ADULT FARM MANAGEMENT — Luther Labun, VP Pacific Region NVATA, goes over record books of Mr. and Mrs. Frank Gemma. Labun, Va-Ag Instructor at Flathead High School, has conducted a computerized farm management and records class of adult farmers for ten years. Looking on is American Farmer Doug Gemma, son of the Frank Gemma's. (Photo from Max Anderson, Department of Agricultural Education, Montana State University)

Each vocational agriculture instructor should have hands-on experience for students on a daily basis. Ron Schell is a First-Year Teacher at North Bend, Nebraska. Mr. Schell demonstrates and then conducts various hands-on experiences for students. One production needs the enthusiasm and frank help from new teachers. If you have a First-Year Teacher as a neighbor — how about paying him a visit? (Photo by Baker Douglas)

Theme—LOOKING AHEAD
In the most unpredictable of times and when doomsday prophets abound in all quarters, this publication is committed to the theme, "Looking Ahead in Vocational Agriculture." Predictions concerning the future of Vocational Education are largely dependent upon the nation's agricultural policy which is threatened by a lack of agricultural aid and political leadership. The demand for more agricultural education is increasing due to the scarcity of agricultural labor and the need for agricultural innovation. Vocational Agriculture, with its blend of practical and academic education, is uniquely positioned to address these challenges.

The agricultural education system in this country is facing a significant challenge. The current economic climate is causing a shift in emphasis towards more practical and applied forms of education. Vocational Agriculture programs are expected to adapt to this changing landscape by focusing on hands-on learning and real-world problem-solving. The agricultural education community must continue to develop new and innovative approaches to teaching and learning that will equip students with the skills needed for success in the agribusiness sector.

Our agricultural, the economic area in which we can best compete with other nations, is supported because of its role in improving the international balance of trade. Agriculture is respected if not supported by the public, in its consumer role, as a result of last year's boycott-withholding confrontation. When agriculture is supported, Vocational Agriculture worth the name will also be supported. Vocational Agriculture, now broadly based upon agricultural and the management of natural resources, has a broad clientele, and therefore a broad direct support than the five percent of the population who are farmers.

Vocational Education in general and Agricultural Education in particular have weathered the accountability movement as part of the larger educational system. This particular spot could dim because scarce funds resulting from a slowed economy could sour and intensify the demand of the public for schools to do more with less resources.

The educational change that is drawing the most attention now and may be a fairly accurate prediction of what is to come on a larger scale is what could be termed as "deskilling of the schools." The teacher may have few if any of the academic credentials that we now require for practical training in schools or on-the-job under the auspices of the school. The teacher may actually quit school but maintain a probation officer type of relationship with a school representative who counsels and helps the student. The most recent and obvious example of this is the trend towards online learning.

(Continued on next page)

WHERE SHOULD VO-AG BE HEADING?

John F. Thompson
Director of Vocational and Adult Education
University of Wisconsin-Madison

In answering the above question, there are three ideas that I would like to stress. It becomes more and more evident to me that we should be striving for a more clearly defined purpose for vocational education in agriculture. What our purpose was very tightly woven to the idea of preparing young men for farm entrepreneurship, we must clearly state what we are doing. In the last decade we have relaxed the objective of farm ownership but have added other purposes in rather haphazard fashion. It is clear that we must have broadened our purpose, so the suggestion is for us to more clearly define what we are striving for. Our programs are intended for what boys and girls expect from them and the contributions that our programs may make to their life style.

Our goals objective is leading many observers to conclude that vocational education in agriculture is all things to all people. I think vocational education in agri-

(Continued on next page)
From the Editor...

evidence of this is the recommendation of the National Commission on the Reform of Secondary Education that compulsory attendance laws only apply to fourteen-year-olds and up, and that an alternative mode of training be provided under school supervision.

In the writings about these new developments, the terms "pupil," "student," and "scholar" have given way to "trainee." The term "training" appears frequently while "education" appears rarely. Indications are that education formerly thought of as being available for the masses may not be for the masses, especially after the eighth year.

Many youth do not want twelve years of formal schoolwork and rebel at being given it or having it forced upon them. Training in an unskilled job and in as unskilled a way as possible is what they want. More and more that is to say that the schools are willing for them to have.

There is one big catch to this. We happen to be trying to make a democracy work and citizens must have more

Guest Editorial...

We cannot tolerate the shifting of ALL such students (disadvantaged) in a local school to the Yo-A program on the weak rationale that all other programs of the school have failed the student.

