THEME: Economic Literacy Through Agricultural Education

The National Opinion Poll Reported:

- State Supervision is Effective
- Program Has a Broad Mission
- Department of Education is Best Location
- Colleges of Agriculture Best for Teacher Education
- Funding and Job Demands are Biggest Problems
- Overall Grade is "B"
Editor
JAMES S. LEHR, Mississippi State University, P.O. Box 9792, Mississippi State, MS 39762

Managing Editors
GLEN A. ANDERSON, 1124 North Boulevard, Madisonville, VA 22727

Consulting Editor
THOMAS B. GREENE, Department of Agricultural Education, Oklahoma State University, Stillwater, OK 74078

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This Issue

The September, 1982, issue of the AGRICULTURAL EDUCATION MAGAZINE addresses the theme of "Economic Literacy Through Agricultural Education." Dr. Roland Peterson of the University of Minnesota has served as Editor. His assistance is greatly appreciated.

Much is needed? My only answer would be "an adequate amount." And this is an inadequate answer.

What Competencies Are Needed?

The best approach is to determine the competencies needed in economic literacy and plan courses and curricula accordingly. There are several areas in which economic literacy competencies are needed. (These have not been validated as specifically needed by vo-ag teachers, but they do appear in literature as competencies vo-ag students often need.)

Distinguish between the common economic systems

Describe how capital (free enterprise) functions in the United States

Describe the economic functions of production, exchange, distribution, and consumption

Describe the factors of production in agricultural industry

Explain four ways of doing business

Explain the roles and levels of management in agricultural industry

Explain basic organizational structures

Explain the role of financing in agricultural industry

Describe sources of financing for agricultural industry

Explain the meaning and functions of marketing in agricultural industry

Describe the importance of efficient agricultural marketing

Distinguish between types of markets in agricultural industry

Explain how physical distribution functions in agricultural industry

Explain the role of government in capitalism

Describe the price-making process in capitalism

Explain the role of competition in agricultural industry

JASPER S. LEE, Editor (The Editor also serves as Professor and Dean, Department of Agricultural and Extension Education, Mississippi State University.)
Economic Literacy Through Agricultural Education

Why should vocational agriculture educators concern themselves with the level of economic literacy that students possess when they leave their programs? Probably some would say, "That's not a real concern of mine, I'm too busy teaching and testing." I am more interested in teaching practical skills to help students to prepare for their post-vocational education or to enter the job market. However, for me this is an important issue that we must work on if we are to make vocational agriculture programs more relevant to the needs of modern society.

In his book "Economic Literacy," R. L. Peterson, a teacher of vocational agriculture, states that "Economic literacy is the ability of an individual to understand, interpret, and evaluate economic information and to use this information to make informed decisions." This is a crucial skill for students who are the future leaders of our society.

Farm programs and policies have been under scrutiny in recent years due to the economic downturn. The decrease in farm income has forced many farmers to seek alternative ways to make a living. This has led to an increased interest in economic literacy for both students and educators.

References

The Cover
A "farm bill" is not just about providing money to farmers, it is about ensuring that the farmers have the tools and resources they need to succeed.

Questions and Answers
How We Teach Students to Talk to the Banker and Tax Collector

By Gary Sande and Vern Groot

Editor's Note: The authors are vocational agriculture instructors at Lanesboro High School, Lanesboro, MN 55949.

This article will outline in question-and-answer format how we teach economic literacy to our students in grades 9-12. It should be noted that our program has been evolving over several years with more pieces fitting into place each year. This year's program is not what it was two years ago.

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How We Teach Students to Talk to the Banker and Tax Collector

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years ago. The program is being further refined and updated each year.

Q: When is the unit on SOE records taught?

A: The "Records" unit is the first unit taught to the ninth grade class.

Q: Why should students keep records?

A: Our purposes include the following: (1) to prepare a financial statement and operating record for creditors, (2) to determine the financial operations of each individual's enterprise, (3) to determine the profitability of the student's complete SOE program, (4) to provide the necessary information to have a tax return properly prepared, and (5) to aid in planning for future changes and/or expansion.

