THEME: Vocational Agriculture and the Handicapped Student
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## Rewarding Exceptional Teachers

A particular dilemma was to confront teachers of vocational agriculture. The dilemma is one of attempting to provide vocational agriculture of excellent quality which results in recognition through our usual means, and simultaneously serving the needs of disadvantaged and handicapped students. A lot of soul searching results from these ethical and moral deliberations.

### Assessing Quality

What is a quality program of vocational agriculture? Frankly, the most rapid means of achieving a measure of distinction for excellent quality is through the achievement of outstanding individuals through the FFA. What is the relationship between the quality of the instructional program and such variables as number of American Farmers, number of outstanding awarded members, number of State Officers, contests entered or won, etc.? One should quickly grant that other measures of quality are more difficult to quantify.

The problem for the federation is that the measurement of instructional excellence is one that goes beyond contests and awards, but is difficult to ascertain. How, then, are teachers to receive recognition for excellence?

### Couple the complex issue of ascertaining quality and the need to achieve recognition with the needs of disadvantaged and handicapped students? Can traditional systems cope with this?

The crux of the matter is really whether intrinsic rewards can equate with the extrinsic ones. Writers in this issue highlight the personal satisfaction and self-fulfillment they have realized through their work with the handicapped and handicapped. Will these intrinsic rewards continue to sufficiently nourish the needs of these teachers for recognition? Given the situation where teacher peers receive ample extrinsic plaudits through traditional recognition systems, will the profession be able to retain the talented teachers of the handicapped?

**Priorities**

How does a teacher set priorities when handicapped students are mainstreamed? Today, this minute, one student needs your time to complete a state farmer application; a handicapped student needs your time to interpret a computer program. Which one do you help if you have time for one? Which way do you turn? Who will you help? Who needs you the most? Where are your priorities to be placed? These questions can only be answered by you, at that time and at that place.

The problem may be in how you decide. A correct answer is not proposed. The example is posed to exemplify the dilemma because such hard decisions are faced routinely by teachers of vocational agriculture.

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**Who Rewards?**

The immediate resolution would appear to be established by other extrinsic rewards systems. Who should tackle such a monumental undertaking? An equitable system maintained by professional associations, such as the NAAT, would be truly unmanageable. The only system which could really be managed would have to occur at the local level where the quantitative data related to performance can be appropriately supplemented with qualitative information. Strategies to develop excellence in education are springing-up across the country. Excellence among teachers would have to be no less emphasized. The identification of such work for this excellence must occur.

Teacher educators and supervisors can aid in resolving the problem. Teacher training and inservice programs which closely delineate the problems teachers may encounter can help. Programs should explicitly prepare personnel to appreciate the intrinsic rewards accruing from the role of the teacher. These groups can also provide appropriate recognition to teachers on a personal basis or in a group setting.

This issue focuses upon teaching the handicapped. Authors describe strategies they have employed to be successful. We have a responsibility to educate each individual placed in our charge to the best of our ability, so we need to learn from their successes. Their successes likely result from their excellence and we need to determine how best to acknowledge excellence in working with disadvantaged and handicapped persons. Exceptional teachers need rewards.

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## The Cover

Educators need to be properly recognized for teaching excellence as these Louisiana teachers are being recognized. Developing a system to recognize teachers of the handicapped is a challenge faced by the profession. (Photographs courtesy of J.C. Simmons, Chief, Vocational Agriculture/Agribusiness Section, State Department of Education, Baton Rouge, Louisiana 70807.)
Are They Being Served?

On November 1, 1979, Public Law 94-142, The Education for All Handicapped Children Act, was signed into law by President Gerald Ford. On that date, it became a violation of federal law to deny any handicapped child a free and appropriate public education.

Ten years later the question arises as to how far we have really moved on educational rights for the handicapped. In a recent study by the authors, the following statements were made by teachers, counselors, and administrators during the interview portion of the study.

- "Mainstreaming is very good, as long as they (special needs students) are in someone else's class.
- "There is no need to put computers down in the special education class, even though they were bought with special needs money... they can't even read.
- "Once students have been mainstreamed, they are no longer special needs students, and we don't keep records on them.

Although this is not the attitude of the majority of secondary school employees, it is still disturbing to hear these types of statements by educated and responsible individuals. An elder statesman in the U.S. Senate remarked that he could legislate everything except attitude. Indeed, we have legislated everything except attitude and curriculum modification to mainstreaming and IEP's, but still we have done very little to improve teacher attitudes toward educating the handicapped.

In a recent study by Baggett, Scanlon, Curtis and Malillo, it was found that:
- 96 percent of the vocational agriculture programs in Pennsylvania have not developed or purchased curriculum materials or adapted instructional methods to accommodate the special needs students enrolled in their program.
- In addition, school officials claimed cooperation occupation experience placement and/or employment for over 300 special needs students, yet the researchers found less than 10 percent of those students actually on-the-job.

Obviously, legislating dedication, concern and educational programming and its limitations. Therefore, let us turn our attention to a more basic rationale for serving handicapped students.

Basic Tenets

Gerald Lehighbody suggested that there are three basic tenets upon which the rationale for vocational education rests. The first, a philosophical tenet, is based on equality of education. Lehighbody suggested that educational opportunities are for everyone, not just those entering the work force or going to college. Mainstreaming the handicapped into the educational setting may not be sufficient to insure educational equality. As educators, we must be less concerned about the numbers of students placed and more concerned about the quality of the educational placement.

The economical tenet of Lehighbody's rationale suggested that those trained for a job become productive and contribute to the economic stability and growth of the country. Today, there are 26 million Americans classified as handicapped. Is there any doubt that the handicapped, as a trained workforce, could make a significant contribution to all phalae of the American economy? Yet, today unemployment among the handicapped is staggering.

Finally, the third tenet of Lehighbody's rationale is social. He argued that workers who are trained for a job and become wage earners develop self-esteem and confidence in their own ability, thus becoming a more useful and contributing member of society. The handicapped have both the right to develop to the fullest extent of their abilities, and the responsibility to use their talents to improve the society in which they live.

Appropriate Education

Legislation has played a significant part in insuring that special populations receive an appropriate education. Public Law 94-142, The Education Amendment of 1976, defined the different handicapping conditions and set aside 10 percent of the federal vocational dollars for special needs populations. Over the past several years, the set aside has increased dramatically and federal dollars have flowed into educational systems in the name of special needs students. Since 1963, the number of handicapped students in vocational education has increased by approximately 96 percent. As we look at the number of students and dollars being expended on vocational programs for the handicapped, we must ask the question, "Are they being served?"

Vocational agriculture has a long record of helping students with special needs; however, attitudes among agricultural teachers and all teachers have changed. Even with legislative mandates, it is sometimes an uphill battle to insure that special populations are being adequately served.