(Conclusion on page 20)

When agriculture is supported, Vocational Agriculture worthy of the name will also be supported.

When agriculture is supported, Vocational Agriculture worthy of the name will also be supported.

**LET'S MOVE AHEAD WITH PROGRAMS IN AGRICULTURAL EDUCATION**

James F. Dungan, Director
Ohio Agricultural Education Service

Today there are many positive signs that we are moving forward with our total Agricultural Education and FFA programs. We have identified our role in Career Education, and that is to train youth and adults for employment in the agriculture industry and to improve their performance abilities in those fields currently employed. The Awareness and Motivation to the World of Work, the Orientation, and the Exploration components of Career Education are the role of the elementary and secondary classroom teachers. However, we in agriculture must provide these teachers with materials and information for the Agricultural and Natural Resources occupational clusters.

Great strides are being made in many states to identify the professional and technical competencies needed by teachers to plan and conduct quality programs in each of our major instructional areas. We see state vocational education teachers, supervisors, and state staffs identifying the major components of quality programs and establishing standards and criteria to give assurance to the public that quality programs will be conducted.

We teacher education staffs revamped pre-service and in-service training programs to meet the needs of preparing teachers in performing their role in conducting quality programs. State supervisory staffs are changing from the "shadow across the door" concept of supervision to more of a diagnostic role, using management principles and techniques, and research as a basis for the administration of the Agricultural Education and FFA programs in their respective states.

There is the national curriculum development project that will be providing us with national curriculum guides in Career Education and other Vocational Education programs as a vital part of the total educational system. No longer is the public saying that it is good for someone else's children. They want it for their own children.

I have had great issues facing us and we will continue to move forward on the "strong signals" in the future, but we are moving forward. For us to continue to move forward, the following guidelines and suggestions are offered:

1. Every state supervisor and teacher education staff should develop a five-year program which includes goals, quantitative objectives, programs and activities that will give assurance that the goals and objectives will be met. The state staff should assist local teachers in developing their five-year programs.

2. We must develop and conduct quality programs. All of our pre-service and in-service training programs, curriculum development, instructional materials, and methods of administration and supervision must contribute to this effort. These are four major components of quality programs in agricultural education, namely: a) the students, b) the curriculum, c) the facilities and equipment, and most important d) the teacher.

The students who enroll in our programs must have an interest and an aptitude to become employed in the agriculture industry in which they are being trained, and to succeed in that industry. Otherwise, our programs will become exploratory and general, and will not be vocational in nature.

The curriculum must be developed on student performance abilities and skills based on a task analysis of the occupation, or cluster of occupations in which training is being provided.

The school laboratories and shops must provide for student participating experiences which the student will be performing when he is in his occupation. If it is impossible for the school to provide the necessary facilities and equipment, then the student must receive the essential performance skills and abilities through a cooperative, on-the-job training program.

A teacher cannot perform effective instruction and direct the learning process without adequate facilities, equipment, and instructional materials.

3. Agricultural Education research must be directed toward essential program planning activities which will provide the data and information to develop the kind and type of program that the agriculture industry will need to adequately train individuals.
BOOK REVIEW


While I am not entirely disillusioned, I am somewhat reluctant to be enthusiastic about this book. The title is not wrong, and the book is essentially what it is supposed to be. It is a primer on the subject of PFBS.

The book is an introduction to the PFBS curriculum, and it is intended to be used by teachers who are teaching the subject for the first time. It is also a guide for teachers who are already teaching the subject and need some help in organizing their curriculum. It is a good book, and it deserves to be read by all those who are teaching the subject.

In conclusion, I would recommend this book to all those who are teaching the subject of PFBS. It is well-written, and it is a valuable resource for those who are teaching the subject.

THE AGRICULTURAL EDUCATION MARKET

March 1974

199

It will be necessary to develop pre-service and in-service training programs to prepare teachers, administrators, and other educational leaders to train individuals in our classrooms and laboratories, particularly in the off-farm instructional areas.

9. Our 9th and 10th grade Production Agriculture programs must include the basic principles of plant and animal production, basic agricultural mechanics, employment, and management. In the basic production agriculture program, leadership, citizenship, and personal development training programs must not be just one component of the curriculum. They should be integrated into the program, and students should be encouraged to participate in them.

10. We are moving closer to making the FFA an integral part of the educational program in our schools. In the future, students will automatically participate in the local FFA program and activities, and the role of agriculture in our society will be emphasized.

