THEME: Horticulture Programs
Can Vo-Ag Educators Speak Up?

Do vocationally-technical agricultural educators have strong feelings about their profession? If they do, are they allowed to speak? Freedom of speech is an important principle in the United States. Two aspects of freedom of speech are relevant to our profession: expressing one's own personal beliefs and being true to the beliefs of others.

Speaking Out Is Healthy

Increasingly it appears that vocationally-technical agricultural educators are unwilling to or do not care to express themselves about their profession. The health of a profession is related to the literature and dialogue about it. Of course, all dialogue must be offered and received in good faith whether we agree with it or not. Substantive dialogue will certainly be beneficial in the profession.

The quality of the articles, letters, and other communications in vocational-technical agricultural education needs improvement. Only a small number of members of the profession currently participate in such dialogue. Dialogue must not just advocate the status quo, but serve in observation and adversary roles. Some controversy is beneficial. It helps to refine personal philosophies and causes us to search our innermost selves for what we really believe. Our profession needs more scholarly interest in our reason for existence and future directions. Except for a few isolated examples, there is a great lack of substantive dialogue about vocational-technical agricultural education.

Avenues for expressing opinions and experiences include professional meetings, journals, books, and pamphlets. An individual who does not use these means of expression is abdicating to those few individuals who do. Individuals who do not speak up on professional matters should not complain about the direction taken in the profession.

Stilling is Unhealthy

Dialogue by professionals is healthy. Substantive dialogue by scholars in the profession is essential. Attempts by members of the profession to stifle substantive dialogue are unfortunate. When such attempts occur, it is because those who are trying to stifle dialogue are insecure and protect the value of their personal vested interests. It is also said that those who attempt the stilling don’t have any better product to offer.

We need more people who are willing to listen to new ideas. We need to listen to those who question some of the practices in our profession. Not listening may ultimately result in our extinction. And we certainly don’t want our profession to become extinct.

Education in Horticulture: How Much Is Enough?

Horticulture education has grown to enroll a sizable proportion of students in secondary and postsecondary vocational-technical agricultural programs. Funds are being used to construct facilities and employ teachers. Students have been given various courses in order to enroll. Are the efforts in horticulture education needed and do they represent wise investments? It is time to assess where we are in horticultural education.

The Mission

The first consideration is the mission of instruction in agriculture. Most programs use vocational education funds and therefore need to be capable of demonstrating specific occupational competencies of less than the baccalaureate level for gainful employment in horticultural occupations. Some of the instruction appears to have little emphasis on employment needs. The instruction may be more avocational than vocational.

Horticulture instruction is a part of vocational-technical agricultural education. It is not a separate program. Many times it appears that horticulture teachers want to split away from the vocational-technical agricultural program. Evidence of this in some locations is found in their establishment of separate teacher organizations. Their failure to join the professional organizations in vocational education is noted in some locations. Their lack of interest in preparing students for participation in appropriate FFA activities is frequently observed.

Who is out of step is it the horticulture teachers or the other teachers in vocational-technical agricultural? In some cases the situation may be a product of the overall program not adjusting to the new locations within it. (Continued on Page 4)
Education in Horticulture: How Much is Enough?
(Continued from Page 3)

The Quality

Horticulture instruction needs to be efficiently provided. Adequate funding and facilities are essential. Well-trained, professional teachers are needed. Supervisors, administrators, and teacher educators need to understand the uniqueness of horticulture. Several areas are in need of attention.

Funding effects program quality. Good instruction can be provided on a meager budget and poor instruction can occur when a larger fund allocation is made. Should students construct instructional laboratory facilities? If the citizens (taxpayers) do not support horticulture education by providing facilities, do they really want such instruction in the schools? If the budget provides insufficient funding to buy supplies and plant materials, do the citizens want horticulture education? There are more questions than answers.

Teachers of horticulture need to be well qualified. They need professional preparation to teach horticulture. It is important to know how to plan and deliver instruction, develop personal skills, and provide supervised occupational experience. Instructional time needs to be efficiently used, even in long periods. (The writer suspects that there is a relationship between length of instructional time and efficiency of instruction. Inefficiency of instruction increases as the length of instructional time increases. Stated another way, short (1-hour) class periods are more efficiently used for learning than long (3-hour) class periods.)

The Quantity

How many individuals are needed with horticulture education? Instruction in horticulture should help students develop job skills. It also keeps them from enrolling in other classes which may lead to better jobs. Typically, beginning horticulture jobs are at the minimum wage level. Of course, employment is better than unemployment but how many students would have fared better if they had taken other careers?

Adding instruction in horticulture because of the glamour tendency is unwise. Such instruction is geared for students because students who are enrolled in it can help maintain the school grounds or provide flowers for school functions which is educationally unwise. Instruction must be based on employment opportunities and the competencies needed to be successful.

Keeping in Perspective

Instruction in horticulture is needed. An assessment of employment opportunities and needs is a prerequisite to relevancy. A proper balance must be maintained in all vocational-technical education in agriculture. Traditions must be altered to allow for new areas and to support their success. All areas of instruction must be based on helping individuals achieve gainful employment.

This Month

The theme for this issue of THE MAGAZINE is Horticulture Programs. Jan Henderson, previously a horticulture teacher in Ohio and now a graduate student at Mississippi State University, has obtained a variety of articles on providing education in horticulture. Her assistance as Theme Editor is appreciated.

The Cover

Horticulture instruction must include the efficient use of laboratories. The cover photograph shows North Hollywood, California, students involved in using their school's laboratory. (Photograph courtesy of Richard M. Hylton, California Polytechnic State University, Pomona, California.)

THEME

Essential Elements for Program Growth

If asked to name the requirements for plant growth, most of us would quickly list light, water, minerals, and growing media. These requirements may vary among specific crops, but each would generally be recognized as essential for plant growth. Could we just as quickly identify the requirements for the optimum growth of a vocational education program? What essential elements are needed to yield a quality program in horticulture?

Philosophical Roots

Providing students with opportunities to acquire occupational skills and competencies is one of the primary goals of vocational education. Upon program completion, individuals should be able to enter an occupation in their area of vocational training. Horticulture programs must continually strive to maintain the vocational aspect of instruction. Occupational skills associated with the horticulture industry should be a basic element of all horticulture programs. Vocational instruction that emphasizes the "hobby" or "creative" arts nature of horticulture is not appropriate in vocational education. Both student and instructor should recognize that one of the prime objectives of vocational horticulture instruction is to prepare individuals for entrance into or advancement in the horticulture industry.

Parts of the Program

Quality vocational horticulture programs can be developed and maintained by insisting that all program components contribute to occupational skill training. Classroom instruction should provide up-to-date technical information and utilize curriculum materials and references suitable for the intended program. High-quality, state-of-the-art equipment is necessary for horticulture students to include placement in a local garden center or ownership of a budding plant production project or landscape business. Vocational student organizations also have opportunities that promote occupational skills, such as horticulture judging contests and proficiency awards. The diversity of the total vocational program should help develop the occupational competencies needed for a career in the horticulture industry.

Additional Supports

Supplemental assistance from the community can directly benefit the vocational horticulture program. Utilizing available resources will encourage local support and involvement. Program growth and vitality can be enhanced as the public participates in program activities. Community support could include donations of equipment and plant material, guest speakers, or work stations for job placement. A persisting effort to use accessible community resources will result in a quality instructional program.

