STORIES IN PICTURES

by Jasper S. Lee

INSTALLATION OF DUCK NEST — Ray Spangler (Lincoln, Nebraska) is shown installing a portable constructed nest for wood ducks released by the Evening FFA Chapter. (Photo from Dennis Calbas, Agriculture Instructor, Ewing, Nebraska)

YOD-AG STUDENTS OBSERVE CLEANING OF ENGINE — Students at McClary High School (South Carolina) observe another student using a steam cleaner on engine. High Gardner, agriculture teacher, is shown explaining the operation. (Photo from J. Alex Herk, Department of Agricultural Education, Clemson University)

WORKSHOP ON HEB CARCASS EVALUATION — Howard Wilcox (left) and Professor of Animal Science at Minnesota State University. He is shown instructing agriculture teachers during a recent freshman and sophomore workshop on beef carcass evaluation. (Photo from Jimmy McAllister, Minnesota State University)

LAND LABORATORY CATTLE PROJECT — Students at Great, Michigan, are shown receiving hands-on experience in feeding cattle in the land laboratory operated as a part of the vocational agriculture program. (Photo from Paul Bohmig, Michigan State University, and Great Forage, Great, Michigan)

AGRICULTURAL MECHANICS

Agricultural Education
THEME—AGRICULTURAL MECHANICS

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THE GUEST EDITORIAL—

The Problem Approach—Is It Outdated?

G. E. Henderson
Former Executive Director
AAVIM, Athens, Georgia

I have worked with teaching outlines for 24 years in the preparation of educational materials for use by agricultural educators. I am completely sold on the problem approach method of outlining for teaching applied information if the concept is broadened. This is what this article is about. Here are the conditions that have led to that conclusion, along with the proposed changes.

In my former position of providing information services first regionally and latter nationally, it was important that both parties—the teacher educators and the agricultural engineers—be satisfied with the way the information was presented.

Consequently, our first major problem was to establish how teaching materials should be organized. On this important point, the teacher educators and agricultural engineers were in almost complete disagreement. The agricultural engineers maintained that if scientific principles are taught properly, a student should be able to apply these principles whenever and wherever there is occasion to use them. This concept of outlining is what is often called the "scientific approach." In general, the academic approach follows these basic steps:

1. Examine a basic scientific principle.
2. Support it mathematically, chemically, or otherwise.
3. Illustrate it with practical applications.

Teacher educators insisted that for vocational instruction, the information had to be more in the form of an applied approach. They strongly supported the "problem approach" for outlining instructional materials. They pointed out that with this method a teacher does not have the opportunity to demonstrate the information in a more concrete and practical manner.

Among the different states, teacher educators seem to be in general agreement that there are two aspects to the problem approach method of outlining:

Amber State (regional):

The managerial aspect:

Beyond this point, terminology varies widely among educators. And, to some extent, the breakdown of headings under these two aspects tend to vary. To elucidate this confusion, we found the following breakdown for the two aspects to be adequate and quite usable:

1. OPERATIVE ASPECT 1. MANAGERIAL ASPECT

A. Task (problem area)

1. Decision

First Operation (step-by-step procedure)

Second Operation

B. Task

First Operation (etc.)

Second Operation (etc.)

Notice that a "task," under the Operative Aspect, is of equal weight in the outline to that of a "decision" under the Managerial Aspect. Also, an "operation" under the Task is equal in outline weight to a "factor" under the Decision. This means that if you have a Managerial Job with several factors under it, but one needs to be an operation in order to arrive at a decision, all can have the same heading weight.

Here is an example of how it works. Suppose you are preparing a teaching outline on Planning Farm Water Systems and you include the decision "What Water Source to Use." Among the factors you would automatically list for consideration would be (1) the quality of water available from each source, (2) the amount of water available from each source, (3) freedom from pollution, (4) freedom from turbidity, etc. All of these are necessary factors to consider in reaching the decision. But the factor dealing with the quantity of water available may require that actual measurements be made to arrive at the facts for consideration. This then becomes an operative aspect of the problem. The reason: under farm conditions there is usually no evidence at

(Concluded on next page)
hand as to the amount of water available from any one source within the first measuring. This involves step-by-step procedures. The result is a managerial decision based on facts related to several factors and information derived from one actual operation.