It is emphasized that the purpose of keeping records is not to show a profitable and efficient farm/business operation, but to show what is really happening. This means that all information must be accurately recorded and that all expenses must be listed at a realistic market value.

Q: How are SOE records kept on tenth graders?

A: Each member of the ninth grade class works through a sample problem. Our "Sample Student" has two enterprises: (1) Feeder Pig Production and (2) Finished Hog Production. The computer keeps two enterprises on each student: (1) for transfers in and out of each enterprise, depreciation of purchased breeding animals, supplemental and capital inputs, and cost of animals purchased for resale, and other considerations.

Q: What procedure is followed in completing the "Sample Student's" records?

A: The class members enter the entire year's transactions in the following systematic order:

1. Enter the Jan. 1 Opening Inventory
   - Assets:
     - Farm assets (no., wt., market value)
     - Personal assets (cash, savings, property, mortgage, etc.)
     - We try to determine in the field such non-productive items as cars and motorcycles
   - Liabilities (farm and personal)
   - All unpaid bills are red lined to prevent any further entries in the beginning inventory

2. Prepare net worth statement (assets minus liabilities)

3. Enter monthly transactions (Jan.-Dec.):
   - Sales (cash & non-cash)
   - Purchases and expenses (cash & non-cash)
   - Transfers (Out of one enterprise -- into other enterprises -- keeping all numbers, weights, values, the SAM9)
   - Monthly livestock check (born, died, bought, and sold)
   - Feed fed to each enterprise
   - Other income (e.g., hay)
   - Personal spending (Where did the money go?)
   - Cash flow and checkbook balance
   - Close out records (as of Dec. 31)

A: Complete ending inventory, (no., wt., market value)
   - When miscellaneous livestock coins (cash & non-cash) to each enterprise.
   The following are included as misc. expenses: supplies, breeding expenses, repairs, show expenses, feeding, straw, electricity, equipment, and miscellaneous use charges, barn rent, and interest. These items should be given farm market or custom rate value and charged accordingly to give a realistic cost picture.

- Calculate feed costs. Use the market price paid REMEMBER: It is PRIME AND THE BEST and use their real price and costs for all transactions (cash & non-cash)
- Total all columns in the SOE records.
- Transfer ending inventory to next year's records (beginning inventory). Do not charge any amount, weight, or value on their own -- even though the ending inventory must equal next year's beginning inventory. Transfers must occur in the SOE records, and in other -- there can be no "sidebargains" changes in inventories.
- Summarize and analyze the sample student records.

Q: How are the student records summarized and analyzed?

A: In an effort to minimize the time and "agony" of summarizing and analyzing records, our students use a microcomputer for the summary and analysis of their records.

Q: What is included in the summary and analysis?

A: The summary and analysis provides students the following information: (1) work units (accomplishment of a 10 hour day) from each enterprise, (2) total income from each enterprise (sales + value transfer out + ending inventory), (3) total expenses for each enterprise (expenses + value transfer in + beginning inventory), (4) enterprise net return (total income minus total expense), and (5) production and efficiency factors.

Q: What production and efficiency factors are calculated by the computer program?

A: The information varies with the enterprise. The summary and analysis for "Hogs: Feeder Pig Pigs" provides the following information: (1) average number of hogs, (2) average pounds per hog, (3) total cost of feeding and labor for these hogs; (4) total lbs. produced per litter, (5) total value produced per litter, (6) lbs. of feed fed per litter, (7) feed cost per litter, (8) total cost per litter, (9) profit per litter, (10) return over total costs per litter, (11) return for $100 feed fed, (12) pigs born per litter, (13) pigs weaned per litter, (14) percent weight gain, (15) average weight of pig sold/transfered, (16) average price per feeder pig sold/transfered, (17) feed cost per pig sold, (18) total feed costs per feeder pig sold/approximate hourly wage from the enterprise. Work units, total income, total expense, and enterprise net return are also calculated.

Q: How is the student's summary and analysis information used?

A: The sample student's results are compared with the averages of our adult farm management report. This allows the students to compare their efficiencies with those of the full-time farmers and to evaluate the "reasonableness" of the production factors in the sample. The class members then offer suggestions for a "sample student" to consider to improve his net profit and efficiencies.