11. As the program progresses, the optimum size of the FFA will increase. The program will include not only a stack of curriculum materials, but also a stack of curriculum materials that will be used to train teachers and administrators. The program will also include a stack of curriculum materials that will be used to train teachers and administrators.

In conclusion, I would recommend this book to all those who are teaching the subject of PFBS. It is well-written, and it is a valuable resource for those who are teaching the subject.

In the fall of 1972, there was much activity at the Agriculture Department of Delaware Hayes High School, Delaware, Ohio. Thirty-three, nine-week sections under the direction of Tom Archer were offered, of which twenty-seven had sufficient enrollment to be taught. The success of the program was due to the enthusiasm and dedication of the instructors involved.

Tom Archer

Agriculture Instructor

Delaware, Ohio

Vocational Agriculture can be a part of a college prep program.

Tom Archer
Agriculture Instructor

Delaware, Ohio

When the JVS opens, there will be relatively little change in the program at Delaware Hayes. The vocational agriculture unit will be transferred to the JVS, but the two units of production will not change. In fact, the local program will enhance the JVS as it will have had three years experience in preparing students for agriculture, horticulture, and agri-mechanics.

Also, the local program at Delaware Hayes, with its age in addition of desired courses, and delusion of courses for which there is no enrollment, can serve as a trial area for possible expansion of JVS programs. For instance, the only JVS that the JVS does not call for a Natural Resources unit. They also have courses in Wildlife Management, Forestry, and Conservation that are not offered at the local level. If the JVS program is successful, then it can be expanded at the local level and interest and success exists, then a Natural Resources unit could be added to the JVS curriculum.

In addition to providing appropriate educational routes for students who need and desire high school vocational education, JVS units could be set up to provide training for employment immediately following graduation. The term system has given reliable evidence for increased enrollment in agriculture. Students who have enrolled in high school agriculture are more likely to enroll in college after high school. One such JVS program was developed for students who needed four-year programs in this style of Vocational Agricultural Education, in which the students will have an introduction to most college curriculum in agriculture. The term system has a better chance than the conventional year-type vocational agriculture program in prov.
RELATIONSHIPS IN TROUBLED TIMES

J. C. Atherton
Teacher Education
Louisiana State University

In its daily operations, the staff emphasizes the individuality of the members and provides a climate which this individuality can manifest and utilize to the benefit of the over-all educational program. A high degree of understanding should be maintained among all concerned. Most important results form a lack of understanding.

The development of a viable program is predicated on the harmonious associations of all school personnel, including the students.

The possibilities of a farm business planning and analysis program as a part of the total program of the Upper Sandusky Vocational Agricultural Department was introduced to me after twenty-eight years of teaching vocational agriculture.

I decided to use the program as a part of my adult education classes and enrolled six farm couples, starting them on farm records. I continued in F.B.P.A. for eight years with last year's work in that area only. I feel the program definitely has a place in the community effort on a part-time or a full-time basis.

There are many farmers who need some help for better record system for their farm businesses. I would judge that 90 per cent have had poor record systems in the past. Most farmers do not realize what their income was for the year, and most of them are making out income tax reports on a cash basis instead of the accrual method. I wish to emphasize that this is not a program just for income tax but for better planning and reference when needed.

F.B.P.A. is a extremely record book program although the first part is developing a record system. The second part is summarizing and analyzing the system and the third is planning the farm businesses for future years as a result of the record analysis. Instructural instructions are being held in each of the three areas as well as for smaller groups where over entries are in similar area. Many have been able to do more for my students developing my time to this program rather than handling it as a part of my adult education classes and high school work.

Adulthood education for bankers at Upper Sandusky. The class and instructors are pictured here.

RESULTS FROM NINE UPPER SANDUSKY FARMS*

<table>
<thead>
<tr>
<th>First Analysis</th>
<th>Last Analysis</th>
<th>Difference</th>
</tr>
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<tbody>
<tr>
<td>Gross Income</td>
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<td>$33,993.22</td>
</tr>
<tr>
<td>Net Farm Income</td>
<td>11,294.38</td>
<td>16,146.66</td>
</tr>
<tr>
<td>Family Labor</td>
<td>9,038.49</td>
<td>10,242.66</td>
</tr>
<tr>
<td>Management Income</td>
<td>52,007.07</td>
<td>73,666.66</td>
</tr>
<tr>
<td>Gross Income per $1,000 Invested</td>
<td>36.29%</td>
<td>33.65%</td>
</tr>
</tbody>
</table>

*Operators with at least five years instruction in F.B.P.A.