The freedom to mix headings of equal weight between the two aspects, as the example showed, does much to simplify the thought process and leads to approaches and methods that are meaningful and understandable. Any almost sizeable subject cannot be outlined exhaustively under any one of the three outline headings. Rather, it is developed as basically one type with support from others. An example is our publication, Planning for Individual Water Systems. Basically, it is a design-type (managerial) publication. But, it includes some operation concepts such as the one mentioned earlier, determining how much water a well will deliver, which influences the decision. It involves a definite set of operating procedures. Then, there are principles involved in the process of designing and developing pumping action, and how different types of units and conditions units work. For the publications to be complete and understandable, all of these three outline procedure had to be included.

Recognizing the three basic outlines and the problem for blending them together, means we now have (1) a blending system for maintaining balance in developing a teaching outline, and (2) a means for handling scientific principles. This interexchange of blending of headings work as it did with the operational and managerial aspect, as shown at the bottom of this page.

Judging from our experience thus far, there is no question in my mind but what we now have available the most effective method of presenting applied information that has been developed to date.

Let's recognize one unfavorable aspect of problem approaches outlined. These outlines have their own self-destratifying capabilities built into them. Here is why: To do our job properly, the manager must be intimately acquainted with his subject, his research must be continuing and complete and he must adjust to the idea that the job is not time consuming if done properly. To some this is too much.

This probably explains why educators who endorse this system of outlining sometimes depart from it—partly because the subjects involved, their own materials, and what administrators cannot understand the amount of time needed to prepare effective teaching outlines and publications.

COMING ISSUES COMING ISSUES COMING ISSUES

JANUARY — Two-Year Post Secondary Programs in Agriculture
FEBRUARY — Education in Agriculture — Our Past and Our Future
MARCH — Programs in Agricultural Supply and Services
APRIL — Career Exploration
MAY — In-Service Education for Agriculture Instructors
JUNE — The Summer Program
DECEMBER — More Effective Teaching
Standards which apply to all industries are called horizontal standards and are applicable to all trades. The employer has met all of these standards, OSHA may not be a problem.

YOU AND THE SCHOOL
You are an employee of a school district, therefore, the employer shall provide for your working conditions.
The students in your classes are not employees but are definitely covered by the previous groups which are classified as the National Consumer Standards. The teacher definitely has a liability responsibility for the student.
The latest regulations entitled General Industry Safety and Health Regulations set a number of rules which refer to conditions found in work places.

Standards 1 and 1
Personal protective equipment is required for the head, face, extremities, respiratory devices, clothing, and other protective barriers and shall be worn on the job. The Respiratory Protection and Air-Purifying Equipment, in Subpart C, are covered by the regulations. The list includes the use of protective clothing, such as coveralls and protective gloves.

Subpart D Walking-Working Surfaces
The employer shall ensure that allI workplaces are free of hazards such as ramps, stairs, and ladders. The employer shall provide guarding for all stairways, steps, and other ladderlike structures.

Subpart E Means of Egress
Means of egress is defined as a continuous and unobstructed way of exit travel from any point in a building. The frequency of exit and emergency signs should be a factor in all buildings, but generally not in the agricultural machinery facility. Ramps and passageways should be maintained with attention paid to the egress of the building. The employer shall be responsible for the maintenance of all fire escapes.

Chisled and open storage areas must be designed to hold at least 15" high, to allow for the storage of large objects such as tractors, trucks, and equipment.

Hand and powered portable tools and other hand held equipment shall be covered by Subpart P. The storage of portable equipment is covered by Subpart P as the area guards for all electric and air-powered hand tools. The regulations also call for an air compressor to be directed to the proper location.

Ladders and portable steps are covered by Subpart P. Portable steps, which are not intended to be used for extended periods of time, shall be stored in a safe location when not in use.