Q: When do the ninth graders begin keeping their own SOE records?

A: Ninth graders start their records on Oct. 1. They complete their opening inventories with the closing date for the "sample student." They do for themselves what they have just finished doing for the "sample student."

Q: Why do the ninth graders keep SOE records on only a partial year (Sept. or Oct. through Dec. 31)?

A: We have found that having the students start, update, close out, summarize, and analyze their own SOE records in a short time (Sept. or Oct. through Dec. 31) relates entries in their records to the resulting production and efficiency factors. This seems to stimulate the students to do a more accurate job of summarizing and analyzing their own records. Students must keep in mind that "there are no "sidebargains" changes in inventories."
Economic Principles: The Foundation of Economic Understanding

By J.H. Harriot
Editor's Note: Dr. Harriot is Professor of Farm Management, University of Illinois, Urbana, Illinois 61801

B. Opportunity Cost
C. Cost Analysis (fixed, variable)
D. Input Combinations
E. Enterprise Selection
F. Supply and Demand
G. Risk and Uncertainty

Diminishing Returns. This principle applies when all resources are fixed except one, and amounts of that resource vary in the production of a product. As more of the resource is added, the marginal (or additional) output declines either immediately or after an initial stage of increasing marginal output.

Unless prices of the resources (or input) and the product are considered, this principle is said not to be "economic." The reason for the statement is that the indicated changes occur in biology or engineering, without reference to economics. However, by attaching dollars and cents to the resource and product, managers have an important basis for making decisions. The point of highest profit or least loss is where the amount of return just covers the added cost of the extra unit of input.

Opportunity Cost. Many times we may not know the worth of a resource being used in production. The principle of opportunity cost tells us that the cost of a resource used in one way is the return it would bring in its most profitable alternative use. If you use land to grow oats, you cannot grow corn or soybeans at the same time. The opportunity cost of losing the land for use of oats is the net return that corn would bring. Also, the cost of using your labor or time in one way is the net return it would bring in its most profitable alternative use.

An agricultural person can think of the opportunity cost of handling certain products. For example, if he or she is limited in the number of products, the opportunity cost of selling and servicing one product is the net return that would be obtained from selling and servicing the most profitable alternative. The knowledge, therefore, aids in the decision of how to put your resources to best use.

"Equimarginal returns" is a closely related principle that also applies when you consider how to invest a single, limited resource. You allocate the resource among its various uses in such a way that the marginal returns are equal among these uses. With limited funds for nitrogen fertilizer for corn, you get highest net income by allocating the fertilizer in such a way that the marginal returns from the fertilizer are equal for all the fields, and for all acres, for that matter.

Cost Analysis. Fixed costs, sometimes called overhead costs, do not change when production changes. They go just the same whether you produce anything or not. Depreciation, interest, and taxes are examples.

Variable or operating costs, on the other hand, do change with production. Examples are fertilizer, fuel, seed, and labor. The total variable costs increase in production. If more and more units are produced with the same fixed facilities, variable costs tend to increase at a faster rate at higher production levels, in line with the principle of diminishing returns.

When considering fixed and variable costs, farmers will tend to operate in the short run as long as they can cover variable costs and have no better alternative. However, in the long run they must cover all costs, or they will not invest in new plants. Likewise, an agricultural manager uses cost analysis in the feed manufacturing business. The business tends to operate in the short run as long as all variable costs are covered. However, in the long run fixed costs must also be covered; for example, the plant may need to be modernized with new equipment or the facilities expanded. With certain costs fixed, operating near plant capacity means lower costs per unit than with less output.

Input Combinations. The principle of resource substitution provides a guide for choosing amounts of inputs or resources to use. It states that deciding how much of each of two variable resources to use in producing a constant amount of product, or which resource to use when one substitutes entirely for another.

Some examples are: substitution of one feed for another, capital for labor, or chemical weed control for cultivation. A given amount of product is assumed in each case, with all other resources fixed, except the ones involved in the decision. By "focusing" out other considerations, the use of this and other economic principles gives you "control" as you might have by keeping extraneous materials out of a chemistry experiment.

