, graphics, animation) that set them apart from conventional DBM files, however, they use many of the same functions.

Developing DBM files either as a management tool or as an instructional aid can challenge our skills as computer users; however, the rewards will be paid back many times over in the ability to manage large amounts of information

efficiently. You may find the "User's Manual" sufficient to get you started creating and using DBM files. There are many supplemental guides to popular DBM programs as well as integrated packages that are packed with examples that should help expand your DBM skills. Good Luck . . .

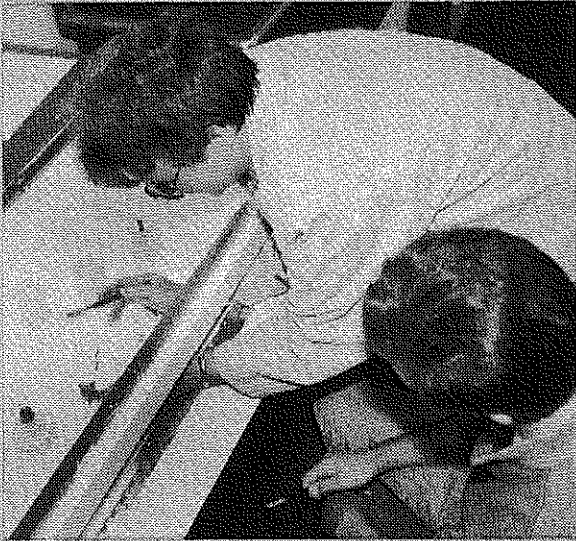
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# Stories in Pictures

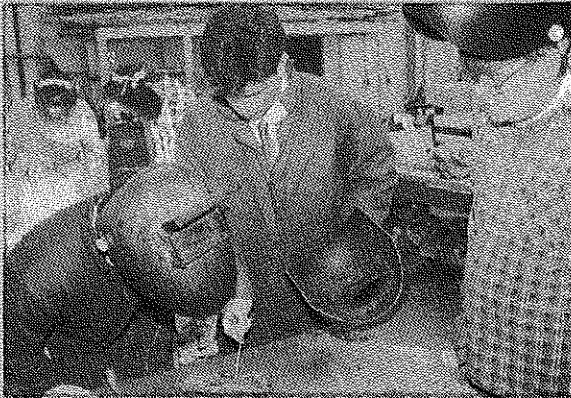
## Instructional Strategies



Ms. Lynn Lecher of Lincoln High provides one-on-one instruction on how to take cuttings for use in tissue culture.



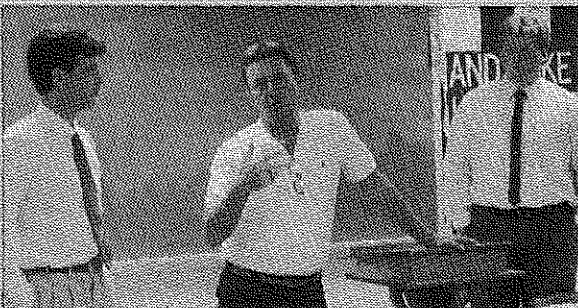
Mark Hostuttler, Hundred High School, utilizes small group instruction as an effective strategy in horticulture.



Providing students with feedback is essential in the teaching-learning process. Mr. Rui deMedeiros explains strengths and weaknesses of an arc weld to a beginning student.



Ms. Varner-Friddle uses the lecture/discussion technique effectively with her students at University High School. Audio visual equipment helps guide the learning process.



Mr. Virgil Wilkins and his student teachers employ the team-teaching strategy to add variation to the teaching-learning process.



Field trips and on-site hands-on training are still a valuable teaching strategy.

*(Photographs courtesy of Stacy Gartin, West Virginia University)*