Congress recently passed and the President signed the new Carl D. Perkins Vocational Education Act of 1984. Although this new act supersedes the previous legislation, the basic philosophy and concerns remain. The second paragraph under the statement of purpose states:

- assure that individuals who are inadequately served under vocational education programs are assured access to quality vocational education program, especially individuals who are disadvantaged, who have been handicapped, men and women who are entering nontraditional occupations, adults who are in need of training and retraining.

Once again, vocational programs are asked to take the lead in providing special needs populations with an appropriate education. There is increased financial support to encourage local educational agencies to do an effective job.

We in vocational education, and especially vocational agriculture, have the legislative mandates urging us to do an effective job. Looking back on the comments at the beginning of this editorial, we are concerned about what historians will record about vocational agriculture and special needs populations over the next several years. Will the old prejudices against special needs students prevail or will history record that great strides have been made in the education of all of America's youth and adults.

We can help determine how history will be written by doing our part in the big scheme of education. This issue is devoted to ways in which teachers and programs have been successful in this endeavor of serving our handicapped populations. You will find working examples to guide you as you strive for excellence in vocational agriculture.

Teaching The Disadvantaged and Handicapped

When I am asked what my occupation is, I reply that I teach horticulture. If questioned further, I continue to explain that my students are disadvantaged and handicapped. Some students have normal needs but are negative towards their work. Sometimes I hear responses like, "You must have a difficult job" or "That wouldn't be for me." What they do not know is that I have the best job in the entire school system.

The characteristics of a disadvantaged student might include one or more of the following: students come from broken home situations, some have been retained a grade level above their age group, others lack personal goals, are underachievers, lack self-confidence, come from low income families or have a negative attitude. Handicapped students may be mentally or physically disabled but none of my students are so severely handicapped that they cannot function in the laboratory.

While these characteristics may seem negative, these students possess a wealth of positive characteristics as well. Finding those abilities is like digging for treasure. It is very fulfilling when underdeveloped abilities are recognized, expanded and enhanced. The positive characteristics of the disadvantaged and handicapped student must outweigh the negative. These students have an ability to be sensitive and caring individuals, an eagerness to please others as well as themselves, and a strong sense of loyalty. They can grow to be responsible, honest citizens who are gainfully employed and form the backbone of our society. These young people need in order to become responsible adults are persons that will help them find their talent and abilities and develop them.

Needed Teacher Qualities

What qualities must one possess to teach the disadvan-
tagged and handicapped? First, the teacher must love to teach. This is certainly no place for the half-hearted teacher. The instructor is teaching every minute of every day by conventional teaching methods as well as by example. The teacher is constantly being observed and is a definite role model. Second, the teacher of the disadvantaged and handicapped must be creative. These students learn by repetition. Teaching as well as learning can become boring if material is presented in the same fashion.

The creative teacher is eager to present material in different ways. This leads to the next quality a teacher should have: enthusiasm. These students usually come to school with a "ho-hum" attitude. It is important for the teacher to dispel this apathetic attitude and replace it with an eagerness for learning. When the teacher presents material in an enthusiastic and creative manner, students retain the information longer and with more detail. While the classroom should be an alive and exciting place, caution must be taken to prevent the classroom from taking on a carnivals atmosphere.
Teaching The Disadvantaged and Handicapped (Continued from Page 5)

Adaptability and versatility are also important qualities for the teacher to possess. The students are usually subject to mood swings. When students enter the laboratory, the teacher can tell if they are in an "up" mood or a "down" mood. Sometimes the activities for the day may need to be changed immediately to best meet the needs of the class.

Three other qualities that are necessary for success and satisfying teaching experience are patience, optimism, and a sense of humor. There are three days when it seems everyone is out to see who can make the teacher lose his/her cool. Without a strong feeling of optimism, the teacher could not face the next day. Positive changes in students unfold slowly and it is the pleasure of watching these changes that keeps the teacher of the disadvantaged and handicapped going. Above all, a sense of humor helps get the teacher through some tough spots. At the same time, students will quickly learn it is okay to laugh with each other but not at each other.

All of these characteristics are important but consistency may be the most important. Consistency is a major cleaver in winning the students' confidence. Consistency unleashes havoc in the classroom. Students need to find that the teacher consistently treats them in the same manner. Rules need to be enforced and discipline should be strict but fair.

Students often complain about rules but in reality they want a framework within which to work. These young people respect the rules and the teacher because they know what is expected of them.

All of these qualities, the love of teaching, creativity, enthusiasm, sensitivity, patience, humor, optimism, a sense of humor and consistency are key ingredients for a successful teacher of the disadvantaged and handicapped. These qualities may be necessary for all teachers but for teachers of the disadvantaged and handicapped they are absolutely essential.

Initiating A Program

I teach in a regional vocational center where two and three year vocational programs are offered. This center opened in 1973. To serve the disadvantaged and handicapped student, the Employment Training Program (ETP) was organized in 1979. Prior to this, a building maintenance class that served twenty-five students was the only class available for disadvantaged and handicapped. When the ETP was begun, the only available facilities were two old army hospital buildings which had housed the Woodrow Wilson Rehabilitation Center in the 1930's and 40's. The buildings were in need of repair and our first students did most of the remodeling of these outdated facilities, mostly in the areas of plumbing, electrical work, and carpentry.

When we opened our doors in 1979, we offered horticulture, woodworking, needlework, cooking, sewing, home management, plumbing, industrial sewing, commercial foods, and some pre-vocational classes for younger students. We had an enrollment of 140. Since that time, auto servicing has been added and other programs are under consideration for next year. We now have an enrollment of 280 students with a waiting list from all three school divisions that the ETP serves. These students come from twelve area schools.

Our schedule is a half day block where students return to the home school for lunch and academic classes. The afternoon block is made up of different students who have had their academics in the morning.

Our horticulture program began by sharing the horticulture department located in the vocational center. The facilities were excellent but as our program expanded, we needed a place of our own. The old army hospital was unused and located in the area of the other ETP buildings. The building trades classes renovated this dingy, drab building into a bright cheerful classroom. After the floor and painting were completed for the greenhouse, some of the faculty members erected a 24' x 48' polycarbonate greenhouse. We are especially proud of this facility since all the work was done by faculty and students.

When I began teaching in 1979, I found there were few curriculum materials available for teaching horticulture to the disadvantaged and handicapped. As a result, I have developed my own program and have written it up in a competency-based format. Each year changes are necessary for growth within the program. By using the competency-based format, I can make changes in an orderly fashion.

The Curriculum

Our program is similar to many other horticulture programs. We raise mums, poinsettias, carnations, spring flowering bulbs, geraniums, hanging baskets and a variety of bedding plants. These are taught in plant propagation, plant identification, plant care, lawn care, some landscaping, and principles in vegetable gardening.