Assuming a constant amount of product, it pays to substitute one resource or input for another as long as the value of the resource replaced is greater than the value (price times amount) of the resource added, for we are trying to reduce costs. Tables have been set up to show such savings for changes in the corn-to-supplement ratio for finishing hogs and hay-grain combinations in feeding cattle for producing milk. The author encourages farmers using this principle, especially when the price of one feed changed substantially in relation to another.

Enterprise Selection. The principle of product substitution is an important one to use in making decisions on enterprise selection. The relationships among enterprises can be complementary, supplementary, or competitive. At least some resources are assumed to be fixed in product cost substitution. If all three relationships occur when the second product is added, the complementary relationship occurs first. It occurs with or to a by-product aiding production or a product making use of otherwise unused resources. For example, over time the growing of legumes may increase grain production on some soils. Thus, hay and grain production both increase. When one product (Continued on Page 10)
The Foundation of Economic Understanding

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(grain) stays constant and the other (hay) increases, the relationship is supplementary; if one product decreases while the other increases, the relationship is competitive. Allocation requirements in a competitive environment mean that the production of both products has been expanded to a more favorable point. In the competitive arena, the price of one depends upon the price of the other (or income above direct costs) for the product.

The proportion of corn and soybeans to grow on a farm is another example related to this principle. Besides helping in the decision of which crops to grow, it can also help in making a choice among livestock enterprises or among crops and livestock.

The principle of comparative advantage tells us that a business or region produces whatever it has the greatest advantage for producing and trades these products for those best produced by other businesses or regions. Many factors, both on the resource side and the demand side, tend to influence which products are most favorable. The net income for each product is probably the best indication.

Supply and Demand. It is the interaction of all demand and supply factors that results in price formulation or change. Price is determined where supply and demand meet. Over a period of time, there is a change in population, income, or tastes, etc., demand is increased. The demand curve "shifts" to the right, and consumers will compete more for the existing supply and bid up prices. Producers consider these higher prices as the opportunity for more profit and increase production. The opposite situation would result from a decrease in population, income, or tastes, etc., demand decreased. The demand curve "shifts" to the left, and decreased demand will result as well.

Economic Principle/Decision Making

The Tie That Binds

Fertilizer for Corn. According to the FFA ritual, corn is grown in every state in the Union. So what better example of diminishing returns than nitrogen used on corn? It is very important for a manager or operator to know the relationship between fertilizer and yield. If corn is not important in your state, it should be simple to come up with another example.)

The principle applies as we apply such amounts that the marginal cost of fertilizer is just equal to the value of the additional corn. We know the difficulties in predicting the outcome for a specific season, but the manager or operator who can apply the principle has a much better chance to come close to the most profitable point than one who cannot.

There are many times farmers can apply this principle. If they are short on labor, equipment to save labor is suggested, but remember that it comes at a cost. Enough labor saved to warrant buying labor equipment! If enough labor is available and equipment is not to be expanded, farmers may decide to forego the equipment. Some comparison has been made of the advantages of the additional labor and the value of the labor saved. This principle has application in all businesses, including those concerned with feed, seed, and fertilizer. Just how much money can be spent on equipment to save labor in the plant or store?

Which Crop To Grow? By the principle of opportunity cost, we know that the cost of producing one crop relative to another return we would get from its most profitable alternative use. The wheat is profitable, but the principle of opportunity cost is designed to tell whether it is most profitable.

The principles serve as short-cuts and, in so doing, help tell us which information to gather and provide a means of analyzing alternatives. Principles are thus very important in making the right decisions which result in increased income.

Making Principles Come Alive Through Agriculture Instruction

The key to teaching principles is to use a generous amount of real-world situations to force students to know full well how to draw all the curves yourself! Class preparation may be even more important here than in other areas. Many teachers are unable to find the "best point." Perhaps a multiple choice question (with one correct answer) can be used.

Students can choose sides and work as teams. A "debate" type of instruction may fit certain situations. The question as to whether a certain principle is relevant to a situation can be decided. The instructor needs to be well grounded and know all the assumptions inherent in the principle; for example, diminishing returns assumes that one more unit of a variable input will increase the output of all other inputs are fixed. With student knowledge incomplete, they may feel that some other inputs are varying and that the principle is not working as it should.