The teacher should not overlook contact with the lending agents in the area which include bankers, production credit associations, and savings and loan associations, or any group that lends money to agricultural people. I have had the opportunity to work with two different lending groups in Marion and Wyandot County and have found the leaders very interested in the F.B.P.A. program. It is my observation that the classes have been very helpful to them, and in the long run should prove helpful to their customers. Indirectly it can prove helpful to the instructor because the leaders sometimes promote the F.B.P.A. program to their customers.

(Concluded on page 202)

THE AGRICULTURAL EDUCATION MAGAZINE

MARCH, 1974
OLDER AMERICANS: A New Challenge

N. A. Sheppard
Vocational and Technical Education
Virginia Polytechnic Institute and State University
Blacksburg, Virginia

It is my belief that one of the most significant, socially, and economically handicapped groups to which vocational education has made a valuable contribution is that group often referred to as the "golden years," or perhaps better, the "geriatric set." One fact which may account for this lack of aggressiveness on the part of vocational education personnel throughout the country is uncertainty as to what the role of vocational education could be for these older adults. It is very likely that vocational education has a role to fulfill in serving the needs of elderly people. If so, in what way, form or fashion? Can vocational education indeed make a unique contribution to the elderly? The Vocational Acts would seem to imply that vocational education does have an obligation to serve the aged since many need to upgrade their work skills or learn new skills and many persons 60 years of age or older have special educational handicaps. The question may be asked, "Why education for the aged?" Presently there are some 20 million people in this country who are 65 or older. Nevertheless, the life expectancy of today influences our need to pay closer attention to education for retirement, as well as for the working period of life. An overwhelmingly number of older persons are confronted with pressing problems such as termination of employment, reduction of living standards, increased cost of living, and increased need for leisure time. Thus, the need for employing adults in the labor market for employment for older people has never been more acute.

One of our greatest national reservoirs of human resources are the aged. This reservoir of human resources can be used in the society as varied as the United States. There are reservoirs of vocations in which the aged can engage if given direction and training.

The major study underway at VPI & SU to assess the attitudes and perceptions held, financial and staff resources available, and the degree that the aged are being exposed toward the education of the aged by vocational education personnel in the state has provided an answer to the following concern: "What must be done immediately to meet the vocational training needs of this elderly group via educational programs?"

Effective specially-designed programs can provide a "payoff" in the trade-off of older workers, including the "called hard core or disadvantaged adult." The Norfolk State College Extension Program and the Head Start program have provided evidence that it is a socially public policy to invest in training older persons.

[Concluded on next page]

THE AGRICULTURAL EDUCATION MAGAZINE

[Conclusions of page 202]

Vocational Education Can Make a Difference. What Can we do to help older people? In the first of a series of articles, John B. Summerlin, a former director of the Office of Vocational Rehabilitation of the U.S. Department of Labor, discusses the ways in which vocational rehabilitation can help older people.

As a result of an evaluation of the elementary education curriculum in Nepal, the segment of the program which has been entitled Vocational Education in the past has been changed. The new term or title which the committee has selected is "Practical Arts." Although the term "Practical Arts" is not new, the struggle for a definition which will meet the demands of current society is a constant and continuing one. Each new era modifies the definition and alters the perimeters to meet the changing technical advances in the society in which it is taught.

Practical Arts has been defined as "the identification and development of students' capabilities for learning and applying knowledge and skill to some useful end, with special emphasis on adapting the natural resources and environment to the usefulness of themselves and the society in which they live." This working definition is influenced by the society in which it was developed and the technological changes thereof. The definition has even a greater impact in that it represents an expansion to basic concepts taught. Originally the program in the elementary school system was called Vocational Education, with the emphasis on developing vocational skills which has proved unsuccessful in grades one to three. In a highly agrarian society which is striving for emphasis on Industrial development, courses entitled General Agriculture and Industrial Arts were considered. They were found to be even more restrictive in perimeters than Vocational Education. "Self-Help" often used synonymously with Practical Arts is meant to mean "an act of aiding or providing for one self within their daily lives without depending on the aid of others." The characteristic of Self-Help is a necessary and desirable trait in elementary students. The major limiting factor is that Self-Help provides no direct link to knowledge or skill. Skill-Help is the application of what has already been learned through either the structured or unstructured educational experiences, (i.e., Practical Arts).

The author teaching one of a series of lessons in demonstration to District Education Officers to show how the revised Practical Arts Curriculum could be taught in grades three. The subject is seed germination testing using local materials.