Another similarity is that we have a resale account. All monies received from crop and project sales go into that account. The resale profit from work is required to keep the resale account in the black.

One source of income for this account is our fall decora- tion project. The students plant, cultivate, make up mums, baskets, and decorative bongs. These designs are made from dried and preserved materials. The students may check these items off a wish list in a library book, take them home to sell with all money received going into the resale account. This first project teaches design concepts, eye-hand coordina- tion, the use of florists tools and mechanics and merchandising. The intangible rewards the student receives are the compliments and praise from friends, parents, teachers, and customers. It is something so0 motivating, taking responsibility for the merchandise and money.

Another popular project is corsages. We construct cors- ages for school functions such as homecomings, parent's night, and banquets. Our students are proud when they see their cheerleaders and others wearing the corsages they have created.

During the Christmas season, our laboratory is transformed into a Christmas wonderland. We make a variety of pine cone and permanent wreaths, door and table arrangements, and an assortment of garlands and holiday decorations. An open house is held one day in early December. Parents, friends, and teachers are invited to visit and purchase Christmas decorations. This has proven to be a very successful project even though we never advertise to the public. We do not advertise because we do not want to jeopardize our friendships with the area florists and garden centers by being in direct competition with them.

After the Christmas and New Year's holidays, we begin to think about new ideas. We sell sweetheart bu- wases and corsages all constructed with silk flowers. In the spring, Easter and Mother's Day corsages and small silk arrangements are sold.

The grand finale in the spring is our bedding plant sale. We grow flowers, vegetables, perennials and herbs. All sales are handled by students. These resale projects take much planning in advance. The planning, creating, and merchandising is an important part of the learning process.

Uniqueness

The above characteristics make us similar to other horti- culture departments, but we are also very different. The disadvantaged and handicapped student has a short attention span. Time is spent in the class- room. Class is kept short and to the point. Student interest is maintained by using teaching techniques. The teacher must have a command of the subject matter and have an appealing approach to presenting the facts.

Another difference of our program is that a great deal of time is spent concentrating on employability skills. One of the goals of the ETP is to enable a student to become employable. These skills are taught by using horticulture principles and techniques. The importance of good attend- ance, getting along with others, staying on task with and without direct supervision, learning to follow directions and practicing good personal hygiene are stressed daily. Much time is spent discussing job opportunities, job inter- views, and keeping a job. Included in the classroom work also is a unit on banking and money management.

Teaching in a vocational center has its definite advan- tages. I have a two and one-half hour block in the morning and a two and one-half hour block in the afternoon to work closely with students. No class has more than twelve students. This gives me an excellent opportunity to get to know each individual student and to deal with their individual needs that cannot be met in a fifty-five minute class period. I have an opportunity for communication with students. Together, the student and I can build a positive relationship.

Support

Our program has survived only because of a strong support group. The ETP has its own assistant prin- cipal, guidance counselor and job coordinator who have helped many of these students become independent and well adjusted young people. There is not enough I can say about strong dedicated persons at the head of our program helping us continue to be successful.

The principal of the vocational center is always helpful and is proud that such a program can be offered. The advisory council offers help and support and are dedicated to the students in the community. The superintendents and staffs of all three divi- sions which operate the school staffs have been very sup- portive. I feel the program is a reflection of what we believe. We strongly believe these are areas where these days of budget cuts and curriculum changes, the school board has seen the need for this type of alternative program and has been very supportive and kept the budget from falling on those who need and deserve the opportunity for vocational training.

The Future

The future looks bright for those young people who are disadvantaged and handicapped. More school systems are seeing the value of the alternative programs. Working with these students is not always an easy job, but it is a fulfilling one.

Many of our students come back to visit after com- pleting ETP. Some may have gone on to a two-year pro- gram at the vocational center. Some may have corrected attitudes and behaviors that have allowed them to take a full academic schedule at the home school. Some may have graduated and may have left high school and are gainfully employed. It is then that you realize something that was said or done in the classroom may have made a difference in these lives. These young people have not only gained self-respect but respect for others and the world of work.

These young people have enriched my life as much as I have enriched theirs. By sharing this information with other concerned teachers, I hope that we may have a more positive attitude toward the disadvantag- ed and handicapped students that come to our classroom in the future.

FEBRUARY, 1985

THE AGRICULTURAL EDUCATION MAGAZINE

Student involvement in resale projects encourages the development of pride in the product. (Photograph courtesy of Oakcrest High School, Mary Landing, New Jersey.)
Plants Breed Success

By Robin Good-Hamilton

The primary focus of the horticulture program is on greenhouse crop production, with flower arranging and landscaping playing secondary roles. The class is held in a Vo-Tech greenhouse in Pleasant Gap, Pennsylvania. Mentally handicapped students are drawn from four area school districts and attend class during their high school years. The class of ten to fifteen is comprised of trainable mentally retarded (TMR), educable mentally retarded (EMR), and learning disabled (LD) students.

These young adults attend the horticulture program in one of two ways. TMRs participate in the program two days a week in school and three days at home, and LDs and EMRs, on the other hand, attend the greenhouse program in an all-day, nine-week basis. They are in the greenhouse for two, nine-week sessions per year, and at their home school districts taking math, English, etc., for the remaining nine-week sessions. The program is set up so that these students alternate between the greenhouse and the home school throughout the year. During a typical school year, the horticulture program accommodates fifteen to twenty students; about eight of these are a bi-weekly group of TMRs and the rest make up two, eighteen-week groups of EMR and LD students.

Goals of the Program

The philosophy of the greenhouse program is based on one concept: to help the mentally handicapped student procure those skills that will enable him or her to become a functional member of society. Therefore, the emphasis of the program is not to produce horticulture experts but to teach each student to develop in three broad areas.

One of these areas is economic independence. Through the learning and practicing of various greenhouse operations, students learn how to grow plants, transplant seedlings, and care for them. All this knowledge is obtained during a scenario that simulates cold frame, greenhouse, and field operations. Students are paid for their work, and their earnings are turned over to their locker. Students who have saved enough money can purchase a new pair of shoes or some other item. In this way, students learn to save money and use it wisely.

A second broad area is in social competence. The greenhouse environment achieves this in two ways. First, the same greenhouse operations that foster employability also foster skills in day-to-day self-care at home and in public places. Secondly, the students are in an informal learning arrangement which allows for a great deal of interaction with the teacher and classmates. The more interaction a student gets, the easier it is for him/her to transfer this ability of interacting to society at large. The third broad area is aesthetic awareness. Being around plants and being shown the beauty of flowers brings about an appreciation and respect for living things.

Applying Homeschool Knowledge

Three of these general goals are achieved through the implementation of five specific areas that structurally compose the horticulture program. A second broad area involves taking the knowledge that the students have learned at their homeschools and applying it to various greenhouse operations.