Subpart S Electrical Regulations
The National Electrical Code (NEC) is enforced in agricultural settings. The NEC has several articles dealing with the electrical installation of farm buildings and equipment. The NEC is enforced in agricultural settings. The NEC is enforced in agricultural settings.

A Positive Approach to Instruction in Agricultural Mechanics

John Wright
Ag Mechanics Teacher
Worthington, Minnesota

In teaching Agricultural Mechanics I have questions which are common with generally revolve around the idea of teaching, how to teach it, how much time, and what materials to use.

Let us talk about instruction.

The issue of what to teach is mainly based on the community needs and what is available and what students want to learn. It is important to include as much information as possible. You may not be in a position to have all the equipment and materials but much of the equipment can be used if you learn where to buy it. We have been able to make many valuable pieces of equipment from tractor and implement companies. Small engines are available from stores and individual dealers and large engines are relatively easy to secure.

In our small engine program, we have six school-owned Briggs and Stratton, six Lawn Boy and six Jacobsen engines. We use these in teaching one quarter about small engines. The format is briefing on engine theory and maintenance, test, and troubleshooting. We demonstrate the use of small engines and also provide the students with hands-on experience.

In our large engine program, we have a MIG Tig welder and a gas forge that adds much to our instruction.

Our carpentry and building work involves the construction of saw horses, tool benches, and similar projects for which the students purchase the material. Our building construction is based on buildings constructed for class members, farmers, individuals, or businesses. We have built a MIG Tig welder and a gas forge that adds much to our instruction.
Improved Ag Mechanic Instruction through Modular Design

Richard A. Rauzen
Ag Teacher
Jamestown, New York

Relevance and student participation are major keys to any successful program. At the Hewes Occupational Center in Asheville, New York, we have found both of these essential ingredients in adopting the Modular Design development of the Bureau of Agriculture Education of the New York State Education Department. Each module is taught for 30 hours (15 class days) and includes a set of performance objective sheets which are handed to each student at the beginning of each module.

Once the teacher and the student have these objectives, both are in a good position to assess what is to be attained.

The student knows he only has 15 days to learn the theory of the module and to practice and demonstrate modular objectives.

The teacher also knows that each lesson is to be completed before the end of the first module. If this is not done, all of the objectives he can still work on his skill development during the shop time of the following module.

Each module is graded in one of the major areas—attitudes, work habits and skills. We feel justified in placing a heavy emphasis on attitudes and skills because of the nature of the work and the primary reason why young people fail to get a good job.

The teacher chooses from a number of titles for each module. He then selects his materials for their relevance to the students and knowledge and willingness to train students. The module is graded for choices, work habits and attitudes which are factors in the student's success in their facility's requirements for trainee's.

The overall process is improved through this methodology and students are more likely to develop the proper skills to enable them to leave the shop with new ideas.

Students who intend to work in the field of agriculture should study the agriculture courses offered by the school to prepare themselves for further study.

Continued on next page.
Electricity in Agriculture—An Educational Rather Than a Shocking Experience

Thomas A. Hoerner
Agr. Engr., 8e Ag Ed Departments
Iowa State University

How do you decide what instructional units to include in your agricultural mechanics program? Are your decisions based on equipment and materials in your department and on your background or experiences or are your instructional units based on community needs and priorities of investment and needs of people employed in agriculture and agribusiness?

If you use the latter method, that is, deciding based on the needs of people employed in agriculture, then one of the top three or four important units of instruction will be Electricity in Agriculture.

The purpose of this article is to discuss what I believe should be included in a unit of instruction in the high school agricultural mechanics program.

The high school instructor tells me he does not include electricity in his program for a number of reasons. To name a few he says: (1) I am not educationally prepared to teach electricity, (2) We do not have the equipment, tools and materials in our present ag mechanics lab, (3) Our references on electricity are badly out of date or practically nonexistent and (4) I'm not sure what activities and student laboratory exercises to include in a complete electricity unit.

Let's try to present some alternative solutions to these problems and discuss how this unit might be added to your ag mechanics program.

First, what about teacher preparation? Yes, I agree a course in electricity is not a part of the college preparatory program. This being the case, then I believe it is my role as a teacher educator in agricultural mechanics to organise and conduct an on-service education program on this topic area. This past summer in our district, we started an in-service program for the preparation and upgrading of high school instructors to teach electricity.