Pruning Techniques

To insure continued growth, program evaluation may indicate instructional elements that need to be modified or removed. Adapting to changes in the horticulture industry may result in an adjusted course of study and new job placements. Particular units of the instructional program, such as horticulture mechanics, may require expansion or revision. Different curriculum techniques and approaches may be necessary for acquiring new students. Entrepreneurship possibilities may need to be explored as alternatives to conventional employment. A quality vocational horticulture program must be flexible enough to allow for instructional improvement.

Requirements Recycled

What are the essential elements for a quality vocational horticulture program? An instructional philosophy that emphasizes the occupational training of vocational students, an integration of program components that encourages horticultural skill development, a commitment to community involvement, and an adaptable approach to program improvement are required. The proper combination of these elements will yield individuals prepared for a career in the horticulture industry.

1983 THEMES

The Agricultural Education Magazine

January Achieving Quality Classroom Instruction
February Achieving Quality Relationships with Business/Industry
March Achieving Quality Supervised Occupational Experience Programs
April Achieving Quality Programs with Decreasing Resources
May Achieving Quality Summer Programs
June Achieving Quality Program Supervision
July Achieving Quality Teacher Education Programs
August Achieving Quality Adult/Teacher Adult Programs
September Achieving Quality Laboratory Projects
October Achieving Quality Student Organizations
November How Others Farneske Use
December Assuring Student Performance

A student enrolled in horticulture at Buckeye Joint Vocational School, New Philadelphia, Ohio, is shown developing skills in plant care in the school laboratory. (Photograph courtesy of Jon Scott, New Philadelphia, Ohio.)

THE AGRICULTURAL EDUCATION MAGAZINE

August, 1982
The Orange Glen Story . . .

Getting a Horticulture Program Moving

By Don Martin
Editor's Note: Mr. Martin is Vocational Agricultural Teacher at Orange Glen High School, Escondido, California 92027.

When the horticulture program was started at Orange Glen (California) High School, the facilities consisted of a shade house, vegetable plots, and flower beds. During the past five years, the facility has grown with the addition of three greenhouses and a nursery area. Students built the structures during class time and received some excellent hands-on learning.

Construction of Facilities

The first greenhouse was constructed from Boeing 747 fuselage frames and fiberglass glazing. A bottom heat system, utilizing a household water heater and galvanized pipe, was installed on bench tops to aid in propagation. This facility was 17 feet x 24 feet and contains seedlings and cuttings which supply all of the plant material needed for the various horticulture classes.

The second greenhouse was a commercial kit, 36 feet x 50 feet, and an educational experience for the students to erect. Once the posts were in place, the structure went up like a giant Erector set. As soon as the sidewalks were poured and the plants were moved in, we realized that the size could have been larger.

The third greenhouse was framed using nuts, bolts, and galvanized tubing. The tubing was chain-link fence top rail material. The students made a jig in the parking lot using nails and string to layout, bend, cut, and drill the sectional frames. This greenhouse is 28 feet x 42 feet and is covered with a double layer of poly material for energy conservation. It was built in three weeks.

The students learned soil beds and bedding plant and potting benches for the facilities. They are presently converting the bottom heat system to a solar heating system. Concrete curbs have been poured around the vegetable plots.

The construction of the facilities was an ideal opportunity from several points of view. First of all, the school district could not afford to build all the structures, as many districts face a difficult financial situation today. Secondly, the experience and skills developed by the students was extremely valuable in that no one can legally hire a non-eighteen year old and give that person the same experience. The third beneficial aspect derived from the students' effort is a pride in their facility. The fact that they built the greenhouses will instill a special desire to keep the area and buildings up and protect their work. This is an attitude the rest of the campus does not enjoy.

Industry Considerations

It is important to talk with local industry people to determine what they are looking for in employees. This step is very important in developing and maintaining a quality and relevant program.

Community/School Involvement

There are numerous activities outside of class time and off campus for the students to sharpen their horticultural skills. Probably the one event that generates the most enthusiasm is the landscaping competition at the San Diego County Fair. In the past 10 schools involved and the premium money is enough to cover material costs. Another aspect of the county fair is a plant booth. All of the cooperators in the FHA chapters contribute house plants and student plants. This is a good opportunity for students to develop sales experience and raise FHA funds. Several times a year the ag department constructs educational displays in shopping malls and at the San Diego Wild Animal Park.

The training of horticulture judging teams gets a student ready for employment in retail sales. If a student prepares for judging contests, then he or she will have a greater knowledge of plant material than most people do when they start out in the horticulture industry.

Course Offerings

All students are encouraged to take plant science their first year in horticulture. In this class, they learn about plant physiology, soils, fertilizers, plant nutrition, and plant propagation. About 50% of the time, students are at the school farm putting into practice what they have learned in the classroom. Between the vegetable gardens and greenhouse, the students can try their hands at growing plants in the ground and in containers.

After plant science the students are encouraged to take landscaping. They are taught design, installation, and maintenance of the classroom. During the design phase, the students learn to select the types of plants that will achieve various desired effects in landscapes. They also learn to design sprinkler systems. The construction phase usually entails doing some work on the school campus. At the present time, students have converted the entire campus from manual to automatic sprinklers using 60-80 inch valves, 10 miles of wire, and 3 digital irrigation clocks. The students are currently landscaping around a new ag building. This latest project involves dealing with drainage problems that must be solved prior to placement of any plant material. The last part of the landscaping class is maintenance. Many campuses have plenty of areas that could use maintenance, and most administrators and custodials appreciate assistance.

The last class offered in horticulture is nursery practices. In order for a student to get into the class, he or she must have passed the previous horticulture course or better. This class addresses true production horticulture. The class is divided up into teams and the horticulture facility into areas, with each team responsible for an area. Each team is in an area for 4 weeks, and then rotates to a new area. By the end of the year each team will have been responsible for every area. While in each area, the teams must maintain all the plant material in a healthy state of growth and maintain a written log of their area. In the log, both long-range and short-term goals must be identified, then a solution for accomplishing each goal must be prescribed. In addition to running the nursery, this class is taught specific areas of study, such as propagation, soils, nursery sanitation, and facility maintenance.

Publicizing the Program

Public relations is a constant, on-going effort. When starting a new program, place a few plants throughout the school. Have students take plants to secretaries, librarians, nurses, and school office areas. Provide fresh-cut flowers in the board room for school board meetings, along with a little note saying courtesy of the ag department. If there are no rose benches on the campus, buy some and put them around your classrooms. This will brighten up your image plus give you a source of cut flowers.

There are many opportunities to provide vocational horticulture skills and knowledge. Horticulture facilities must be used to their fullest extent. The vocational agricultural teacher must take advantage of every opportunity available to the program and success will in all probability follow.

BOOK REVIEW


The book presents a comprehensive coverage of the topic of establishing and managing a floriculture business. Emphasis has been placed on business management concerns as well as current production concepts. The book has been divided into chapters covering the following areas: origin and growth of the greenhouse industry; greenhouse construction, heat and cooling; root media and pest control; water; light; energy-efficient greenhouse covering and designs; and alternative heat and cooling systems.

Each chapter has a summary of key points and a list of references for further reading. This book also contains a glossary of terms.

It is a well organized book, following the anticipated decisions a person makes when entering the greenhouse production business. The book is divided into 16 chapters covering the following areas: origin and growth of the greenhouse industry; greenhouse construction, heat and cooling; root media and pest control; water; light; temperature control; post harvest handling; marketing; and business management. Each chapter has a summary of key points and a list of references for further reading. This book also contains a glossary of terms.