Teachers can teach the principles of supply and demand by having students bid on small items and then discussing why each person was willing to bid that amount. You as a teacher, can work out innovative ways to make principles instruction veible.

The establishment of state and national contests has provided a great stimulus toward teaching principles in secondary schools. The preparation for these contests has resulted in many local and sectional or district contests. It is true that many schools are very important in its own right, but contests can aid in this kind of instruction, just as the teaching of livestock and dairy selection is aided by livestock contests.

Records from students' home farms or farm programs furnish good material for teaching principles. A type of question might be: "According to the principle of diminishing returns, should you use more fertilizer on your corn crop?"

Other sample questions are: "With a limited amount of corn available, should you feed your hogs to heavier weights and your cattle to lighter weights?" That question would be all right if the assumption were made about inputs and output. This question shows the importance of the concept of opportunity cost. "Should I have fed more grain and less hay to my steers?" or "Should I feed more low priced grain and less supplement to my finishing hogs?" The latter two questions illustrate resource substitution.

"I have continuous corn but no soybeans. Should I grow both corn and soybeans and perhaps gain some benefit?" illustrates the principle of product substitution.

With the rapid development of microcomputers and programs related to agriculture, more programs will undoubtedly be developed to serve directly as a means of teaching economic principles. Many other programs have the use of principles implied or embedded in their results.

The benefits of visiting successful businesses can be used to illustrate economic principles in use by farmers and agricultural managers.

With problems of increased travel cost and time limiting the number of field trips, want to use an amplified telephone and visual projection equipment (or video tapes, for that matter) so that the person can be interviewed without the necessity of a field trip. Teachers need to plan the program thoroughly with the farmer or manager ahead of the telephone "visit." By the use of this method, a class of students and farm principles applications by "visiting" a farm or other agricultural miles away.

Many opportunities exist for teaching economic principles to secondary and postsecondary students. The effective teacher who understands their importance will find them an essential basis for instruction.

Keeping Score: Emphasizing Farm Business Management Education

On behalf of the National FFA Farm Business Management Contest Committees, we appreciate the opportunity to present in this article a relevant facet of the vocational agriculture curriculum: farm business management education.

This commitment to emphasize farm business management education in all vocational agriculture programs across this nation. We believe in vocational education's role in preparing students for strong convictions about what it should be! We believe we must teach students agriculture vocationally! We must serve the educational and occupational needs of our students.

What Are We About?

May we review briefly with you what we are about. As with all vocational education programs, vocational agriculture has characteristics which distinguish it from general education. It is a program, not just a class. Typically, the instructional program includes technical agriculture, agricultural mechanics, leadership development (FFA) and experiences.
Keeping Score: Emphasizing Farm Business Management Education

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Each of the components of a total program has a necessary and recognised purpose in preparing students for entry-level employment in agriculture. It is our opinion that all components must emphasize the total program concept with each part complimenting and supplementing the other parts. If any part is lacking, the program will lack the necessary effectiveness. The same holds true for the curriculum. There must be balance. Quality farm business management instruction strengthens the total program.

Vocational agriculture is unique in the fact that special educational methods are used to make the educational process more effective and more meaningful in preparing students for occupations in agriculture. All four components become teaching tools in the hands of a skilled teacher to help students achieve the major program objectives of vocational agriculture.

The major program objectives of vocational education in agriculture are:

1. To develop agricultural competencies (knowledge, skills, attitudes) needed by individuals engaged in or preparing to engage in production agriculture and agribusiness occupations.
2. To develop an awareness of career opportunities in agriculture and the preparation needed to enter and progress in agricultural occupations.
3. To develop abilities in human relations which are essential in agricultural occupations.
4. To develop the abilities needed to exercise and follow effective leadership in fulfilling occupational, social, and civic responsibilities.