Shown in Photo 1 are four instructors completing wiring exercises on a fold-up wiring practice board. The following wiring exercises and circuits can be wired:

1. Wiring the service entrance panel
2. Outside switched light
3. Three and four-way switches to a ceiling light
4. A 240-volt range outlet
5. A 120-volt wired outlet through conduit
6. A 120-volt, split-wired outlet (one side switched) ground outlet

It is recommended to have this type or similar panel for students in groups of three or more to complete the various electrical circuits.

The activity of completing wiring exercises is an important part of the electricity unit; however, in my judgment the total unit begins in the classroom so let's backup and look at the total unit in an educationally sound sequence.

CLASSROOM INSTRUCTION

The following lesson topics should be covered in the classroom phase of this unit:
1. Understanding Electricity and Electrical Terms
2. Measurement of Electricity
3. Determining Amount and Cost of Electricity
4. Maintaining the Light and Wiring System
5. Equipment and Personal Safety in Electric Wiring

Classroom exercises including study and discussion questions and problems should be made available for student use. Classroom exercises for this unit were developed around two AAVIM booklets, "Understanding Electricity and Electrical Terms" and "Maintaining the Light and Wiring System." In my judgment these booklets are excellent for high school students. They are at the correct reading level, well illustrated to follow a good learning sequence. A number of excellent teacher-student demonstrations are shown throughout these booklets. In addition, a set of transparency masters is available for each of the booklets. Thus an excellent aid to the instructor for classroom discussion.

REQUIRED ACTIVITIES

The required activity phase should be either following or integrated with the classroom phase. It should include classroom discussion topics and include hands-on exercises in which the students are directly involved with materials and equipment related to electrical wiring. Two basic types of activities are recommended.

Power Supply Laboratory — The power supply lab involves the student with the voltmeter, ammeter, ohmmeter, wattmeter, kilowattmeter, and watt-hourmeter. Prepared laboratory exercises aid the student in connecting the meters to various loads and in making the various measurements. This laboratory is recommended (Continued on next page).

WIRING PRACTICE LAB I

Switched lamp with feed wire into lamp

The student learns basic wiring principles by completing wiring exercises on a fold-up wiring practice board.

Continued...
The Job Operation Sheet

in Instruction for Agricultural Mechanics

C. O. Jacobs
Teacher Education
University of Arizona

The procedure for developing a job operation sheet involves the construction of an outline of activities which will take the learner through the processes of accomplishing the job in a logical and efficient manner. For pre-engineering education, the job to be performed by the student should be selected to include those skills which are common to a number of related occupations. Each job to be performed by students has a number of operations which are integral part of the task. The sequence of listing the operations in the outline must be consistent with practices and procedures as performed by a skilled person. The flow chart, Fig. 1, suggests the concept of analyzing skill development activities for constructing Job Operation Sheets.

UNIT OF INSTRUCTION

STEPS OF PROCEDURE

Figure 1. Flow Chart of Job Operation Sheet Development.

As illustrated, the Unit of Instruction establishes the base for organizing the instructional thrust. Within each mod are the Jobs which have been selected to accomplish specific skill development processes for student growth. Within each job a number of operations are necessary to attain a finished product. The skills to be developed are integral parts of the operations. Therefore, it follows that to perform an operation...

(Continued on next page)

CONTINUED THE JOB OPERATION SHEET...

UNIT OF INSTRUCTION

STEPS OF PROCEDURE

Figure 1. Flow Chart of Job Operation Sheet Development.

As illustrated, the Unit of Instruction establishes the base for organizing the instructional thrust. Within each mod are the Jobs which have been selected to accomplish specific skill development processes for student growth. Within each job a number of operations are necessary to attain a finished product. The skills to be developed are integral parts of the operations. Therefore, it follows that to perform an operation...