The book is well written by Paul Nelson, currently serving as Professor of Horticultural Science at North Carolina State University. It would serve as an excellent text for secondary and postsecondary horticultural programs. It would also be a very good reference for high school vocational agriculture programs.

Susan F. Everett
Iowa State University
Ames, Iowa
One of the vocational agriculture teacher’s greatest assets and challenges is involvement in the community and the utilization of community resources. Numerous opportunities to enhance learning become available as one gains great knowledge of the community and develops the available resources. New teachers, as well as those who are established, should seek opportunities for using community resources.

Each school and community is unique and will have human and material resources not usually found elsewhere. Talents of the community should be tapped by the agriculture program through individuals, advisory committee members, and organizations. The agriculture instructor needs the opportunities in the community to benefit his or her program.

Community Concerns

Learning will be enhanced if teaching is relevant to what is going on in the community. Questions brought to the horticulture teacher about insect damage, weed control, or selection of plant material are usually questions many others in the community may have. The question asked by a colleague is probably one of several times of the student employed at the garden center. Alert teachers can use this kind of information as a motivator to get students involved in useful and practical learning activities. Class discussion, research work, student reports, guest speakers, and other teaching techniques may be used to get answers. Instruction is then applicable to community needs and educates students, builds student confidence, and increases visibility of the horticulture program.

Human Resources

Teachers should seek people with special skills to assist as volunteers in the program. These people may range from judges for FFA contests to experienced mechanics to help with equipment repair. Often suppliers and nursery personnel will present programs or serve as resource persons on new products. Local growers often express an interest in having students visit their facilities on field trips. They may offer plants for cuttings and identification purposes. Graduates of the horticulture program who are presently employed should be invited back. Students can often relate better to these young people and can visualize achieving similar employment.

Professional and Business Resources

In today’s horticulture industry, no teacher can be an expert in all areas and keep up with new information. Help is available through the Extension Service, Soil Conservation Service, local Chamber of Commerce, Plant Industry, and other agencies. Product suppliers, nursery personnel, and others working in specialized areas are aware of new developments in their specialty. The teacher who communicates with these local professionals and business personnel has a ready source of information. An example is the growing of poinsettias as a Christmas season production project. A local grower will:

- know the best varieties for the community
- be able to recommend sources of plant material and needed chemicals
- plan a schedule of lighting and shading to control date of flowering
- anticipate insect and disease problems
- recommend a pinching and disbudding schedule
- advise on the use of growth regulators

The teacher who tries to seek out all this data on his or her own will probably find it too time-consuming and discouraging. An added interest is the comparison of results between the school and the commercial grower. Most growers welcome this involvement and cooperate extensively. Students also have an opportunity to become acquainted with prospective employers.

Obtaining Plant Material and Supplies

Budget limitations can be supplemented by community resources. Often plant materials for production plants or for specimens and identification are available in the community. The class nursery can be increased by having students bring in plants not presently in the nursery in exchange for a plant the students would like to have. People in the community will appreciate that they can contribute to an educational program in this manner. Cuttings, seeds, and volunteer plants are frequently available and, with a little tending, can be developed into a free source for the entire production of some varieties. Naturally, one must be selective and not overproduce or use diseased and inferior stock.

When new plant varieties are introduced, the supplier will often be happy to donate stock plants or samples. For example, a new variety of St. Augustine grass was advertised and sold in our community. The local garden center donated samples to our program. Students in the class planted additional specimens and planted the grass in the lawn of the school. The new plants were named after C. W. Williams, a student who had the initiative to find this grass and successfully cultivated it. The students later used this introduction for an FFA public speaking topic. Seville is a patented grass and, naturally, we honor the owner’s rights and do not sell any. In addition, employment opportunities have become available for several students who can sell, advertise, install and maintain this new grass variety.

Used plant containers from landscapers, memorial parks, and homeowners can be obtained. New containers should be purchased for wholesale production projects so all plants are uniform and make a nice appearance. However, by using returned pots for specimen plants and vases to be upgraded at a later date, dollars can be saved.

School and Community Interaction

Many opportunities exist for school and community involvement in the horticulture program. Our students participate in the landscaping, interscaping, and general appearance of the school. This type of work could be overdone, and I am aware that many consider working on school grounds a burden. However, preparing athletic fields, planting annuals around the school, and providing plants for special indoor events are all educational experiences for our students. Our plants are frequently borrowed for National Honor Society Programs, award nights, open house, class plays, graduation, and many other activities held at the school. We ask only that recognition be given to the agriculture students for the use of these plants, as similar acknowledgments would be expressed for materials borrowed from any other source.

Organizing and completing a mass planting for a memorial park, country club or business gives experience in production projects, sales, installation, increases the visibility of the program in the community, provides money-making activities for the FFA, and leads to employment opportunities. Field days, parties, and study tours are all opportunities for community involvement and development support for local horticulture programs. Advisors and FFA chapters should also review the community opportunities available in ROAC, safety programs, and Food for America presentations.

Involvement with organizations can be beneficial to both the horticulture department and the community. Parent-student-teacher associations, civic and service clubs, horticultural associations, and agricultural cooperatives usually have a youth committee or sponsor some type of youth activities. Often these groups look for opportunities to help.

Each community will have many resources which can be utilized for more effective teaching. Involvement of these community resources can provide relevance in the horticulture program. Involving local people will increase community interest and the visibility of the program.

Utilizing community resources is a continuous process which involves considerable time and energy. The results and rewards of community participation and involvement are worthy of the effort.

BOOK REVIEW


"Floral Design and Arrangement" is full of everything you need to know about the techniques of floral design for the new, as well as the experienced designer.


Each chapter gives excellent step-by-step instructions for creating numerous arrangements from the basic to the intricate. The selection of flowers and foliage, the care and conditioning of cut flowers, the selections of floral containers, stem supports and wiring, the photographs and art work in this text book provides excellent supplemental help to the reader and student.

At the end of each chapter are selected references, terms to know, study questions, and suggested activities for the student. A glossary is provided in the back of the text.

This is an excellent textbook or reference for high school students in vocational agriculture.

Hebron Smith
Gackle Public Schools
Gackle, North Dakota
The Johnstown Story . . . Horticulture Is A Working Experience

The horticulture program at Johnstown (Pennsylvania) Area Vocational Technical School (AVTS) can be divided into four areas: landscape development, nursery production, and mechanics. The emphasis in the program is on the simulation of work experiences for the students in these four areas.

The best way to simulate work conditions is through the use of a land lab facility. All areas of the land lab have been, or are presently being, developed in a manner so that the students are in a variety of situations similar to those encountered on the job.

Land Lab Features

The land lab consists of 50 acres with a number of improvements. Centrally located in the land lab is a golf course. This 3-hole golf course has shots of 350 yards, 435 yards, and 320 yards. All greens and tees are of various sizes and shapes. The course is irrigated by a Rainbird System. When completely installed, the system will be fully automatic. On the golf course, the students learn proper care of turfgrass by moving the various areas, applying pesticides, and other important turfgrass culture techniques. This area is used for teaching landscaping by providing natural settings in which to design and layout landscapes.

Another vital part of the land lab is the nursery area. This is made up of two sections, a production area and a specimen area. The production area is presently being changed from 10 foot x 10 foot blocks that were maintained by students to a more efficient and practical row planting system. With the increase in plant material it has become essential to improve planting so mechanized procedures can be followed. Approximately 10,000 liners and transplants have already been put into the nursery.

At the present time the material is being placed on two foot spacings. The container stock has, in the past, been kept along the greenhouse in a fenced area. With the size of the material and the need to spread them out, a 50 foot x 80 foot space has already been levelled and will be covered with black plastic to serve as the container stock area.