For example, having students use their knowledge of mathematics, such as calculating and mixing fertilizer ratios, or having students employ their writing skills to keep records of plant observations. In doing this, students are reinforcing their knowledge and are learning that knowledge is often applicable to a variety of situations.

Practical Skills

A second specific area of the horticulture program is practical greenhouse skills, the day-to-day activities necessary in operating a greenhouse: watering, fertilizing, propagating plants, transplanting seedlings, repotting, pinching plants, and checking for insects and diseases. These activities are not only mandatory in caring for plants but develop general skills that are useful outside the greenhouse environment.

Hand-eye coordination and fine motor skills become developed which can be employed in diverse situations. For example, mastering the delicate operation of transplanting plants, dexterity is a must. Students who lack this skill may have difficulty learning to move objects with their hands, but with practice, they can learn to use a knife to cut, to thread a needle, or even to use a computer keyboard.

Another skill that is taught is that of using a clock. Students are expected to learn when to perform certain tasks, such as watering plants or checking for pests. This helps to develop their ability to follow a schedule and plan their day.

Theoretical Applications

The third specific area of the program deals with the theory of growing plants. Such topics as photosynthesis, respiration, cell parts, mitosis, and the effects of light, water, temperature, and diseases in plants are learned. This knowledge is supplemented by techniques such as diagramming, classifying, learning new vocabulary, reviewing material, and observing demonstrations. These subjects are taught because students want to know and need to learn how to do something but why they are doing something.

Theory teaches the rationale behind the everyday operations so that a student is not simply performing a mindless task but uses the theoretical knowledge in understanding plant growing problems. In doing so, one is improving practical solving skills in the real world, which allows students to reason out solutions to problems encountered outside the greenhouse. Theory also develops complexity in a child's thinking. Manual operations such as watering and transplanting foster skills in manipulating physical objects while theory fosters skills in manipulating concepts. Both skills are necessary if an adult is to successfully care for himself or herself.

Becoming Socially Competent

Another specific area that comprises the structure of the greenhouse program is development of good interpersonal relationship skills. By working in pairs or small groups, the student learns how to share and cooperate. At other timesware, students that have already mastered a technique will tutor another child that needs help. Doing this enforces the concept of helping others.

Continuous interaction between classmates, the teacher, and customers aids the students in becoming self-confident and adept at speaking and relating to other people. Continually practicing these skills in the greenhouse improves the ability of each student to coherently speak to and successfully deal with other people. These tools can then be used as the foundation for functional independence outside the classroom.

Boss for a Week

The last area of the program deals with the development of management skills: making decisions, planning, and implementing these plans. For example, by the time the students reach the third year of the program, they have practically mastered the day-to-day activities in the greenhouse. They are then required to put this knowledge to work.

One student is selected to be the "planner" of the week and is responsible for designing a week plan of activities dealing with the care of the plants. During that week, he/she acts as an instructor, while all other students are carried out and carried out correctly.

Another management activity involves letting each student grow a crop from start to finish. The crop can range in size from ten plants up depending on students' experience and knowledge. Each person chooses one kind of plant out of a selected variety. If he/she has mastered the basics, he/she is given more responsibility: planting, cultivating, harvesting, watering, fertilizing, detecting and controlling insects and diseases, repotting, pinching, selecting proper temperatures and light conditions, etc. For those students that have not yet mastered a majority of the basics, the activity can be modified to their level of experience simply. This makes it possible to foster these students' cooperation to the full extent of their abilities and at the same time allows them to have already mastered. These types of activities foster taking responsibility and initiative and hone such skills as solving problems and making plans, observations, and decisions.

Yet another management development exercise is one that has been mentioned earlier, allowing students to tutor other students. To be a good tutor involves being able to find out where the uncertainties lie, explain things, correct mistakes, and tell whether or not what has been explained has been learned. A modification of tutoring is supervising. Third and fourth year students can be put in charge of a group of students or in charge of supervising another group. This works especially well when activities have to be done inside and outside the greenhouse simultaneously.

(Continued on Page 10)
Support Services for Handicapped Students

The vocational agriculture teacher is expected to know a variety of skills and abilities in order to be a role model, to provide new research and technology, and to meet the needs of students with different abilities, experiences, and career goals. Along with the vocational agriculture teacher, the student is asked to meet the unique learning needs of handicapped students within the framework of the regular education program.

- Assistance from specialized or paraprofessional staff,
- In-service opportunities,
- Informational and curriculum resources,
- Self-teaching and other instructional devices for students.

Pennsylvania Model

In Pennsylvania, services are available through intermediate units — 29 regional education agencies serving school districts. Intermediate units offer special education programs, computer services, staff development in-service courses, instructional materials and curriculum support services, which one district, alone, could not provide as economically or effectively.

The Central Susquehanna Intermediate Unit, located in Montandon, serves 17 school districts, three area vocational-technical schools and several nonpublic schools in five central Pennsylvania counties. Its large rural service region includes hundreds of farms and agricultural businesses, and several of the schools it serves offer vocational agriculture programs.

While this article is written primarily from the intermediate unit’s perspective, support services also may be available through local school districts, universities, state department of education and statewide programs. Federal funds for vocational programs and for the handicapped may be available for some services. Teachers desiring more information may contact their state departments of education.

People Helping People

The aide who assists the physically handicapped student, the internment therapist, and the special education teacher are a major source of support for handicapped students and their vocational agriculture teachers. Both specialized and paraprofessional staff have important roles to play in meeting the needs of those with handicaps. For handicapped students who are receiving special education while being mainstreamed or integrated into regular vocational agriculture classes, the special education teacher is the closest source of help.

Mainstreamed students in our region are educable through local school districts, universities, state department of education and statewide programs. Federal funds for vocational programs and for the handicapped may be available for some services. Teachers desiring more information may contact their state departments of education.

The special education teacher provides support services, which may include home visits, to mainstreamed vocational agriculture students and serves as a resource person for teachers.

February, 1985

A special education teacher and agriculture education teacher developed a proposal for funds to support minimal computer instruction for handicapped students in a vocational agriculture program.
Support Services For Handicapped Students

Participants experience points out the need for care in providing directions to the mentally retarded. Participants learn, however, how to work independently, and working with a mentally retarded student as he or she follows a direction is likely to be an effective approach.

In another special education staff offer in-service training on special materials, devices and techniques for teaching disabled students. Other training focuses on classroom management and mainstreaming with mainstreamed students.

A popular "Kids on the Block" program uses child-size puppets to prepare students, teachers and parents for the entry of special needs students into regular education classes. The presentations are available on request and can be adapted to the needs of specific audiences — teachers, administrators, parents or students.