(Continued on next page)
Agricultural Mechanics—Theory and Application

Charlie J. Jones
and
Loyd J. Guidry
Texas A & M University

In our society, industry often takes the lead in making changes. It is good news to report that changes made in industry are often profit oriented, but society as a whole prospers as well from the discoveries of new products and more efficient use of labor and capital. Within the world of education however, change is often not seen as the case. Educators often find themselves busy with their teaching that they have little time to reflect and formulate new techniques for teaching which improve their educational process.

It seems that changes in education come about only when society demands the change. The opposite actually should be true: education should make the changes and filter them back into society. Educators should be quicker to realize that students' needs are not being met. Necessary changes in education should be implemented much sooner and should be generated by forward-looking educational institutions. Performance as a basis for formulating educational objectives has been too slow in coming. Educators generally became embarrassed because it was industrial leaders who brought about the changes through their complaints that graduates were not able to perform, sometimes even simple on-the-job tasks. Neither can the educators within the field of agricultural mechanization be excused from this responsibility. Agricultural mechanization is the field where evaluation performance is inherent; if graduates cannot perform in the field, then this is a strong indictment of this very vital program.

In recent years many educators have expressed a great deal of enthusiasm about hands-on experiences. Hands-on experience is nothing new in the field of agriculture because the Smith-Hughes Act of 1917 which included supervised programs, home visits, student follow-ups and other programs affording students an opportunity for hands-on experiences were very popular. However, within the general academic area of agriculture, the field of agricultural mechanics has always been a discipline demanding the development of manual skills and competencies. As early as 1909 the agricultural educators of Southern Region met at Virginia Polytechnic Institute for a five-day workshop to develop performance-based objectives related generally to agricultural education and specifically to agricultural mechanization. Since that initial meeting, the teachers of agricultural mechanization within the Southern Region have met further to develop specific skills related to those primary objectives developed in the 1909 Virginia meeting.

It is one thing to develop a regional organization of teachers where little actual competition for students is concerned, and yet another thing to develop a state-wide organization in those states where several teacher-education institutions exist. In these states it is very important that an effort be made to allow the agricultural mechanization curriculum to develop in a manner permitting the institutions to complement each other rather than compete. This is particularly true with the community college programs when students transfer into the advanced pursuit of these programs to be applied toward the baccalaureate degree. Agricultural educators must be more broad minded in examining the state programs. In the State of Texas, for example, professors of agricultural mechanics have formed a statewide organization which holds meetings to establish central objectives in the basic agricultural mechanics curriculum. Skill priorities have been developed which should be basic in any agricultural mechanics curriculum regardless of location or structure. A central, basic program must be accepted and implemented in the mechanical agriculture curriculum beyond which the state's educational systems will be mobile to be trained to serve only a small segment of our society. As a corollary to this, everyone should tell the teacher that in order to fulfill performance-based objectives, educators must be brought together, not considered in groups without saying that theory is basic, and one must have the competencies to understand and apply theory. Application, however, is more comprehensive than theory.

As the area of power mechanics continues to immediately recognize the need to go beyond theory. While it already has been granted that theory is basic, in order to be able to completely recondition a tractor or other power implement, theory must be extended into the laboratory and be given the opportunity to be tested and proved. Once theory has been taught, a definite step must be taken in the application of the skill. In examining the area of structures and conveniences, for example, theory is easily taught in a comfortable classroom with mechanical drawings. However, the application of this theory, however, immediately requires space, equipment, capital outlay, and many other factors. Practical labor is also required in the acquisition of the theory. In fact, there is one way to get a finished concrete slab without much physical labor. Only after the slab has been finished can we say that students have had a complete experience in concrete work in relation to the theory of constructing a slab.

Another example in the structure and conveniences area is brought out when we recognize that student buildings can be constructed with ease in theory. Once theory is taken to the point that students can apply their application, and application equates with both capital equipment and labor.

(Cutline on page 130)

Multi-State Workshop
In Ag Mechanics

Alice Lister
Superintendent
Madison, Wisconsin

Fennimore was ideal for this because of its proximity to Iowa and Minnesota. In the spring of 1974, I met with Mr. Bob Jones, Service Manager, John Deere Company, Minneapolis, and we worked out a curriculum for a three-day workshop. The workshop was held in August of 1974. The Service Department of the John Deere Company provided instructional staff, teaching aids, and other educational materials. Three instructors from their service department conducted the workshop which included sessions on repair, maintenance, and operation of farm tractors and implement pumps. Invitations were extended to instructors from Minnesota's Technical Schools. Fifteen of the 15 instructors in attendance were from Minnesota.