The specimen section of the nursery contains several varieties of plants with three samples of each selected variety. Using the specimen nursery, the student learns to judge material, prune, take cuttings from named varieties, and, in general, compare materials used in landscaping. The rows are mulched with grass walkways so they can be used regardless of weather conditions and for easy maintenance.

Learning Activities and Skills

Through the use of the land lab, the student can develop many important job skills. Students cannot learn to plant

... tress to produce the plant material readily available in the area. The start of the nursery at school was by this method. Much of the plant material was started by taking cuttings from the school area, requiring students to bring in cuttings, and collecting and planting seeds. Through marketing of excess material, plants from local wholesale nurseries have been purchased, allowing for many varied varieties of plants to be grown.

Depending on the age of the liner, production time for most plant materials is at least 3 years. This gives the students good experience in long-term production. In many cases they never see the plant reach marketable stage. To maintain interest and to give students an opportunity to take a crop from start to finish, short season crops are also used. These include roses and hardy garden mums. Roses are bought in early spring, potted, maintained, and sold as a spring crop. Mums are started from seed, carried through the summer, and marketed as an early fall crop. Different varieties of perennials are being explored to determine the possibilities of using them as a crop.

In order to propagate, grow, and produce quality nursery stock, it is necessary to have the appropriate facilities. Many of these can be constructed by students as a learning experience. Within the land lab at Johnstown Vo-Tech, the following structures are utilized: greenhouse, wintering house, hot bed, bed and transplant beds, and a storage building.

Community Involvement and Participation

Community involvement has become a significant element of the horticulture program. Community support promotes the program as well as provides students the opportunity to take pride in their work. Students become very attached to their jobs and are proud of their skills in the public eye. The following are just three of the community projects that are included in the program.

Arbor Day Demonstration. What better time to promote horticulture than on Arbor Day? The program was designed just as an annual project in conjunction with a local elementary school. Each year, students will devote a day at the elementary school planting several trees in the landscape and giving demonstrations to the younger students. It is surprising how quickly students become teachers when given a chance to use what they have learned. About 2,000 tree seedlings that have been raised in the nursery are given away.

Field Trips. In addition to trips that are taken to view certain facilities, the students also become involved in "working field trips." The latter includes trips to advisory committee nurseries, golf courses, and businesses. During these "working field trips" the students are given a tour of the facility and then do hands-on work. This gives practical experience as well as assistance to the members of the advisory committee.

Landscape Maintenance. Several years ago the horticulture program had the opportunity to renovate the landscape of the Community Veterans Memorial Park. In addition to re-designing the landscape, the program donated and planted nursery stock. In the spring of each year, the students do maintenance work and plant flower beds. Students learn landscape maintenance on a practical basis, and the public enjoys an attractive park.

Future Additions

In order to keep improving the program, the following additions are being developed.

Turf Plots. These plots will be used to do studies in fertilizer rates, mowing heights, and identification of varieties.

Rose Garden. This will be a landscaped area approximately 60 feet in diameter. The roses will be contained in the outer edge in raised beds. The inside area will be planted in grass with benches placed in a landscaped park setting.

Sales Area. Here the students will learn how to arrange stock for sale, grade and price material, and prepare it for market. The students will be assigned to this area to obtain experience in marketing of nursery stock on a practical basis.

Wintertime-Lath House. This quonset-type structure will be constructed of conduit pipe. Lath will be attached to the inside of the structure for the winter months and summer months for young nursery stock. With the lath to the inside, there is no interference with the plastic that will be put on for winter. This will allow for total utilization of the structure throughout the year.

Christmas Tree Plantation. As the evergreen tree material matures in the field area and needs transplanting, this area will be utilized as a place to contain Christmas trees. These trees will be planted in blocks according to varieties. Here the students will learn the cultural care and management for green Christmas trees.

Even when the above features have all been accomplished, the horticulture program at Johnstown AVTS will not be complete. It will continue to grow by offering new and updated training materials. As in any vocational training program, the first and foremost concern of the horticulture instructor is to train the student for a career. In order to do this we must develop quality programs that not only offer the technical training, but also provide facilities in which the student can gain valuable hands-on work experience.

BY JOHN BIEZDROWA
Editor's Note: A winner in Vocational Agriculture Teacher, Greater Johnstown Area Vocational-Technical School, Johnstown, Pennsylvania 1994.

Students are taught how to plant seed and bedding plant production. (Photograph courtesy of David Agnew, Mississippi State University.)

Horticultural Mechanics: An Unanswered Need

By Richard Makin
Editor's Note: Mr. Makin is Vocational Agriculture Teacher at Abington Panty Area Vocational-Technical School, Bensalem, Pennsylvania 19020.

Horticultural mechanics became a formal part of the curriculum? If so, what competencies should students develop prior to entering the work force?

Needed Instruction

Interest in horticultural mechanics is by no means new. During the past decade numerous researchers have conducted task analyses in a variety of horticultural occupations. The majority of these tests have resulted in a common finding: Employees in the horticultural industry are often expected to perform work requiring mechanical skills. Nursery/landscape, greenhouse, turfgrass, and even retail floriculture workers need varying degrees of mechanical skills. Recommendations have long been made that mechanics instruction be included as part of the horticultural curriculum. Unfortunately, many full-time horticultural programs are still not involved in teaching mechanics skills and their application to the horticultural industry.

Competencies to be Taught?

What competencies should students develop prior to working in the horticultural industry? As a horticulture teacher, you are best able to answer this question specifically through involvement with your advisory committee and prospective employers in the area. A grassroots survey will quickly answer this question in any given locale.

However, some generalities can be made in deciding what mechanics areas should be taught. Due to the nature of the industry, the operation and maintenance of spraying and spreading equipment is a high priority. So, too, is the operation and maintenance of agricultural tractors and nursery-related equipment. In a study in Pennsylvania (Makin, 1981), representatives of horticultural businesses indicated that 63% of 191 mechanics competencies were "most essential" to their particular enterprise. Thirteen of these were from two machine shops, checking the performance of the sawmill and equipment and tractors. The important principles of operation and maintenance were continually stressed.

The mechanics groupings from which many mechanics competencies were classified as "essential" were plumbing and water systems, electricity, and horticultural construction. These included tasks such as installing a solenoid valve, wiring an off-switch, and interpreting blueprints and sketches.

Other mechanics groupings that warrant varying degrees of instruction were fitting and repairing horticultural tools, environmental controls, soils, irrigation, and sprinkling systems.

Teacher Proficiency

Clinton Jacobs, professor of agricultural engineering at the University of Arizona, feels that "a successful project is usually equalled with a relevant program and an instructor who has superior competencies to teach and direct the program."

The horticulture teacher is often regarded as knowledgeable about soils, plants, flowers, and little else. Competency in the area of mechanics is questioned and often ridiculed. In the past, problems with rotary mowers, injector pumps, or electric motors meant additional work for the horticultural mechanics teacher. In the future, the horticultural teacher should plan to use these situations in the horticulture laboratory.

Instruction in horticultural mechanics can no longer remain optional. Teachers of horticulture must:

- recognize the relevance of mechanics in the horticulture industry,
- identify mechanics competencies needed by workers in horticulture,
- improve and demonstrate proficiency in mechanical horticultural skills, and
- include horticultural mechanics instruction as part of the curriculum.

With these objectives in mind, horticulture teachers can better prepare students for the world of work.

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Entrepreneurship in Horticulture

Should I Start My Own Business?