Few of us would disagree with these program objectives. Vocational agriculture is an integral part of public school education. We profess to be a part of, not a part from, general education. We strongly support the development of basic skills in our students, however, we believe just as strongly in the development of economic skills. Those skills which help students:

- Make money
- Secure a job
- Seek economic independence
- Obtain job satisfaction

This, we believe, is what we are all about!

How Well Are We Accomplishing Our Task?

In order for us to evaluate our efforts in the light of the kind of instructional program we are charged to deliver, we must consider:

- What our critics are saying about our programs
- What competencies are required for success in the industry
- What societal needs must be met
- What our graduates are saying about the program

Our Critics. Nationally, we are hearing vocational education critics condemn us for preparing students for jobs which are constantly in short supply. (There is plenty of labor, but a consistent shortage of managerial skills.) In the past, we have done an excellent job of teaching new approved production practices and technology; but too often we have failed to teach our students the point of diminishing economic returns. We have placed major emphasis, in too many instances, upon physical production and neglected to develop an appreciation for, and understanding of, economic production.

Every complete of a vocational agriculture program should be competent in the areas of record keeping and analysis, partial budgeting and linear programming, and computerized business analysis. As vocational agriculture teachers, we are committing a cardinal sin if we fail to prepare our students for their point of diminishing economic returns. We must begin teaching early about the economic aspects of farm business, as a minimum.

Needless to say, focusing in on instruction addressing the economics of production agriculture is an agronomic challenge. We must start now to strengthen the curriculum content on farm business management if we are to meet the needs of our students to have competence in this area.

Over the years, hundreds of follow-up studies have been conducted to ferret out what graduates of vocational agriculture programs suggest or recommend for improving instructional programs. What have and do these studies reveal?

Graduates tell us they want:
1. more farm management instruction
2. more emphasis upon record keeping
3. more instruction on business analysis

We are addressing these needs and using business management tools, including budgeting, financing and timely marketing skills.

For the most part, the recommendations are not at or near the bottom of the list of their recommendations, but at or near the top. We are addressing these needs more and using business management tools, including budgeting, financing, and timely marketing skills.

We fully realize the difficulty in motivating high school students to be enthusiastic about record keeping. Is this the cross of the problem? Have we too often taught our students how to keep records (which most of us hate to do) and failed to teach them how to use records? Have we failed to show them the value which can be derived from complete, accurate records? In essence, we have taught the "facts of record keeping" but failed to teach them the "principles of record keeping."

In strengthening the curriculum content in farm business management, let's keep in mind the "built-in" program features we have going for us in vocational agriculture:

1. The total program concept is built upon sound educational principles. Inherent within this concept are two of the most powerful teaching tools ever conceived — FFA and SOE programs.
2. Vocational emphasis stresses "learning by doing." Our instruction must be meaningful, related to the work environment. It helps students overcome those shortcomings inhibiting the present program.
3. Community-based instruction focuses upon real life agricultural situations.
4. Problem-solving teaching stresses mental skill development. It assists students in developing the ability to think, reason, and make decisions. Teaching students how to apply this decision-making process can be most easily and effectively achieved through the use of real farm management situations and problems.

Emphasis: Where Emphasis is Needed

It is obvious why we must place increased emphasis upon farm business management education in secondary vocational agriculture programs. Today's agriculture dictates quality instruction in this area because of the economic times we are experiencing.

1. Higher interest costs necessitate the application of sound financial management practices.
2. Inflated capitalization costs for all production inputs require the use of opportunity cost principles.
3. Increased inflation reduces the profit margin.

Examples could be cited which reflect the importance of farm business management education for our students. Each and every one of us must be fully committed to do something and do it well. We can do something solid, solidly, and with the commitment of the part of all of us for a renewed emphasis on this vital area of instruction if we are to prepare future farmers and agribusiness persons for a future in American agriculture. One of the most important skills agricultural educators can pass to our students today is the ability to use the curriculum in the future in order to survive in their future endeavors. If we are really serious, we should include some dimension of farm business management in all the other FFA contests.

The "bottom line" for all of us is to plan and deliver programs of excellence best suited to meet the occupational and educational needs of our students — emphasizing farm business management education would be a good start!
A Man Ought To Know...