Instructors' comments indicated that this type of training could meet their needs and with some changes, suggested by those taking part, another workshop was to be scheduled for 1975. The J. I. Case Company was contacted and a three-day workshop was planned and conducted August 5-7. It was decided to hold it again at the Southwest Wisconsin Technical Institute at Fennimore and to invite the instructors from Iowa and Minnesota. Technical training services included were: Power Shift, 8 hours; Hydraulics, 8 hours; Air Conditioning, 4 hours; and Shop Management, 4 hours. Twenty-three instructors participated twenty-three from Wisconsin, seven from Iowa, two from Minnesota and one each from Maryland and Utah. Southwest Wisconsin Technical Institute was an excellent site because of its central location in the three-state area and the available shop, laboratory, and classroom space. Campground facilities are

(Cutline on page 128)
Determine the Need for In-Service Training in Agricultural Mechanics

William C. West
Vocational Agricultural Teacher
Pine Grove, West Virginia

Lloyd D. Lawrence
Teacher Education
West Virginia University

Agricultural instruction, to be of maximum benefit to students, must be taught by instructors who are well trained and up-to-date in the latest developments. To determine needs and desires of vocational agriculture teachers for in-service training in agricultural mechanics areas, a study was recently conducted in West Virginia. An integral part of the study dealt with teachers' preferences regarding length, time, and location of summer in-service workshops designed to meet expressed needs. Information obtained through questionnaires mailed to the 100 vocational agriculture teachers of the State. Data from 82 usable returned questionnaires were analyzed.

Teachers were asked to indicate their need for additional training in 82 skills listed under the eight major categories of agricultural mechanics work. Skills in which training needs were considered greatest were primarily in agricultural power and electricity.

Ranking of the questionnaire was requested to rank eight agricultural mechanics areas as to priority preference, i.e., which area should be offered first, second, third, etc. in service workshops. A summary of these data is presented in Table 1. Only binary percentages are included in the summary, indicating total percentages of teachers expressing priority for training in the top four categories within each major area. Although need for additional skill training in agricultural mechanics was perceived as somewhat less than for power or electricity, teachers gave top priority to in-service workshops in the area of machinery.

Nearly half the teachers responding indicated a definite need for in-service workshops designed to upgrade skills in agricultural machinery. Another 47 percent would attend if circumstances allowed. Only three teachers, all agriculture teachers, disagreed, and they would not participate.

Sixty-five percent of the respondents expressed a preference for workshops to be held at local high schools within the teacher's own vocational agricultural district. The remainder preferred workshops on one of the two college campuses. Ninety-six percent attached importance to the offering of college credit for workshop attendance.

The following recommendations were made, based on analysis of data obtained, as a means of improving the vocational agriculture teacher's skill in agricultural mechanics:

1. Students enrolled in agricultural education should take the course "Agricultural Engines" and "Welding and Heat Transfer" plus additional nine hours in agricultural mechanics training.

2. One week in-service workshops in agricultural mechanics should be held in local vocational agriculture district high schools during the month of July. College credit should be offered for participation.

3. Workshops should be planned to develop skills in priority areas of greatest perceived needs.

4. In-service training should be practical in nature, and teaching materials used in workshops should be made available for teachers' use in local programs.
Continued Multi-State Workshop

nearly which allowed some instructors to combine vacation with the workshop. Instructors' comments indicate that this provided them with the necessary information and experiences to keep up to-date with changes in the industry. All in attendance said that the areas covered were very pertinent to their needs. Another strong indication of the usefulness of the workshops is that participants were able to spend a great deal of time in problem-solving and directly relate their equipment. They felt the hands-on experience was necessary to supplement the theory received. The opportunity to share experiences with instructors from other states and schools was an additional benefit that was often expressed.