By Travis Phillips
Editor's Note: Dr. Phillips is owner of Phillips Garden Center in Shelburne, Minnesota 55379 and Professor in the Department of Agricultural Economics at Minnesota State University.

A relatively high proportion of students with agricultural interests have a strong desire to go into business for themselves. This interest in owning a business is growing among students who are enrolled in horticulture programs.

The purpose of this article is to explore some of the facts of starting an ornamental horticulture business. A business in the horticultural field might consist of a production operation such as a nursery producing shrubbery and trees or a greenhouse operation producing foliage plants or floricultural crops. The retail counterparts are retail nurseries or garden centers and retail florists. The experts suggest that success lies in either production or retail sales rather than mix the two.

Since this article cannot address all of these aspects of the horticulture industry, the garden center was selected for purposes of illustration. Garden centers are distinguished from retail nurseries by the wider variety of merchandise sold other than shrubbery and trees. There are many ways to address the question of whether students should start their own garden center business. Perhaps one of the more meaningful ways is to look at the major requirements for a successful business: (1) a market potential for the business, (2) managerial skills, and (3) adequate finances.

Market Potential

Those who want to start their own garden center should locate in an area where there is an adequate market. The last Census of Business-Retail Trade indicated that in 1978 there was an average of 32,000 people per garden center in the United States. If there are not sufficient potential customers for the new business, costs per unit of merchandise will be so high that profits are not possible. A new operator should not expect to be able to push existing businesses out and take their customers. In short, the consideration of going into business should begin with a feasibility study.

Management Skills

An important issue is the managerial skills. A majority of new businesses fail within the first five years. Research indicates the major cause of failure is poor management.

The functions of management are planning, organizing, directing, coordinating, and controlling a business. The manager is responsible for making plans, organizing both people and the physical layout of the business, directing or providing leadership, coordinating both people and physical activities, and controlling the business by setting goals and checking the performance of the people involved. Additional activity involves assessing the needs for person-

Financial Considerations

The third requirement for a successful business is money. Unfortunately, too many thinking of investing the capital for real estate, fixtures, and merchandise. Often few funds are made available for operating or working capital. Experienced business operators often think they only need sufficient operating capital for making changes for the first few customers. In recent years, lack of adequate cash flows has been the major downfall of many potentially profitable businesses before they ever really got started.

Where can a young person secure adequate funds to start his or her own business? For many, without careful planning and saving over time, funds are unobtainable. The usual source of money is borrowing from commercial banks often guaranteed by the Small Business Administration. The young must have some of his or her own funds to invest and have a carefully laid-out, detailed plan for the proposed business.

Getting Started

Rather than attempt to start a business from the beginning, a much safer approach is to often begin by getting experience in an established garden center. If the individual has the ability to own a business, he or she should be able to move up in management and gain valuable experience. By careful selection of an employer, students may be able to find an owner looking for a younger person to take over. Frequently, the original owner sells the business to the employee and provides most if not all the financing. In this case the seller is interested in making terms which the young buyer, the original owner, checks the performance of the new operator. The additional activity involves assessing the needs for person-

Advantages and Disadvantages of Ownership

Why should an individual want to own a business? Most (Continued on Page 14)
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people dream of being their own boss. Owning the business means that all the profits accrue to the owner. People are rewarded for their contribution. Ownership carries with it the flexibility of making changes desired by the owner.

Ownership is not without its disadvantages. If ownership gives all the profits to its owner, so too losses. Income is variable for ownership while salaries are fixed. Funds must be located for the investment. Borrowed funds may be difficult at times to repay. Unexpected economic conditions, competitors, and many other conditions may make finances difficult to handle. Being responsible for all aspects of management often is not near-

ly appealing as it may have appeared. Failure to give prop-

er attention to some aspects of management may be disas-

trous. While ownership may provide some degree of flexi-

bility, it allows less flexibility in other ways. The owner is

locked into the given situation and is responsible for mak-

ing the best of it. As an employee, one can move when the

situation is unacceptable. As an owner, an individual may

be locked into undesirable conditions.

Preparing for Entrepreneurship
What should a student receive in school to help manage his or her own business? Studies in which established

business leaders are asked what skills new employees should possess place business training and communication

skills at the top. There are many aspects to business train-

ing, but two stand out. Some knowledge of bookkeeping,

even though someone else will keep the records, is ab-

solutely essential. Financial management is equally impor-

tant. Skills in selling and merchandising are needed. The

ability to communicate with employees, customers, buyers,

and the general public is necessary. Competence in

verbal and written expression is also highly desirable.

The manager must be a leader. Leadership must be based

on respect and demonstrated knowledge of how to manage

the business. Most of this demonstrated ability is

manifested in planting ability. The manager should

always be looking ahead and be willing to share with key

employees what he or she sees in the future.

Prospective garden center owners should visit with

several garden center managers without going into business.

Of course, these managers should not be those who may

be future competitors. Visiting garden centers in the area

which are considered to be successful is invaluable. Talk-

ing to management of these businesses is well worth the

time.

Many horticulture students dream of owning their own business. Only those who properly prepare themselves and plan ahead will be successful. Locating in an area with the potential for another business and having adequate finances are necessary but being properly prepared as a manager is most important.

THEME
The Buckeye Story…

Considerations in Horticulture Programs

Success in a local horticulture program can be achieved if the instructor applies certain principles in planning and carrying out the program. At Buckeye (Ohio) Joint Vocational School, we have learned from our experiences.

This article will discuss several areas of concern: laboratory layout and design, plant materials, learning ac-

tivities, and supervised occupational experience (SOE).

Facilities
The characteristics of the laboratory facilities have a direct influence on instruction. The teacher in an existing horticulture program should follow four benchmarks to improve the laboratory. First, evaluate the effectiveness and efficiency of the present facilities. Secondly, a five-

year plan should be developed with realistic goals for im-

provements and/or additions to the present facilities. The

third step is to implement this five-year plan, with the

fourth step being to evaluate progress on an annual basis.

In establishing new horticulture programs, consider the

above steps along with community needs. The planning

process should include surveying the community to find

out what types of horticultural businesses are in the area

and what the employment outlook will be. These surveys

should indicate the specific areas to include in the cur-

riculum and the facilities needed.

A suggested list of facilities for a horticulture program may include the following:

- greenhouse
- headhouse/potting room
- floral design room/sales area
- relased classroom
- cooler/display window
- pottery
- golf green
- polyhouse
- lathhouse
- office area
- orchard/vegetable gardens
- arboretum/turf plots
- cold frames/hotholds
- locker/shower area
- adequate in/outdoor storage areas
- athletic fields/lawn areas
- hand tools and equipment

Adequate plant materials and facilities are essential for a quality pro-

gram.

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Program Effectiveness

Educators need to evaluate the effectiveness and efficien-

cy of horticulture programs. Consideration needs to be

given to the insuring that the training prepares individuals

for success. The quality of the horticulture program will

have a direct effect on the quantity and quality of skills

developed by the students.
Building a Horticulture Program

An increasing number of teachers of vocational agriculture are teaching horticulture. A major plus for teaching horticulture is that the instruction is valuable for both boys and girls, special needs students, rural and urban students, vocational and non-vocational students, and adults. In addition, incentives and awards are provided in horticulture proficiency areas through the FFA at the local, state and national levels.

Steps in Developing a Program

While teaching vocational agriculture at Abilene High School, the following steps were taken by the author to develop and successfully establish the horticulture program on a sound basis:

Step 1: After consulting with the principal, a brief survey was made of the students in the freshman and sophomore English classes to determine if sufficient interest existed. The English classes were chosen because they included all students at that level. The results of the survey revealed a very high degree of interest among the students.