As the program moves to grade two, a higher degree of knowledge and skill will be included in the central core. A survey of the elementary curricula in Nepal will reflect a strong influence of John Dewey's instrumentalism. A continual effort has been made to integrate the practical art curriculum into the language arts, social studies, math, etc., program. The program is designed so that students can be guided in the learning of the elementary curriculum while answering Dewey's question, "What can we do in the way of producing subject matter in the history and science and art that shall have a positive value and real significance in the child's own life?" The drawing from vocational education subject matter areas for the core of the Practical Arts curriculum is an attempt to enrich the elementary curriculum while answering Dewey's question of "To break down the barriers which have unfortunately come to separate the school life from the rest of the every day life of the child?"

There is no use in better position to act as resource persons than the Agriculture, Home Science and Trade and Industrial teachers. The vocational teachers can:

1. Serve as resource persons for the elementary teachers.
2. Guide the teacher to other persons who may act as resource persons.
3. Assist the teachers of Practical Arts in setting up the desired field trips.
4. Share materials and/or recommend sources from which material can be secured.
5. Provide specimens, mock-ups, visual aids or plants for use in the elementary schools.

This is added burden for the already very busy vocational teacher, but consideration must be given to the fact that Practical Arts has access to all of the potential students during a very critical segment of the attaining an educational program. Practical Arts provides an excellent opportunity for the vocational specialist to assist in the elementary program. This will provide elementary education students with an early and clear understanding of the need for trained people in Vocational Education as well as assuring a continued supply of well-informed students selecting vocational occupations as a field of study. (Concluded on next page)
One of the central themes of this article is the importance of agricultural education in preparing students for life on the farm. The author discusses the various ways in which agricultural education can be integrated into the curriculum, including through the use of experiential learning and the integration of technology. The article also highlights the need for agricultural education to be relevant and responsive to the changing needs of the agricultural industry.

Despite the challenges faced by agricultural educators, the author argues that there is a strong foundation for the continued growth and development of agricultural education. By focusing on the needs of students and the agricultural industry, agricultural education can continue to play a vital role in preparing the next generation of farmers and agricultural professionals.

In conclusion, the article emphasizes the importance of agricultural education in preparing students for life on the farm. By integrating experiential learning and technology into the curriculum, agricultural education can remain relevant and responsive to the changing needs of the agricultural industry. With a focus on student needs and industry demands, agricultural education can continue to play a vital role in preparing the next generation of farmers and agricultural professionals.
MAKING SHOP SAFETY RELEVANT TO OCCUPATIONAL SAFETY

William C. Hartman
Vocational Agriculture Teacher
Clayville, Pennsylvania

How often have you heard it said, "School didn't teach me what I really needed to know?" Students of vocational agriculture are facing more diverse types of agricultural occupations than ever before. They are asking if their training will be relevant to their job. Employers are willing to teach technical know-how to new employees, but skills such as safety most are taught each year. Students easily understand the safety concept but encounter difficulty practicing it on the farm, in ag-industry, or in a factory. This is evidenced by statistics of preventable work-related accidents. How well have we related our safety lessons to the actual job situation? Here is the method used at the McCaffrey High School Vo-Ag Department, Clayville, Pennsylvania to relate safety to the real world of work.

The method is a shop safety demerit system such as used in many industries, and which has been presented by the Occupational Safety and Health Act of 1970. Many industries are now using a demerit system to emphasize safe work habits. Accidents cost money in compensation, increased insurance, and fines in the case of negligence. Employees must be safe conscious or face penalties imposed by management. These penalties, usually imposed upon union contracts, may be fines paid by the employee, or loss of work, or loss of pay for a given time period. The shop safety demerit system relates to the actual job situation, and graduates of vocational agriculture will become familiar with policies of employers as to safe work conduct.

Here is the contrast of the shop safety demerit system:

SHOP SAFETY DEMERIT SYSTEM

<table>
<thead>
<tr>
<th>Demerits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Unsafe Practice</td>
</tr>
<tr>
<td>With hand equipment</td>
</tr>
<tr>
<td>Inside shop area</td>
</tr>
<tr>
<td>Good Housekeeping</td>
</tr>
<tr>
<td>Unsafe beach areas while at work</td>
</tr>
<tr>
<td>Unsafe, uneven floors, not drained at work</td>
</tr>
<tr>
<td>Eye Protection</td>
</tr>
<tr>
<td>Worn goggles at all times</td>
</tr>
<tr>
<td>Worn No. 4.30 gray lens in shores-welding</td>
</tr>
<tr>
<td>Worn in No. 12.30 gray lens in electric welding work</td>
</tr>
</tbody>
</table>

Demerits are evaluated and penalties assigned. The violations of one demerit are minor infractions which could be penalized by loss of three shop days upon the third conviction. A second three demerit violations involves the loss of the convaiive shop days. Major violations are the demerit.