The importance of a knowledge of economics to the well being of agriculturists is not a new idea. About 350 years before the birth of Christ, Aristotle wrote:

"The useful arts of wealth getting are, first, the knowledge of livestock; — which are most profitable, and when, and how. As, for example, what sort of horses or oxen, or other animals are most likely to give a return. A man ought to know which of these pay better than others, and which pay best in particular places, for some do better in one place and some in another."

Modern farmers still ascribe to the idea that "A man ought to know...", even though these expressions may take different forms. When a large sample of adult farm management program enrollees was asked why they joined the education program, they responded:

"To keep a better set of records from which to analyze my operation and to find places where improvement may be of benefit to me."

"To keep me informed and up-to-date with this rapid changing business and to help me do a better job."

"I can have a sounder basis for making decisions and to plan out my operation to become more efficient."

"Bank insisted on the kind of record this program provides. Needed help in planting and operating the farm. Realized I was being underpriced."

"We hope to become better farmers, make more profit and work our children into the farm program."

"To get a better hold or control over what the business was really doing, what enterprises were more profitable, where the money was coming from and where it was going."

"Needed an accurate record system and analysis program which in turn added more incentive to my career as a farmer."

"To find out if I was making money or just swapping dollars."

"As a young farmer just starting a business I felt a need for enterprise and whole operation assistance and analysis."

"To get help in setting up a good bookkeeping system and to obtain source of information that is proven."

"In farming today, how can we manage without some professional help. By professional help we can't mean the vet or feed, or local and retail colleges."

"The responses are on the general theme "A man ought to know.""

There can be no doubt that understanding economics is becoming increasingly important to farm survival. Rural print shops have had a booming business in printing sale bills for farmer programs until no longer cope with the realities of today's economy. Certainly not all farmers who have seen their farm go over the auction block were the victims of their own failure to understand economics. The vagaries of luck or misfortune and the toll of age or ill health have been substantial contributors. Some understood economics all too well, and used the principles of minimizing losses, recognizing that the economic times did not contribute to maximizing profit. But for many, the reasons were clearly attributable to a failure to understand the operation and impact of economic law.

The importance of understanding economic laws, principles and concepts is best described in the consequences of the failure to understand. The consequences are real and dramatic. At best the results are a failure to make planned progress; at worst complete business failure. In between lies the shuttered plant, the unfilled dreams and the constant stress associated with unsatisfactory performance.

Building Economic Understanding

Unfortunately, there is no "quick fix" to creating a producer force that has a good grasp of economic principles and concepts. Because the job is not easy is no reason to shirk it. Vocational agriculture teachers have an excellent opportunity to build the next generation of producers who understand the economic factors of production as well as the technical aspects of the production process.licting programs for adults and young farmers permits, the task can be expanded to those generations already "in the funnel."

Economic literacy needs to start in the classroom with a sound background between technical practice and economic consequences. An idea and practice introduced is incomplete until the student has considered the economic impact — both short and long term — of the adoption of the practice in the farm operation.

It may be a good idea to develop skill in selecting a dairy cow that is Bread close to the ideal type. It is even a better idea to understand the economic consequences of making the right selection. When knowledge of selection is transferred to the bidding block at the local auction, understanding the economic principles that dictate how much one can afford to pay to gain a few points on the dairy cow scorecard can contribute to a successful decision.

Failure to marry the technical skill of selection to the economic consequences of the application of the skill can only lead to haphazard decision making and haphazard decisions lead inevitably again to the auction block, as said, not bought.

One of us must be lulled into the idea that teaching a unit on recordkeeping is adequate attention to economic literacy. While such a unit may develop responsible skills in accounting, the record itself is only one of the tools in the decision process. It is the use made of the record and the interpretation of the summary or analysis of the record that is a true mark of economic understanding. Understanding the economic principles, gaining skills in economic planning and honing skills in evaluating decisions are all important to success.

It is fortunate that vo-ag programs offer so many opportunities to demonstrate the acquisition of economic skills. The most recent addition to the national farm management contest where students can demonstrate their grasp of the planning and evaluating functions of management. The award structure of the FFA with the progressive degrees of membership and the proficiency award system offers excellent vehicles for students to demonstrate that they do in fact understand the basic concepts of keeping track and reporting their economic progress and accomplishment.