A course available through the CSU's staff development program offers another twist to in-service training. Called "Agronomy In The Classroom," the 10-week course approved for Pennsylvania Department of Education in-service credit, offers regular and special education teachers' suggestions and resources for incorporating agriculture education in their programs. The course can be useful to special class teachers helping mainstreamed students in vocational agriculture programs, as well as for service opportunities for teachers of handicapped students who have been available through the Pennsylvania Department of Education and state and national associations.

Films, filmstrips and videotapes to increase awareness and assist teachers serving disabled students are available on loan from a resource collection maintained by SCU special education staff. A professional library at the intermediate unit includes publications on mainstreaming in vocational agriculture, management tips, mental retardation, learning disabilities, physical handicaps and other handicapping conditions.

Statewide programs, as well as national organizations, may be additional sources of support. In Pennsylvania, the Pennsylvania Resources and Information Center for Special Education (PRED) provides information searches in response to questions regarding special education, and three Special Education Regional Resource Centers offer in-service programs, audio-visual and other instructional materials, and professional publications for those serving students with special needs.

Technology

Technology can be a valuable source of support for both handicapped students and their vocational agriculture teachers. "Technological devices can be used to help meet the special learning needs of the handicapped. An option, for example, for students who are blind or visually impaired is to "see through their fingers" by converting printed words into tactile sensations.

Computer programs allow students to work independently at their own pace and can provide remedial instruction. The mentally retarded or learning disabled student who may become frustrated in a regular classroom where

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**Adapting Equipment for the Handicapped**

**By Ken Breslin.

Teachers of vocational agriculture who attempt to provide educational experiences for handicapped students are faced with a number of challenges. The Pennsylvania Special Education Code of 1976, Public Law 94-142 place the burden of providing equal educational opportunity with the classroom teacher. Legislation, however, does not spell out specifically how the vocational agriculture teacher can make these adaptations in the laboratory/shop setting on a daily basis. When first considered, the prospect of safely accommodating the physically handicapped student into an agriculture mechanics laboratory/shop setting seems like a hopeless endeavor. This perceived impossibility may often be brought on by the teacher's lack of formal training in the area of special needs education. Further frustration occurs when teachers do not have an active role in preparing the student's IEP (Individualized Education Program) and the fact that while federal mandate says accommodation will occur each student's needs are individual.

It must be remembered that when accommodation of the physically handicapped student into a vocational agriculture program is successful, educational and career building experiences are possible. Accompanying the handicapped requires extra time and effort but the rewards for all concerned are great.

**Basic Information**

When vocational education teachers in Montana were surveyed concerning the accommodation of handicapped students, several important facts were revealed. The major findings were:

1. Most physically handicapped students have not had previous educational experience, simply because of their handicapping condition.
2. When many vocational agriculture teachers in our state are challenged by the handicapped student, only

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(Continued on Page 34)
Adapting Equipment for the Handicapped

(Continued from Page 13)

The development and testing program utilized individuals with a broad range of physical handicaps including amputees, cerebral palsy victims, paraplegics and quadriplegics and vision impairments, hearing impaired, and partially paralyzed individuals. The value of using handicapped individuals is that non-handicapped people cannot visualize the personal experience of those who live and cope daily with handicapping conditions. A basic precept of the Education for All Handicapped Children Act is that educational experience be at regular or normal as possible. Therefore, a first approach should be to have handicapped students work with unaltered tools and equipment in the same manner as non-handicapped students.

Vocational agriculture teachers will need to set up a mobility testing program for each physically handicapped student. The test should be centered around tools and equipment used in the agricultural education program. The special education staff in the school can assist in this test. When tool-use difficulty is experienced by the handicapped, the situation should be carefully analyzed. At this point user input from the handicapped student is extremely valuable combined with the experience and expertise of the vocational agriculture instructor who leads to problem solving. Assistive apparatus, when developed, must meet the safety and proper use requirements set by the instructor and the mobility needs of the individual student.

Tool and Equipment Testing

Testing data reveal that each physically handicapped individual differs in the type and severity of disability. However, there is a high degree of similarity of problems encountered in the use of tools and equipment when these individuals are viewed collectively. While some people are physically strong, each experienced difficulty with fine motor control, dexterity, reach and body position when using tools and equipment. It was noted that despite varying degrees of initial difficulty, test group members felt that all but a few tools could be used correctly and safely with practice or tool modification.

As in any new skill encounter, the physically handicapped test group lacked knowledge of the tools and equipment and their uses. This situation will also arise for disabled students in the real agricultural mechanics laboratory setting. That the test group students could, with few exceptions, use the tools and equipment after basic use and safety instruction is a point to be remembered by skeptical teachers. An additional point to be remembered is that handicapped students must be appropriately placed in the school program through the use of the IEP (Individualized Education Program) mechanism with planning input from all concerned school personnel.

Building Equipment Aids

When it became necessary to construct aids to permit the physically handicapped individual to use equipment several major factors were kept in mind. The items should: 1. be economical to construct 2. be made from materials available anywhere 3. be constructed easily in a short period of time, and 4. not impede the use of tools or equipment by non-handicapped individuals.

In constructing all aids, common items such as C-clamps, nuts and bolts, steel bar stock, solid hardwood, and plywood, were used. Consequently most items can be developed at a very low cost. Except for a specialized machine tool, the average cost per item is about $12.00. To satisfy immediate student needs, many items were made during an afternoon or overnight.

Each piece of adaptive equipment should be developed with safety in mind. There is a need to make tools and equipment safer to use by all individuals, based on professional background and teaching experience. In addition, Congress mandates such action for accommodating the handicapped.

Each handicapping condition is unique and must be considered individually. Vocational agriculture instructors should understand that while certain equipment may be modified or adapted for specific handicaps, they may not solve all problems for everyone. The overwhelming observation during all testing and development sessions was that the physically handicapped individuals continually searched for ways to use their positive abilities. This compensatory motivation greatly affects student performance, a point to be remembered by vocational agriculture instructors.

Attitudes and the Handicapped

Education of the handicapped has come a long way in recent years. Greater emphasis on individual rights has brought about many changes in the educational opportunities for the handicapped. Changes in philosophy, have brought about legislation which considers the rights of the handicapped to an education to be the same as those of other individuals. These changes have seen the handicapped taken from being locked away in institutions to being mainstreamed into the regular classrooms.

In years gone by, it was felt with advancements in the medical profession we would eventually be able to prevent or cure most of the conditions we know as handicaps. While medical science has made great strides in this area, we have not yet reached the point where handicaps are a thing of the past. Though it may seem illogical to say, advancements in medicine are probably accounting for more handicapped students in our schools than in the past. The reason for this is that many of the handicapped students we find in our schools today, had they been born fifty years ago, might never have survived to attend school. With increased numbers of handicapped students present in our schools, for whatever reasons, the likelihood that the average teacher will encounter handicapped students in their classes has also increased.