(Concluded on page 219)

SPECIALIZED AND GENERALIZED TWO-TECH TEACHER EDUCATION

Dr. George W. Wiegert, Jr.
Teacher Education
University of Tennessee

Since the passage of the Vocational Education Amendments of 1968, there has been some controversy over which of the two types of educational programs, specialized or general, should be recognized as the growing edge of vocational-technical teacher education. This controversy could not be resolved until the Smith-Kenney Act of 1970 provided for the establishment of five-year teacher training programs in vocational agriculture. These programs made significant contributions in developing the technical education program in this country for the agricultural, business, and industrial education in the world. There have never been enough individuals equipped to be successful administrators, teachers, and specialists; enough facilities and other resources to meet all the situations confronting agriculture and the environment in this country. Even though the laws are made, however, in spite of the many limitations and restrictions.

Through the years, specialized programs have operated under the laws, separation of duties for various reasons, but in many cases where two or more specialized programs were authorized within the same type of coordinated administration, the type was limited to facilitate implementation of programs. The specialized area programs were created to meet the specialized vocational needs of the people who wished to profit from the instruction. When there were fewer people in those occupations, and fewer schools were involved, the concept of organizing training programs with individual and manpower needs was less complex and difficult than today.

Large departments of vocational-technical teacher education should be organized to insure the raising of quality and a high degree of efficiency in reaching goals.

Professionals vocational leaders have always been keen on the need to meet the benefits of education the academic world. These professional leaders are the leaders who make the difference in the educational field. They are the leaders who take action to make the difference in the educational field. They are the leaders who take action to make the difference in the educational field.

The population explosion and the increased need for teachers in the educational field have created a need for leaders who can provide specialized training programs. Training in specialized areas and limited-on-the-job vocational experience did not prepare these leaders. Specialists were prepared by new leaders, consequently, with the passage of the VEA of 1968, programs were designed and scheduled to prepare these leaders for broad or across-the-board responsibilities. Comprehensive leadership personnel training programs were created to meet the general professional vocational-technical needs of persons needed for such responsibilities. These programs were not conceived to develop or provide specialized training programs. The programs prepared for teaching professionals served equally well in vocational-technical teacher education programs. Professionals, most of them, are members of the specialized teacher education programs. Teachers in specialized teacher education programs are teachers and supervisors of large departments of vocational-technical teacher education programs (Continued on page 212)
of certain agricultural measures is likely to occur slowly. The concept of "think metric" was first observed several years ago when tractors and equipment manufactured in other countries were imported. Farm managers soon learned that a separate set of wrenches (in the metric system) was required to service this equipment. Likewise, some of this equipment requires recalibrations for calibration and adjustment. In agriculture, the effects of the metric-system equipment was also obvious.

The fact that certain agricultural crops have been converted to the metric system because of research efforts in terms of recommendations for farmers have been converted to the customary system. A definite advantage of "think metric" is that agricultural scientists in nearly all countries can communicate with precision on research findings.

Equipment calibration may pose serious conversion problems, especially in the intervening years when both systems of measurement are used. Used under the customary system, the customary system is based on the inch, foot, yard, and mile per hour. In the metric system, these units are changed, perhaps to centimeters, meters, and kilometers per hour. Farmers who are using equipment designed for the customary measures with recommendations to the metric measures must be able to convert from one system to another.

Marketing of agricultural products will ultimately be affected by the change from customary system to metric system. This area involves produce that is already involved in metric measures. In domestic trade, acceptance of the metric system will probably occur rather slowly. An example of this is the 25.4 kilogram. Sounds strange, doesn’t it? Of course, in terms of price establishment in international trade, many of the current problems would be overcome.

Providing Instruction in Agricultural Education to Meet the Challenge of Metrication

Agricultural education must deal with some of the problems in conversion to the metric system. These include: (1) the education of teachers, supervisors, and teacher educators in the metric system; (2) the preparation of instructional materials which will facilitate the process; (3) the gradual replacement of tools and equipment with metric tools and equipment; and (4) the design of appropriate courses of study to meet the educational needs of students in agriculture.