Step 2: Various resource books were used to determine which units of instruction should be taught, and in what sequence. The course outline was then developed.

Step 3: An advisory group was established to obtain ideas and recommendations for the program. The group consisted of three persons who operated horticulture businesses in the local community. The advisory group reviewed the course outline and provided many ideas needed to successfully conduct the horticulture program.

Step 4: Using the course outline as a guide, a list of materials, supplies, and equipment, and a budget were developed which would result in effective instruction in the classroom and laboratory.

Step 5: From the ideas and recommendations of the advisory group, a lean-to style greenhouse was chosen as the laboratory. It was decided that the students in the vo-ag construction class would construct the 25-foot x 30-foot greenhouse.

Step 6: After making a scaled drawing of the greenhouse and organizing the information, the proposed horticulture program was presented to the board of education.

Step 7: Upon arrival of the Board, which was almost immediate, the plans were carried out. The greenhouse was constructed the same school year by very enthusiastic students in the agriculture construction class. The greenhouse is presently part of the Horticulture Education at Western Illinois University, Macomb, Ill. 61455.

As a teacher or administrator of vocational and technical training in horticulture, you can assess the benefits of a standardized test to you and your position by answering these questions: Do students need to demonstrate their level of competence on a standardized test and use the test results to improve instruction or advanced standing in educational programs? Is there pressure to provide objective data of grading students and to improve, update and validate curriculum for maximum student achievement? And, are you interested in documenting teacher effectiveness through student achievement and competence? The answers to these questions are a resounding “yes,” the Student Occupational Competency Achievement Test in Horticulture may be an invaluable resource for you.

Gaining Practical Experience

To prepare for teaching the course in horticulture, the author worked during the summer at a local wholesale greenhouse operation. In-service instruction was received at Kansas State University. The following summer, evening classes were held over a two-week period.

As a result of quality horticulture programs at the secondary level, students are presented with many of the competencies needed for such occupations as greenhouse operator, nursery operator, florist, greenhouse grower at a golf course, landscaper, horticulture teacher in technical programs, and horticulture therapist—a driving force behind the new programs. Students who plan to progress in the field of horticulture need to obtain additional training and experience at a postsecondary school or university. Through a quality instructional and experience program taught by an enthusiastic and well-qualified teacher, students will continue to obtain satisfying employment in the horticulture variety of occupations in horticulture.

By LORIE FARMER
Editor's Note: Dr. FARMER previously taught horticulture at Abilene, Kansas. He is presently Head of the Agriculture Education at Western Illinois University, Macomb, Ill. 61455.

High-quality Horticultural Education is crucial to the success of the student and the horticulture curriculum. The Standards of Accreditation and Certification of Agricultural Education Programs (SAC) has established guidelines for horticulture programs. These guidelines provide a framework for evaluating the quality of horticulture programs and identifying areas for improvement. By following these guidelines, horticulture programs can ensure that they are providing a high-quality education that prepares students for success in the field.

For further information, contact the Regional Director or the State Commissioner of Agriculture. They can provide detailed information on the Standards of Accreditation and Certification of Agricultural Education Programs and how they can be used to improve horticulture programs.
Standardized Testing in Horticulture

(Continued from Page 17)
the secondary level are very narrow in their offerings to students. The offerings are often limited to nursery management and operations or landscape or greenhouse management and operations or floral arrangement. Ornamental horticulture is broader than the four areas combined because it also includes the arboriculture, floriculture, and turf areas as well.

Horticulture is even more encompassing than ornamental horticulture in that it includes all of the above and also vegetable crop production, small fruits, and tree fruits. Hopefully, the all-encompassing horticulture test will cause teachers and administrators with limited offerings to rethink the pre-existing nature of their horticulture programs. Training too narrowly can be training for unemployment.

Secondly, some of the pilot testers in the report that insufficient time was allocated to complete the job assignments in the performance tests of the test. An automatic response is to question if students in horticulture training are being taught to work efficiently. In addition to doing a job properly, students who will become entry-level workers must be able to work fast enough to turn a reasonable profit. Productivity on the job may require practice in the learning environment to meet the job standard. Any too, perhaps attitudes about work and working need to be stressed and reinforced more in school.

Thirdly, it was reported from a few of the pilot test sites that supplies and materials sometimes were not available to set up the specified jobs for the performance part of the test. It seems reasonable to assume that if supplies and materials were not available for testing, that they probably were not on hand for instruction. Adequate supplies, materials, equipment and facilities are basic to both instruction and testing.

Testing and Test Results
The SOCAT-HORT is designed to be used by individual teachers or schools and can be administered in school as a part of an on-going program. After the tests are administered, they are mailed to NOCTI for scoring. Printouts of test scores are returned to the school. A one-page printout will be produced for each student. It includes an ability aptitude along with written and performance scores and subscores on the occupational test. Additional scores can be used diagnostically to determine student, class, or school strengths and weaknesses. Students also receive data which indicate their standing in relation to their school, state, and consortium of participating states. Teachers receive detailed printouts with student and class scores for the school, state, and consortium.

The SOCAT-HORT package can be of help to students as an employment credential or for gaining advanced standing in future educational programs. It can provide an objective means for grading your students and improving your curriculum. It can document your effectiveness as a teacher through student achievement and competence. The Student Occupational Competency Achievement Test in Horticulture can be an invaluable resource to you and your program.

Now, The National Occupational Competency Testing Institute (NOCTI) is a nonprofit educational organization based in Texas, 1979, which provides teacher and student competency tests to the vocational education community. The Student Occupational Competency Achievement Testing (SOCAT) program was conceived as a specific program area within the NOCTI organization. A group of State Directors of Vocational education have been involved in the development of the SOCAT program. Most of the states defined that the point are in the trade and industrial service areas. However, tests have been implemented for other vocational education service areas. The Horticulture Test was the first produced for the trade and industrial service area. If you would like more information on the SOCAT, please write directly to NOCTI, 40 Calvin Avenue, Albany, New York 12206.

Field trips can either be the perfect supplement to classroom instruction or an unecessary and unplanned events carried out at the whim of an instructor for no apparent educational reason.

A field trip is generally defined as taking a group to a specific place for a specific purpose. Field trips can be of short duration, 3-1/2 hours. The primary purpose of a field trip is to observe, learn, actions, or practices that cannot be brought into the classroom. It may also provide opportunities for students to actually develop new skills. The important consideration remains that it be an educational experience that fits well into an instructional curriculum.

Field trips can be most effective by following basic planning steps and by keeping the primary purpose of the field trip in mind.

STEP 1: Define the purpose of the field trip.
Just as we need objectives for our daily lessons, so do we need objectives for our field trip. To go out to a nearby farm with no idea of why our group is going is to waste your time, student's time and your host's time, as well as some very valuable educational opportunities. Write down the objectives and activities your group will accomplish before any contact is made with your resource person. Have your act together.

STEP 2: Make arrangements with the field trip host.
Several items must be discussed with the field trip resource person. Your hosting arrangements, the number of students attending, the planned arrival and departure time and the activities and special arrangements that need to be made regarding safety or sanitation. It is extremely important that both students and the host are prepared for a worthwhile educational experience.

STEP 3: Plan the field trip so it comes at the appropriate time in an instructional unit.
Remember, the field trip must add to classroom instruction and not be just an alternative to an unplanned lesson. Discuss the field trip as it relates to your unit prior to leaving the school.