Other areas exist where this type of joint state effort and cooperation with other states could be carried on. Some of these are: farm buildings, diesel fuel injection, harvesting equipment, electrical systems, shop management, equipment demonstration and agriculture instructional skills in general.

Continued Vice President for...

Continued the operation sheet...

In summary, job operation sheets are student oriented; they are designed to serve as a recall device. For the teacher, they are an instrument to assist in directing the learning activities of his instructional program in an organized manner. When prepared by the teacher, they provide a positive method of conducting a job analysis for skill development activities. The format provides a method whereby student teachers are able to develop, on paper, an outline for a teaching demonstration which will be specific to his interests.

Continued Agricultural Mechanics...

pose and labor expense. The transition here from theory to application is incorporated in many skills taught in the completion of a small building from the blueprint to the finished building. It is very interesting for students to read about and to learn the theory of welding. When the bend test is applied however, it is not theory which is measured but application of welding skills which are measured. The weld will either pass or fail, depending upon whether the student has been able to move from theory to application of skills.

We speak often of the student and it is indeed that student who is the final product of our educational process. The student must possess a marketable skill and be able to contribute a measurable input into society. The student must be able to pursue an education through an interaction of the theory taught and proven during application.

Continued George P. Deyo

1901-1961

by Paul Hemp*

George P. Deyo was a national figure during the period, 1959-1961. He pioneered in the development of agricultural programs at the University of Illinois, and was a leader in the agricultural voltage Magazine. He was a frequent contributor to the Agricultural Education Magazine and the American Vocational Journal, and served on the education-committee for both of these publications. His most popular writing topics were on measurement of student learning, content and award, fanning programs, and course planning. He was one of the first teacher educators to develop instructional guides and source units for teacher use. His writings appeared in Science Education, The Phi Delta Kappa, Board of Directors, Curriculum Journal, Professional Education, Michigan Vocational and Better Farming Methods, as well as The American Education Magazine, and The American Vocational Journal. Dr. Deyo also wrote articles on agriculture and agricultural education for The World Book Encyclopedia; The American People's Encyclopedia Yearbook; Yearbook, National Society for the Study of Education; and The Encyclopedia of Educational Research. Dr. Deyo advised many doctoral students who are now widely scattered throughout the world. He was a special adviser to foreign students and out-of-state agriculture programs which were always conducted on a practical basis. He usually scheduled one or more field trips for each course and made extensive use of audio-visual aids. Photograph was one of Dr. Deyo's special hobbies. Many of the photographs used in his books and other writings were ones that he had personally taken.

In Illinois, Dr. Deyo worked closely with teachers to help them develop functional course outlines which were coordinated to supervised practice. He pioneered in the use of course building forms which helped teachers plan an orderly sequence of problems for their high school classes. During the early 1950's, he participated in a series of seminars on planning, evaluation, finance and money management. For several years, teachers of agriculture enrolled in these seminars at night and developed new instructional materials for adult education programs. Dr. Deyo functioned well in the field. He had a special talent for working with teachers in a Field Studies course which he taught for several years. He always visited each class member at his home and made farm visits with the teacher in order to understand the problems of agricultural educators at this level.

Dr. Deyo's research was student-oriented research. The research which he conducted in Illinois covered topics such as the use of school land, practices used by teachers to motivate and expand programs, new developments in agriculture and their implications, and a study of in-service education programs in the... (Concluded on page 141)
A Home Skills Course for College and High School

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Over the past 15 years many changes have taken place in the curricula of agricultural education programs. The new emphasis has affected all programs in vocational education. Most new courses developed in recent years have been directed to a greater degree of specialization. However, some educators have also noted a continuing need for general farm training programs. And has there not been a continuing need for courses in areas that may be called “core skills” courses? Courses that are not specialized in the strictest sense, but rather are designed to give students a basic understanding of the farm operation and the basic skills that are needed to manage a farm. These courses are often referred to as “core skills” courses.