The education of agricultural education personnel to the metric system will require commitment to metrication and the necessity of building of instructional materials. The problem lies in the fact that agricultural education personnel have little exposure to metrication other than training, perhaps, in elementary metric instructional materials in college courses in physics or chemistry situations related only to scientific and technical uses and usually did not have much relevance to practical applications in agriculture. Programs of workshops are designed to "think metric" is essential if agricultural education is going to assume its rightful role in converting to the metric system.

Instructional materials will play a big role in the speed of conversion to the metric system. Fortunately, since measurements and calculations in instructional materials will be in the metric system. However, during the transition, there is a need for teachers to utilize specialized materials which emphasize conversions from customary to metric measures. This is because the development of students in the use of the metric system of measurement will extend beyond the period required for transition to the metric system.

Most students enrolled in high school agricultural classes today have very little background in the metric system. Agricultural teachers can help these students acquire the needed metric skills before they leave school. In future, students will enter agricultural classes with a greater knowledge of the metric system because instruction will be initiated in the elementary and middle schools.

Tools and equipment in agricultural education laboratories will need to be gradually replaced with equipment in the metric system. This means that for a while both the customary and metric systems will be needed. Some equipment can be converted for metric use by the replacement of appropriate gauges and guides.

Agricultural education programs must begin building appropriate instruction on the metric system into courses of study in agriculture. Such instruction must be for both in-service students and adults. In fact, the needs of adults are even more critical because of the limited opportunity for instruction and the requirements for immediate application of metric skills in the workplace. Most in-service teachers are not converting to other educational opportunities to develop competencies in the use of the metric system, provided the local curricular requirements permit such instruction.

In conclusion, agricultural education should assume an aggressive leadership role in converting to the metric system. This means that we must "think metric" and help students to do likewise. The transition to metric will be gradual but will require that agricultural educators begin now to plan the strategy to follow in making the metric system a reality.

(Harshman from page 208)

two or more points and involve loss of five shop days upon accumulation of five derelicts. A second five demerits points results in suspension of license for one day. A third five derelicts results in suspension of license for two days. A fourth five derelicts results in suspension of license for three days. A fifth five demerits points results in suspension of license for five days. A sixth five derelicts results in suspension of license for ten days. A seventh five derelicts results in suspension of license for twenty days. An eighth five derelicts results in suspension of license for thirty days. An ninth five derelicts results in suspension of license for sixty days. An tenth five derelicts results in suspension of license for one hundred days. An eleventh five derelicts results in suspension of license for two hundred days. An twelfth five derelicts results in suspension of license for four hundred days. An thirteenth five derelicts results in suspension of license for eight hundred days. An fourteenth five derelicts results in suspension of license for sixteen hundred days. An fifteenth five derelicts results in suspension of license for thirty-two hundred days. An sixteenth five derelicts results in suspension of license for sixty-four hundred days. An seventeenth five derelicts results in suspension of license for one hundred-twenty-five hundred days. An eighteenth five derelicts results in suspension of license for two hundred-fifty thousand days. An nineteenth five derelicts results in suspension of license for five hundred thousand days. An twentieth five derelicts results in suspension of license for one million days. An twenty-first five derelicts results in suspension of license for two million days. An twenty-second five derelicts results in suspension of license for four million days. An twenty-third five derelicts results in suspension of license for eight million days. An twenty-fourth five derelicts results in suspension of license for sixteen million days. An twenty-fifth five derelicts results in suspension of license for thirty-two million days. An twenty-sixth five derelicts results in suspension of license for sixty-four million days. An twenty-seventh five derelicts results in suspension of license for one hundred-twenty-five million days. An twenty-eighth five derelicts results in suspension of license for two hundred-fifty million days. An twenty-ninth five derelicts results in suspension of license for four hundred million days. An thirtieth five derelicts results in suspension of license for eight hundred million days. An thirty-first five derelicts results in suspension of license for sixteen hundred million days. An thirty-second five derelicts results in suspension of license for thirty-two hundred million days. An thirty-third five derelicts results in suspension of license for sixty-four hundred million days. An thirty-fourth five derelicts results in suspension of license for one hundred-twenty-five hundred million days. An thirty-fifth five derelicts results in suspension of license for two hundred-fifty thousand million days. An thirty-sixth five derelicts results in suspension of license for four hundred thousand million days. An thirty-seventh five derelicts results in suspension of license for eight hundred thousand million days. An thirty-eighth five derelicts results in suspension of license for sixteen hundred thousand million days. An thirty-ninth five derelicts results in suspension of license for thirty-two hundred thousand million days. An forty-first five derelicts results in suspension of license for sixty-four million million days. An forty-second five derelicts results in suspension of license for one hundred-twenty-five million million days. An forty-third five derelicts results in suspension of license for two hundred-fifty million million days. An forty-fourth five derelicts results in suspension of license for four hundred million million days. An forty-fifth five derelicts results in suspension of license for eight hundred million million days. An forty-sixth five derelicts results in suspension of license for sixteen hundred million million days. An forty-seventh five derelicts results in suspension of license for thirty-two hundred million million days. An forty-eighth five derelicts results in suspension of license for sixty-four hundred million million days. An forty-ninth five derelicts results in suspension of license for one hundred-twenty-five hundred million million days. An fiftieth five derelicts results in suspension of license for two hundred-fifty thousand million million days.