STEP 4: Prepare the class for the trip.
Prior preparation of students is essential. Students should be advised of all necessary arrangements and expectations of the students during the field trip. Proper dress and actions should not only be encouraged, but required. Student interest and good behavior can be assured if they are expected to accept some responsibility. This can be accomplished in a variety of ways, including:

Using students to help arrange the field trip and help summarize and evaluate the activities.

Providing students with a list of field trip-related questions to answer.

Involving students in the actual field trip activities.

Using the field trip and subsequent conduct as the basis for a daily grade.

Using field trip information as a reference for a quiz.

Above all, appropriate student conduct must be maintained during transportation and at the field trip site. Irresponsible student behavior can make your field trip host extremely hesitant to extend the same hospitality to your class back in the future.

STEP 5: Arrange for transportation.
Transportation should be arranged at least two weeks ahead of the scheduled date. Usually school sponsored transportation will have appropriate insurance, however, liability coverage should be confirmed prior to leaving on the trip.

Caution must be exercised in allowing students to provide their own car transportation. In fact, the safest pol-

icacy to adopt is that no student transportation be used.

STEP 6: Arrange for payment of field trip expenses.
If there are costs associated with the field trip, provide them in advance so they should be handled at least two weeks prior to the field trip date. If students will have to assume the costs, both they and their parents should be advised of the costs associated with the field trip. Hopefully, the trip expenses will be borne primarily by the school district.

STEP 7: Thank the host.
Showing appropriate appreciation is extremely important. A letter of appreciation to the host is a must. Such a letter of appreciation will be written shortly after the trip and should mention the educational experience and the educational benefits received by the students. A newspaper or article providing an overview of the field trip and emphasizing both student benefits and the role of the host is an appropriate follow-up activity as well.

STEP 8: Summarize and evaluate the field trip.
Keeping the purpose of the field trip in mind, summarize the activity to ensure that your students received the maximum from their experience. Evaluate the field trip so that you'll know if a similar activity would be appropriate in the future. Evaluation questions to ask include:

Did the field trip meet the objec-

Could prior arrangements be improved?
Was the field trip site convenient and safe?
Was a safe atmosphere provided?
Did the field trip host provide the cooperation and information about the trip site.
If you receive positive responses to these questions, you probably will want to use the same resource for future field trips. It is wise to keep a list of active file of field trip possibilities.
The field trip is an excellent instructional method of providing a perception of classroom learning to real life situations. With proper planning, it will be a meaningful and educational experience for your students.
IDEAS UNLIMITED

Constructing a Fiberglass/PVC Greenhouse

By Michael E. Hehry

Editor's Note: Mr. Hehry is Vocational Agriculture Teacher at Flowing Wells High School in Tucson, Arizona 85710. This article is based on his entry in the Ideas Unlimited contest sponsored by the National Vocational Agricultural Teachers Association.

Developing good supervised occupational experience programs for students enrolled in horticulture is sometimes a problem. At Flowing Wells High School (Arizona) some of the students' experience programs are conducted in the school laboratory. Horticulture laboratories can provide many experiences for students, but if SEO programs are going to advance and expand, some capital investment should be made. Because the cost of buying greenhouses, a plan was developed for the construction of an inexpensive facility.

Over the past four years, we have developed a greenhouse plan that lends itself to the needs of the students in developing a strong occupational experience program in horticulture.

The first attempts at constructing greenhouses included a frame composed of re-used wood lumber. The construction of this frame was quickly discarded because of the advanced wood working skills required to complete this project, the amount of time and money required, and the heavy weight of the 10' x 10' greenhouse when completed.

The next attempt at building a greenhouse frame was to use six 20 foot lengths of 1/4 inch PVC (polyvinyl chloride) pipe. This type of frame seemed to be the solution to the problems related to the wood constructed frame. PVC pipe is inexpensive, durable, and easily accepts a sheet metal screen, for the fastening of the corrugated fiberglass sheets. By using PVC pipe, anchored at ground level by a 2' x 4' base, the students are able to build the greenhouse frame in one afternoon. The finished greenhouse is portable, since the weight of the entire structure is about 150 pounds. Four people can easily load it on a trailer.

Of all the advantages of PVC pipe framing, the most important is the quality of the finished product. You will enjoy helping your students build this greenhouse and be satisfied with the quality of the finished project.

Many changes can be made to this basic greenhouse design. Wooden 2 x 2's are used in framing the door and cooling pads.

The greenhouse can be completely constructed in the shop and is portable.

Many changes can be made to this basic greenhouse design. Wooden 2 x 2's are used in framing the door and cooling pads.

Using Simulation in Floriculture Sales Training

By Theodore G. Lattion

Editor's Note: Mr. Lattion is Vocational Agriculture Teacher at Cameroon Keydy School, Camden-Wyoming, Delaware 19934.

Sales training is important in many horticulture occupations. To help develop skills in selling, students need hands-on experience. The classroom in our floriculture program resembles a small flower shop, including design tables, telephone, ribbon racks, and 10' by 10' area set aside for displays and sales training. Students create displays that are appropriate and aid with sales of individual student projects. Major display times include Thanksgiving, Christmas, Valentines, and Easter.

The display includes an area for hanging baskets and potted plants, a sales counter, a glass display case, and a solid wall for displaying advertisements or for hanging items such as decorative brooms or wreaths.

Sales are limited to the employees of the school district. With good planning and an informative sales program (developed by the students), the sales are more than adequate to give the students the needed experience in designing and merchandising.

Students gain experience in customer relations by this hands-on training in arrangements, plants, and other items by phone or by visitors to the classroom.

A few examples of the types of materials we promote are:

- Fall Dried arrangements
- Thanksgiving Fresh flower centerpieces
- Christmas Wreaths (live and artificial)
- Decorated brooms (live and artificial)
- Centerpieces (live and artificial)
- Valentines Bud vases
- Bouquets
- Corsages
- Easter Silks flower arrangements
- All year Plants from the greenhouse

Each season offers the opportunity to teach something new. By the end of the year the students have had varied experiences in retail floral management.

The importance of the farm machinery area of study is obvious to any vocational agriculture teacher. Without competent agricultural machinery service personnel the industry of agriculture would be hampered. But, what should the person know to be a competent agricultural machinery service worker?

Exactly what should be included in the course of study to enable the student to have entry level skills when he/she completes the program? What do the potential employers say is needed from these employees about to enter the job market? These and other concerns led to the development of a study among the Virginia Farm and Industrial Equipment Dealers Association. The findings of that study are summarized in this article.

Purposes and Procedures

The overall purpose of the study was to determine the entry level skills needed by employees in the Farm and Industrial Equipment Industry (FIEID). The industry included dealers in Virginia who were members of the Virginia Farm and Industrial Equipment Dealers Association (VFIEDA). All 155 Virginia members listed in the 1981 Association Directory were surveyed. The procedures used were as follows:

- Developing the survey instrument. The instrument used in the study was developed through a review of the literature. Sources included the Vocational-Technical Education Consortium of States (V-TEC) catalog, state department of education curriculum guides for agricultural education, and the National Agricultural Curriculum Competency Study. Through a refinement process of the skills gleaned from these sources, a final two-page instrument was developed. Part one was designed to obtain biographical information about the dealer. Part two contained a listing of entry level skills which was divided into four sections: service department, sales department, office department, and parts department. The dealers were asked to check whether each particular skill was essential, desirable, or not needed for entry level employment.