Attitudes Are Important

Handicaps are not exclusively a personal characteristic. They are the product of an individual who has a difference and an environment. Since human development does not take place in a vacuum, we must consider the effect of the environment on the handicapped student. A handicap exists when a student lacks the necessary ability to perform at the levels expected by those around them. Whether or not the differences that the student has are important depends on environmental or societal expectations. The academic environment is one area in which handicaps, especially mental, tend to be noticeably noticed within this particular environment. Social punishment for having a disability can be more of a handicap than the actual disability that the student has.

Since the attitudes of those around the handicapped student play a major role in influencing their development, they should be an area of concern. Perhaps the key individual associated with these attitudes is the teacher. The teacher must look at attitudes toward the handicapped from two viewpoints: 1) the teacher's own personal attitudes toward the handicapped, and 2) the attitudes of the other students in the class toward the handicapped. Negative attitudes from other students and/or the teacher may tend to send a handicapped student's development in a negative direction. Whether or not the handicapped student has a positive atmosphere for learning may well depend upon the teacher's willingness to intervene in situations which could present a problem to handicapped students.

Are They Really Out There?

When considering the plight of handicapped students in our regular vocational agriculture programs there are two basic questions which must be addressed. The first, simply stated, would be, "Are there handicapped students present in our regular programs?" This question would probably be modified by many to ask if there are enough handicapped
The Land Laboratory: Success for the Special Needs Student

By Michael Tyrell

The educational philosophy of the Omaha Public Schools is one of coordination and integration. Of the 41,000 students served in the Omaha School District, 8,000 are identified as special needs students with varying handicaps and they are all served in the public schools facilities. The Two Rivers Agribusiness Center provides an educational alternative to the traditional school setting by providing academic and agribusiness experiences for interested senior high school students.

The program was developed on the concept of total education for all students. Incorporated are an academic core offering designed to meet graduation requirements and electives in agribusiness such as mechanized agriculture, agricultural production, natural resources and sales and service.

The staff philosophy sets the educational tone of the program. It is felt by the center staff that agricultural education must be approached from all perspectives: curriculum structure, materials, lab experiences and extracurricular activities with a constant view towards career awareness and career opportunities. With all students in mind, we are seeking to develop the total child, instilling in them responsibility, maturity, appropriate human relations skills and an understanding that learning does not end with graduation but is a lifelong process.

Understanding the restraints of special needs students, adaptations to the program have been incorporated into all aspects of the educational format. Materials have been adapted and alternate supplemental materials supplied when needed. All written materials are available on cassette tapes and large print and braille books are available for the visually impaired. The district has the facilities and the personnel to assist in the adaptation of equipment to meet the needs of physically handicapped students.

The Land Laboratory

The 167 acre land laboratory creates a unique education setting that allows the special needs students to interact with their peers and the facility in a variety of ways. Because of the small pupil-teacher ratio, direct intervention techniques are possible. Such activities as peer tutoring and shadowing are workable because of the facility and the program. The shadow program has opened several doors for students with limited agricultural experience. Letting students spend a day in a career area of their choice gives them their first taste of agribusiness opportunities. As secondary students, career awareness and career opportunities are primary concerns for both regular and special education students. The C.A.R.T program (Career (Continued on Page 16)

The attitude of the teacher must also be properly developed. (Photograph courtesy of Vern Luft, North Dakota State University.)

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Preparing Agricultural Teachers of the Handicapped

By John R. Crowe, Jr.

Theme

The basis for the points to be made in this article will be from what has been learned from an extensive review of the literature, on-site observations and interviews with vocational teachers who have taught the handicapped, and personal interviews with handicapped students. From 1978-80, Virginia Tech was awarded a two-year project from the Bureau of Education for the Handicapped (BEH) to study the area of teacher preparation relating to the handicapped. The overall goal of this project was to facilitate the teaching/learning process for the mildly handicapped student in vocational and manpower education.

While the nature of this project took an across-the-board approach in vocational education, the conclusions drawn have implications for agricultural education. This article focuses around the seven major areas of curriculum: in a tent, instructional process, student evaluation, record of student progress, behavior management, sources of support, assistance, and facilities. Furthermore, implications for preparing teachers of agriculture to work with the handicapped will be identified and these implications will be based on what I observed, and was told during my on-site visits.

Curriculum Content

A cursory review of the curricula in the departments visited indicated no difference between the content that is usually taught in regular classes with the content one might find in a class specifically for the handicapped or in classes where the handicapped were mainstreamed. But upon a more detailed analysis, the courses are divided into smaller units of instruction, shorter time periods, and each unit was mastered by the student before progressing to the next level of content required.

Another observation made at this time was the relationship of the curriculum to the handicapping condition of the student. In some cases, the content was modified due to the specific handicapping condition of the student and what that teacher perceived as a realistic vocational career for that student. Furthermore, a strong emphasis was found to be placed on developing desirable social behavior in students.

Teacher education programs in agriculture require preservice students to observe the handicapped in a classroom/laboratory setting. This needs to occur before student teaching and during student teaching. Furthermore, undergraduates must fully understand the different handicapping conditions and what limitations these conditions place on a student's ability as they relate to specific curricular content. When this awareness is obtained, undergraduates will be better able to select and arrange the instructional content appropriate with the career aspirations and unique abilities of each student.

Instructional Process

The statement could be made that good teaching is practicing those things that we as teacher educators believe should be followed, regardless of the students being taught. This holds true to a great extent with the handicapped. However, some special points need to be highlighted and understood by our teachers. During observation visits as part of the project, effective teachers of the handicapped were using small group instruction, peer tutoring, learning centers or other individualized approaches. These teachers were also up-to-date on the latest instructional materials available from commercial sources and they had secured many of these materials for use in the classroom and laboratory. Their classrooms were colorful, bright and cheery. Chalkboards and bulletin boards were full of information that related to instruction under way. Chalks and handouts were readily available to assist the student's progress from one point in the curriculum to the next.

Agriculture education preteachers should be required to...
Preparing Agricultural Teachers Of the Handicapped

(Continued from Page 19)

observe teachers of handicapped students, conduct case studies of the handicapped, act as teacher's aide in a class of handicapped students, and if appropriate, actually teach a lesson to the handicapped under the supervision of an experienced special education teacher. This implies that the methods courses would need to assure that all future teachers were competent in planning and directing small group learning situations, in utilizing the assistance of handicapped students for peer tutoring, and in using non-traditional classroom structures, such as individualized learning centers.

Student Evaluation

Teacher educators have traditionally emphasized to undergraduates the evaluation of their students through formal and informal approaches. Furthermore, we may have stressed the need to evaluate on a regular basis of once per week or at the completion of an instructional unit. After many on-site visits, the effective teachers were stressing what would be called the informal approaches to evaluation. They were using projects, oral reports, demonstration of skills and other types of individual student activities as a means of evaluation. Individual evaluation of each handicapped student was made more often, and in most cases every day. The other comment made by these teachers was that each student was evaluated in light of an earlier assessment made of that student's achievement and not in comparison to the group or the progress made by that group.