A course entitled “Skills in Agriculture” was developed at the University of Wisconsin in the 1960s. The course was designed to provide students with a basic understanding of the farm operation and the basic skills that are needed to manage a farm. The course was divided into five parts: (1) General Farm Management, (2) Animal Production, (3) Crop Production, (4) Agribusiness, and (5) Agri-environmental Management.

The course was well-received by students and has been continually updated and modified to meet the changing needs of the agricultural industry. Today, “Skills in Agriculture” is offered at many university and technical colleges across the United States. The course has been successful in helping students develop the skills and knowledge needed to succeed in the agricultural industry. It has also been successful in helping students develop a better understanding of the farm operation and the basic skills that are needed to manage a farm.

In some areas, such as automotive tune-up, it is impractical for each student to perform the task because of lack of space and equipment. Therefore, one student brings in the laboratory and the instructor demonstrates the procedure and the use of equipment and the use of manuals for finding specifications.

Sometimes students work in small groups. Students, working in pairs, construct a four-side swimming pool using four common tools of pipework and material and their fittings.

Another type of instructional approach is used in the lab and garden equipment operation program. In this laboratory, students are required to operate equipment such as chain saws, rototillers, large farm tractors, trimmers, hedges, shears, and various lawn mowing equipment. Students also complete laboratory sheets on the various types of drive systems and engines using operators’ manuals as a means of keeping the equipment. Students also answer questions about the equipment by using the manuals, inspection of the machines, and actual operation.

Some parts of the “Home Skills” course cannot be taught by the laboratory type of instruction. They are taught through lectures-discussion and outside assignment techniques. Students are given an opportunity to learn about the various skills and techniques involved in the operation of a farm.

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Central Region. One characteristic which was evident in practically all of Dr. Deyo’s work was the fact that his research was in applicable to local programs. His research was definitely designed and conducted for practitioners in the field.

A study of the contributions of George Deyo would not be complete unless it included reference to him as a person. He was a great teacher because he was a compassionate human being who was dedicated to a life of service. He did not seek fame or fortune but was content with the satisfaction of his work. If honesty, integrity and concern for fellow men are human virtues, then George Deyo was a most exemplary man. It is difficult to measure the influence which any professional person has on his fellow workers and on the teaching profession, but Dr. Deyo’s contribution was of major importance to agricultural educators everywhere. His philosophy is written in the literature and the record of his work is read and studied by the contributions of the past.
The cost of using electricity, and determining the load, are important considerations. There is no absence of pictures and tables to help the reader understand these aspects. A well-informed reader will be in a better position to make the most of his electrical system. For example, the book includes a chapter on "Small Electric Motors." This chapter covers the operation and maintenance of these motors, including their selection, installation, and troubleshooting.

In addition to these chapters, the book also contains a comprehensive glossary of electrical terms and a useful index. Overall, "Understanding Electricity and Electrical Terms" is an excellent resource for anyone looking to gain a deeper understanding of electricity and its practical applications.
Stories in Pictures

by
Jasper S. Lee

Summer Internship in Agricultural Aviation — A student from the University of Minnesota at Crookston is shown performing maintenance on an “Ag Wagon” as part of a 12-week internship in agricultural aviation. (Photo from Forest Beale, University of Minnesota)

Maryland Ag Mechanics Winners — Elise Conroy (left), advisor of the New Hartford (Maryland) FFA Chapter, and Henry (right), chairman of the Agricultural Engineering Society of the University of Maryland, are shown with members of the team in the Maryland Agricultural Mechanics Contest. The team won the North Hartford FFA Chapter. (Photo from University of Maryland)

Diesel Injector Testing — David Beal (left) and David Ball are shown testing a diesel injector in the laboratory of a diesel engine and maintenance class at the University of Minnesota. The students were checking injection pressure, spray pattern, chatter, characteristics, and return leakage. (Photo from Forest Beale, University of Minnesota)

Constructing a Hydraulic Lift — Members of the agricultural mechanics class and Harvey (Minnesota) FFA Chapter are shown constructing a hydraulic lift as part of their agricultural mechanics class instruction. (Photo from Forest Beale, University of Minnesota, John Hall, Hobey, Minnesota)

Two-Year Post Secondary Programs in Agriculture