- Surveying the dealers in the state. The survey instrument was mailed to the dealers with a cover letter asking their assistance and explaining the purposes of the study. The first mailing resulted in a returned survey instrument from 89 dealers (57.4 percent). A post card was sent as a reminder to those dealers who had not responded two weeks after the original mailing. After the follow-up phone call, survey instruments were returned from 98 dealers (62.3 percent).

- Analyze the data. The data were analyzed to determine the frequency of dealers checking the three categories of essential, desirable, or not needed for each entry level skill. In addition, the percentage of dealers who responded in

(Continued on Page 22)
Election of FFA Officers

By Don Lefly
Editor's Note: Mr. Lefly is Vocational Agricultural Teacher at East High School in Green Bay, Wisconsin 54303. The following article is based on his entry in the Ideas Unlimited Contest sponsored by the National Vocational Agricultural Teachers Association.

Numerous methods are used to elect FFA Chapter officers. Many voc-ag teachers have remarked that they don't feel that their best qualified members always become officers. Over the years I have tried many systems and I now feel that I have a system which is fair and in the election of the best candidates. This is how it works.

1. Fair and eliminates virtually all railroading and clique-type voting.
2. Allows close to 100% of chapter members to vote.
3. Succeeds in retaining the top candidates as officers. There is no loss of good candidates due to competition.

Method

1. In March of each year we distribute an FFA officer tabulation form to all eligible members. They must turn in applications within one week.
2. The graduating or senior officers examine the applications and certify all eligible and suitable candidates.
3. A ballot is prepared listing all candidates alphabetically. Ballots are handed out at beginning or close of normal class meetings and students who are members vote for the 8 candidates they consider to be the top candidates. (They do not select a specific candidate for each office.)
4. The ballots are tallied at the close of the day and the top 8 vote getters will become the new officers.

The new president is elected by the membership and the other offices are filled by the union of the new officers and the outgoing members.

7. If we have two of eight candidates who declare for president, we have each give a 3 minute impromptu "Greenhand Inspiration" speech. We also have them introduce a guest in their speeches. A written exam is also given to the eight candidates and the scores posted. These items will give all eight candidates a good idea of how each can handle these important functions and what their FFA knowledge is.

8. After the new president is elected we move on to the vice-president and so on until all are elected to their respective offices.

This method results in the election of your eight best candidates, eliminates unfair campaigning and railroading, allows all members to vote for the 8 officers, and results in no complaints.

Every member had a chance to apply, run, and be elected, but the final selection to the respective offices was voted by the eight top candidates, who would choose the best of all, which of them is best qualified for each office.

LETTERS

“Letters to the Editor” is a feature to encourage dialogue among readers of THE MAGAZINE. Selected letters will be printed upon editing. Your letter will be welcomed. (Send letters to: Editor, THE AGRICULTURAL EDUCATION MAGAZINE, P.O. Drawer AVE, Mississippi State, MS 39762.)

Editor:

I want to congratulate you on the fine job you’ve done as Editor of THE AGRICULTURAL EDUCATION MAGAZINE. The increase in the number of articles by instructors is of particular interest to me.

There is one issue that I’d like to throw into the hopper for your consideration. Throughout the nation there are, according to the 1962 Directory for Two-Year Postsecondary Programs in Agriculture Education, 334 two-year postsecondary institutions with 2,049 full-time instructors teaching 68,171 students. In California alone there are 56 institutions, 258 full-time faculty, and 21,811 students. This is a sizable group of agricultural education professionals to which the Agricultural Education Committee might consider increasing the focus on this group. In California this might also assist CATA in attracting more community college instructors into the professional associations.

There are a number of high quality two-year agricultural programs throughout the country. My suggestion would be to select a program director from a community college or two-year technical institute, which not only formulate a multi-year course of study, but also serve on the Steering Board. This person might play a useful role in including one article or two on postsecondary programs in each issue. The article would address the established monthly theme. Most, if not all of these articles, in my judgment, ought to be prepared by program directors and instructors.

The coordination of securing such articles from California could be performed by the CATA Vice President. Committee members can second and myself.

I’d appreciate your thoughts on this idea.

Sincerely,

Ralph E. Matthews, Specialist Agricultural/Non-Agriculture California Community Colleges Sacramento, California 95834

AUGUST, 1982

Table: Table 1 Ten Percent Highest Rated Entry Level Skills in the Virginia Farm and Industrial Equipment Industry

<table>
<thead>
<tr>
<th>Skill</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have good communication skills</td>
<td>92.8</td>
</tr>
<tr>
<td>2. Read and obey safety precautions</td>
<td>91.1</td>
</tr>
<tr>
<td>3. Use list to determine prices</td>
<td>91.2</td>
</tr>
<tr>
<td>4. Follow shifting rules on equipment</td>
<td>91.6</td>
</tr>
<tr>
<td>5. Follow an accepted procedure in case of an accident</td>
<td>97.0</td>
</tr>
<tr>
<td>6. Make out sales slip</td>
<td>97.2</td>
</tr>
<tr>
<td>7. Make correct exchange after sale</td>
<td>89.5</td>
</tr>
<tr>
<td>8. Receive new shipment of parts</td>
<td>86.9</td>
</tr>
<tr>
<td>9. Use telephone properly for repairs</td>
<td>86.2</td>
</tr>
<tr>
<td>10. Know crop conditions</td>
<td>83.4</td>
</tr>
<tr>
<td>11. Compute ratios in the field</td>
<td>83.5</td>
</tr>
<tr>
<td>12. Maintain clean and orderly cust. and parts</td>
<td>86.5</td>
</tr>
<tr>
<td>13. Start engine using jumper cables</td>
<td>83.1</td>
</tr>
<tr>
<td>14. Parts according to established locations</td>
<td>83.1</td>
</tr>
<tr>
<td>15. Inspect for damaged parts in new shipment and contact parts managers</td>
<td>83.2</td>
</tr>
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Table: Table 2 Ten Percent Lowest Rated Entry Level Skills in the Virginia Farm and Industrial Equipment Industry

<table>
<thead>
<tr>
<th>Skill</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>1. Setup spark plug threads</td>
<td>20.0</td>
</tr>
<tr>
<td>2. Replace windshield wiper blades, motors, and controls</td>
<td>29.5</td>
</tr>
<tr>
<td>3. Calibrate hydraulic system</td>
<td>29.5</td>
</tr>
<tr>
<td>4. Repair or automatic control device</td>
<td>28.9</td>
</tr>
<tr>
<td>5. Keep lock-safety systems</td>
<td>27.8</td>
</tr>
<tr>
<td>6. Keep daily fuel, oil and hydraulic fluid consumption</td>
<td>27.8</td>
</tr>
<tr>
<td>7. Repair tire by patching or plugging</td>
<td>27.1</td>
</tr>
<tr>
<td>8. Cut, form (bend, shape) metal</td>
<td>26.7</td>
</tr>
</tbody>
</table>

Comments:

- The lowest number of essential ratings are shown in Table 1. These were selected from all four sections of the skills list on the survey instrument.
- It is important for teachers of voc-ag to know whether or not the content is meeting the needs of the industry. This study revealed that teachers teaching agricultual education service. AGRICULTURAL EDUCATION MAGAZINE (Continued from Page 21) each category was computed.

References

Randy Dipner of Colorado Springs, Colorado, has developed a system to produce Braille using a microcomputer.

Daniel Johnston of Frostproof, Florida, has developed a computer program that teaches hand-sign language (finger spelling) for communication with the hearing impaired.

(Photographs courtesy of Martin B. Winston, Tandy Corporation, Fort Worth, Texas.)