More emphasis will need to be placed on developing the ability of our graduates to evaluate the handicapped through informal evaluation measures. There is a need to break the traditional approach that a teacher should evaluate the class as a whole and promote more individually directed evaluation. As such, future teachers need to select the appropriate method for evaluation, taking into account the student's handicap.

Records of Student Progress

The typical record book found in agricultural classrooms will not be sufficient for recording the progress made by a handicapped student. The teachers observed not only had the traditional record books, but they were also supplementing their record keeping with appropriate charts, graphs, individual projects, audio or video tapes, and subjective assessment forms. Many of the teachers had an individual file folder and/ or a locker for each student and, at any given time, the teacher could tell at a glance exactly how far the student had progressed. The ability to assess the level of competence at any given time was critical, since students were being evaluated on progress since their last assessment and not on the other students' progress.

Our future agricultural teachers must have the ability to develop and use individual assessment forms for measuring the progress of each student. This implies that the teacher be able to develop a record-keeping system that speaks to the unique needs of that handicapped student.

Behavior Management

The first thing that may come to your mind is behavior management of the students. However, the most evident behavior observed was that of the teacher. First, they were extremely well organized. Second, they did very little talking and when they did talk, they spoke in clear, concise terms. They wasted no words. Third, they were tough. By this I mean, they demanded that the students do their best, that students must repeat learning activities not completed correctly or not completed to the degree that the teacher thought the student could master. And fourth, that the handicapped students not be pampered. Furthermore, these teachers had a sense of humor and even used the students' handicapping conditions as a source of light joking. It appeared the best behavior management scheme, when a problem developed, was through the loss of some privilege. If the student did not do something that was expected, then the student would not be allowed to do something else.

Our graduates must have a thorough understanding of sound principles and theories of teaching/learning and be able to implement these while teaching in a humanitarian manner. This includes such abilities as using positive reinforcement, involving students in learning activities, planning thoroughly for each class, problem solving, and showing empathy for each student.

Supportive Assistance

Teachers of the handicapped who were effective use all resources that were available to them. They were not too proud to seek out help from colleagues, special education teachers, guidance counselors, or agencies that exist within the community. In one school, the special education teacher worked with the vocational teacher. The vocational teacher emphasized the vocabulary of a topic under discussion in the vocational class. Study guides and handouts were reviewed by specialists before they were used in the classroom or laboratory. These teachers were aware of what assistance could be secured at school and when appropriate and needed, they did not hesitate to seek out assistance of others.

Our graduates need to be familiar with the federal, state, and local agencies that can lend assistance when working with the handicapped. Furthermore, teachers need to know how to use these agencies effectively and who can be called upon within the local school system for assistance in working with the handicapped.

Facilities

This segment of our educational system is probably one of the biggest concerns of agricultural teachers when faced with teaching a handicapped child. However, for the schools and teachers that I visited, this did not appear to be a concern. The teachers took a very practical approach when dealing with tools, equipment, or facilities.

The teachers studied the student and what tools or equipment were needed for a particular instructional unit. When this level was completed, three alternatives seemed to surface: (1) the student could use the equipment or tool without any modification of the item; or (2) the item could operate its standard safety rules; or (3) with modification of the tool or equipment, the student could use the tool safely and correctly. Some examples of how a simple solution may solve what appears to be a major problem were: a specialized designed tool to operate control levels that were too high or out of reach; lowering the height of one work bench in the laboratory; providing a step stool for certain equipment.

Teachers must be able to assess the ability of each student and determine what limitations might exist for that student. Observations of effective teachers will tend to illustrate to novice teachers or undergraduates that what may appear as a barrier to learning can indeed be overcome with a little ingenuity, creative thinking, or application of common sense.

Conclusion

Throughout this article, characteristics of the teachers who were identified as being effective and what they were doing to make them effective were highlighted. But what do the students say? In some institutions, the students were interviewed with the students, we asked "when you are having a problem understanding or learning something, what kind of things does your teacher do to help you?" Here are what the students said.

He gave me step-by-step directions
Let's keep trying
Showed me examples
Explained, then praised me
Role played
Made each task simple
Demonstrated, then let me practice
Repeats things for me
Wrote on the chalkboard
Gave us notes to take home
Works with us as a group
Lets me think about instructions before I do it
Tries different things
Talks to everyone individually
Answers questions

Perhaps the last implication is that we should never cease to listen to our students when efforts are underway to improve the program. Each answer given by a student in this study represents a pedagogical skill that agricultural teachers should possess.

References


Photographs Needed

The Agricultural Education Magazine needs quality photographs depicting the activities of agricultural educators, their students and their programs.

Clear, well-composed 5 x 7 black and white photographs should be sent to Roger D. Roediger, Picture Editor, Curriculum Materials Service, 254 Agr. Bldg., 6250 Fife Road, Ohio State University, Columbus, Ohio 43210.

A complete explanation should be attached to each photograph. Photographs are not returned unless specifically requested.

FEBRUARY, 1965
Assistships and Fellowships In Agricultural Education

The 1985-86 report by the Publications Committee of the American Association of Teacher Education in Agriculture of assistships and fellowships in agricultural education reflects the reporting of 20 institutions. The findings are published to help prospective graduate students select institutions for study and obtain financial assistance.

Key to Understanding

The information is provided in the following order: Nature of assistships (number available); number of months available during the year; beginning month of employment; amount of work expected; monthly remuneration and other considerations, is as reported by College; is for master's advanced pro- gram or doctoral students; source of the data provided by reporting institutions.

University of Arizona
Research Assistships (2); 9 or 12 months; June or August; one-half time; 20 hours/week; $600 per month; out-of-state tuition waived; master's; department budget; March 1 and 6 months prior to enrollment; Floyd G. McCormick, Department of Agricultural Education, The University of Arizona, Tucson, Arizona 85721.

Clemson University
Teaching Assistship (1); 12 months; May 15; one-half time; $375 per month; master's; April 1; Dr. John H. Rodgers, Head, Agricultural Education Department, P&AS Building, Clemson University, Clemson, South Carolina 29631.

Asstship (1); 9 months; August 15; one-third time; $250 per month and reduced fees; July 1; contact as same above.

Cornell University
Teaching Assistship (Internship (1); 12 months; June or September; 15 hours/week; $7,272 annually; $278.92 bi-weekly; waiver of tuition and fees; master's and doctoral; State funding; April 15; William E. Drake, 206 Stone Hall, Cornell University, Ithaca, New York 14853, telephone (607) 256-2197.