Saftey instruction must be made relative to the student. In the automotive courses, there are conditions of employee safety as a result of Federal legislation. Employees are expected to be safety conscious also. The trainee is to relate safety instruction, to the world of work.

David Lynn Howell
Teacher Educator
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ADJUSTING A VO-AG PROGRAM TO STUDENT NEEDS

MARCH 1978

The Agricultural Education Manager
Meeting a Challenge in Teacher Education

by David L. Armstrong

Approximately one year ago a challenge was accepted by the faculty of Michigan State University for the development of a new major program in Agriculture and Natural Resources Education. It is appropriate and perhaps timely to reflect on the status of this program now that it has been in existence for one year.

The challenge was to develop a new major program in Agriculture and Natural Resources Education. This challenge was accepted by the faculty of Michigan State University and has been met with enthusiasm and dedication.

The program has been designed to provide students with a comprehensive understanding of the natural resources and agricultural systems that sustain our planet. It is built upon a foundation of rigorous academic coursework and practical experience in the field.

The curriculum includes courses in areas such as soil science, water resources management, and wildlife conservation. Students are also required to complete a hands-on research project, giving them the opportunity to apply what they have learned in real-world settings.

The program offers a variety of concentrations, allowing students to tailor their studies to their specific interests and career goals. Graduates of the program are prepared for careers in a wide range of fields, including environmental consulting, natural resource management, and agricultural education.

The success of the program is evident in the increasing number of students who are choosing to major in Agriculture and Natural Resources Education. This is a testament to the faculty's commitment to providing an education that prepares students for success in their future careers.

In conclusion, the challenge that was accepted by the faculty of Michigan State University has been met with success. The Agriculture and Natural Resources Education program is providing students with a comprehensive understanding of the natural resources that sustain our planet, and preparing them for successful careers in a variety of fields.

David L. Armstrong is a faculty member in the Department of Agriculture and Natural Resources Education at Michigan State University.
When the NVATA was organized in 1948, many questioned the wisdom of such an organization devoted exclusively to the interests of the vocational agriculture teachers. Others predicted a faltering effect and anticipated failure within a short period of years. However, the NVATA did survive and today represents an authoritative organization.

The following information is indicative of the many changes instigated through the NVATA and attained since 1948.

- The NVATA represents over 10,000 teachers, supervisors, teacher educators, and student trainees in vocational agriculture.
- The NVATA has national chapters in all 50 states.
- The NVATA has membership in all 50 states.
- The NVATA is recognized as the professional organization for agricultural education and is highly respected.
- The NVATA is the voice of agricultural education.
- The NVATA is the only organization that represents all agricultural education programs.
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- The NVATA is the only organization that represents all agricultural education programs.

The NVATA has been instrumental in the development of many important programs that benefit both students and teachers.

- The NVATA has worked closely with the National Education Association to develop a comprehensive curriculum for agricultural education.
- The NVATA has provided leadership in the development of technology-based learning environments.
- The NVATA has been a strong advocate for increased funding for agricultural education programs.
- The NVATA has played a key role in the development of new and innovative teaching methods.
- The NVATA has provided a platform for teachers to share best practices and collaborate on important issues.

The NVATA continues to evolve and adapt to the changing needs of students and teachers. Through its strong leadership and dedication to its mission, the NVATA will continue to be a vital force in the field of agricultural education.
The future of vocational agriculture must include satisfied customers. The pace is set by many career vocational agriculture teachers. Mary Gowe [photograph] taught for 27 years at Dayton, Washington in an excellent example. Satisfied customers, (right) Jay Fressel, class of '64, took first place in all-hay mechanics in State competition. He now farms with his dad and brother. "We call on Mary all the time," says Jay, who takes care of all the machinery on the farm. (Photos from Alex Crenshaw, Guidance Council for Vocational Education, Olympia, Washington)