Research Assistships (2); 8 or 12 months; $7,272 (or 12 months $278.92 bi-weekly); waiver of tuition and fees; master's and doctoral; Hatch Act Research Funds; April 1; contact same as above.

University of Florida
Research Assistships (3-5); 9 months; August 14; 2-hour sessions/week; out-of-state fees waived; master's; varies depending upon position; April 1; C. E. Beerman, Department of Agricultural and Extension Education, 305 Relfs Hall, University of Florida, Gainesville, Florida 32611.

University of Idaho
Research Assistship (1); 12 months; July 1; one-half time; 20 hours/week; $600 per month; out-of-state fees waived; master's or doctoral; Agricultural Experiment Station; April 15; John W. Slocum, Department of Agricultural and Extension Education, 225 Morrill Hall, University of Idaho, Moscow, Idaho 83843, telephone (208) 885-6858.

Southern Illinois University Teaching Assistships (4); 12 months; Summer or Fall; 20 hours/week; $570 per month; tuition waiver; April 1; Dr. James Legacy, Department of Agricultural Education and Marketing, Southern Illinois University, Carbondale, Illinois 62901.

Teaching Assistship (1); 9-12 months; Summer or Fall; 20 hours/week; $570 per month; tuition waiver; April 1; contact same as above.

Microcomputer Lab Assistships (2); 9 months; Fall; 20 hours/week; $570.60 per month; tuition waiver; April 1; contact same as above.

Iowa State University
Research Assistships (4); 12 months; July or September; one-half time; 20 hours/week; $625 per month; fee reduction; master's or doctoral; Agricultural Experiment Station; March 1; Dr. David L. Williams, Head, Department of Agricultural Education, Iowa State University, Ames, Iowa 50011.

Fellowships (2); 12 months; September; 20 hours/week; $625 per month; fee paid; master's or doctoral; March 1; USOE for Minorities and Women; contact same as above.

Kansas State University
Teaching Assistship (1); 9 months; August 26; 16 hours/week; $354 per month; out-of-state fees waived; in-state fees reduced; master's or doctoral; Agricultural Experiment Station; Ralph E. Lay, Department of Adult and Occupational Education, Kansas State University, Manhattan, Kansas 66506, telephone (913) 532-5535.

Michigan State University
Teaching Assistships (2); one-half time; 20 hours/week; $692.80 per month plus out-of-state tuition.

Research Assistships (3); one-half time; 20 hours/week; $692.80 per month plus out-of-state tuition.

Fellowship (1); minority students, $8,000 per year plus tuition; all beginning September 15, 1985; Dr. Jake S. Palmquist, Agricultural and Extension Education, 410 Agriculture Hall, Michigan State University, East Lansing, Michigan 48824, telephone (517) 355-6505.

Mississippi State University
Research Assistships (2); 9 or 12 months; July or August; $250-800; out-of-state fees waived; master's and doctoral; Dr. Jasper S. Lee, Department of Agricultural and Extension Education, Post Office Drawer AV, Mississippi State University, Mississippi State, Mississippi 39762, telephone (601) 325-2391.

Teaching Assistship (1); 9 months; August; $250-800; out-of-state fees waived; master's educational specialist, or doctoral; March 1; contact same as above.

Montana State University
Graduate Research Assistship (1); 9 months; $4,500, Montana Agricultural Experiment Station; Max L. Amberg, Head, Agricultural and Industrial Education, Montana State University, Bozeman, Montana 59717.

North Carolina Agricultural and Technical State University
Graduate Assistships (2); 9 months; August; 20 hours/week; $500 per month; master's or doctoral; Agricultural Experiment Station and doctoral, North Carolina Agricultural and Technical State University, Greensboro, North Carolina 27411, telephone (919) 397-7798.

Research Assistships (12-15); 12 or 18 months; $500 per month, doctoral; master's in and out-of-state fees waived; February 1 (foll accept applications year round); Dr. Robert E. Taylor, Executive Director, National Center for Research in Agricultural Education, The Ohio State University, 1960 Kenny Road, Columbus, Ohio 43210, telephone (614) 368-3556.

The Oklahoma State University
Graduate Assistships (2); 18 months; $630-800 per month; out-of-state fees waived; master's; Dr. Robert Terry, Professor and Head, Department of Agricultural Education, Agricultural Hall, Oklahoma State University, Stillwater, Oklahoma 74078, telephone (405) 742-5129.

Teaching Assistship (1); 12 months; September; 20 hours/week; $630-800 per month; out-of-state fees waived; August 1; contact same as above.

Research Assistee (1); 12 months; September; 20 hours/week; $630-800 per month; out-of-state fees waived; August 1; contact same as above.

Graduate Research Assistee (1); 9 months; July or August; $500 per month; out-of-state fees waived; master's; Robert F. Peck, Professor and Head, Department of Agricultural Education, Agricultural Hall, Oklahoma State University, Stillwater, Oklahoma 74078, telephone (405) 742-5129.

The Pennsylvania State University
Teaching and Research Assistships (4); 12 months; August 20; 20 hours/week; $3,195 per semester; remission of fees; out-of-state master's and doctoral; March 1; Dr. Samuel M. Curtis, Head, Department of Agricultural Education and Extension, 102 Arbory Building, University Park, Pennsylvania 16802, telephone (814) 865-5688.

Purdue University
Teaching Assistship (1); 10 months; August; $494 per month; remission of fees; master's or Ph.D.; Dr. James L. Johnson, sprawling in Extranal funding; March 1; Phyllis K. Lowe, Acting Chair, Vocational Education, Purdue University, South Court Campus F-25, West Lafayette, Indiana 47907.

Virginia Polytechnic Institute and State University
Instructional Assistee (1); 12 months; September; 20 hours/week; $1,000 per month; doctoral with 3 years teaching experience; University; March 1; Dr. John Crankilton, Agricultural Education, Room 222 Lane Hall, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.

Assistant (1); 9 months; September 16; 20 hours/week; $625-790 per month; master's or advanced degree; University; March 1; contact same as above.

University of Wisconsin/River Falls
Graduate Assistships (1); 9 months; September; 15-20 hours/week; $470 per month; remission of fees; out-of-state; master's; state funding; April 1; Dr. Richard A. Jen- sen, Chairman, Department of Agricultural Education, University of Wisconsin-River Falls, Wisconsin 54042, telephone (715) 426-3555.
Stories in Pictures

Teaching Strategies to Employ

Small woodworking projects will increase interest.

Computers are effective teaching aids to enhance learning.

Small engine repair may lead to employment opportunities.

Fine tuning is often necessary in order to complete a simple task.

A strong classroom program produces good students.

Students are often encouraged by class members.

(Photographs courtesy of Marvin J. Roundtree, Vocational Agriculture Instructor, Nash Central Junior High School, Nashville, North Carolina 27956.)