Many fail the test of economic understanding. Even simple numerical tasks like billeting the national report on a SOD program against personal spending and gain in net worth are inaccurate or incomplete.

How well these future farmers and agribusiness operators survive when the future task is not with small enterprises but is instead with major businesses representing several hundred thousand in cash flow? A venture into the economic world of entrepreneurship on or off the farm is not recommended for the timid nor the faint of heart. Such a venture should not even be considered an alternative for the economic illiterate.

Keeping Clients Up To Date

It would be foolishly to assume that economic understanding once learned is forever remembered. People forget. Given the best of economic preparation, the time span between learning and application may prompt forgetting. The lack of opportunity to practice, our changing economic conditions and the development of new economic concepts suggest that practicing farmers, both young and old, will have a continued need to expand upon their economic knowledge. The young farmer and adult farmer must take advantage of the educational tools available to them for instruction. But we must exercise the same caution with this group of practicing entrepreneurs as we exercise in the secondary and postsecondary classroom: introduction of technology without economic understanding will lead to haphazard decision making.

Many states have instituted excellent programs of young and adult farmer instruction. Those programs which base their effort on solving the economic decisions of farmers through giving management instruction heavily loaded with attention to economics and economic decision making will make the grade. Programs which concentrate only on technology or technology without regard to its ultimate consequences. There is however, no such thing as an isolated decision. Each decision has a multitude of economic consequences that must be carefully considered.

Take, for example, the decision to upgrade a combine from a 4 row corn head to one that will handle a 6 row head. That seems like a simple decision. It has well-defined economic consequences. For the ability to finance the purchase and make the arrangements for debt retirement and the improved productivity of the worker. But here is a sample of the other questions that must be answered, each with some economic consequence:

Is the new combine compatible with the planting equipment?

Will the new combine fit in the assigned storage space?

Are field roads, gates, bridges, etc., of adequate size to accommodate the machinery?

Are field sizes and shapes appropriate for good field efficiency with the larger machine?

Is equipment for grain handling, drying and storage adequate to meet the expanded field capacity of the new machine?

Will the savings due to timelessness offset the increased fixed costs of ownership?

If harvest time can be shortened, what productive use can be made of the time that is saved?

The list is not complete, but serves to illustrate that a simple decision to make a machine purchase is far from an isolated decision.

Using the New Tools for Management

If you don't use the advisements and listen to predictions, you no doubt believe that 10 years from now the majority of farmers will have their own personal computer. You may be right. If you do use the advisements and listen to predictions this event will measurably improve economic literacy you will probably

(The end of the page was not provided.)
A Man Ought to Know . . .  

(Continued from Page 15)

be wrong. While the new tools for management have the potential for improving the understanding of economics, the task must be approached with caution. In fact, computer use has the potential of decreasing economic understanding. It is no longer necessary to understand the concepts to arrive at a solution. Given raw data which the farmer may have available, the software program translates it into a solution, without any intervention on the part of the user.

Teachers must exercise great caution that they do not slip into the trap of overlooking economic understanding. If computer use is to enhance the economic literacy of users, then we must use care that we do not substitute solutions for economic knowledge. When used in the classroom for drill and practice, simulations and problem solving the computer is an excellent tool. But you may have to ask yourself, "Could your clients still arrive at a sound solution if the computer was not there?" If we have trained only button pushers, chances are great that we have done little to build a better base of economic understanding.

Certainly, "A man ought to know . . . But how do we build his competence to know? We have all of the tools: organized instruction, an award system built on economic results, contact with young farmers and adults who want to know, and the modern electronic tools that can make the job easier. Our task is to rethink our approach to instruction so that the base of economic knowledge has at least equal priority with the knowledge of technology and practice. We don't necessarily have to teach different things; we need to teach things differently.

REFERENCE

Arielle, Poynter, Issues 1, Great Books

THEME

Why Vo-Ag Must Build An Understanding of Economics

Farming has become big business. Producers control more and more assets. Farmers, like their business urban counterparts, must be concerned with interest rates, cash flow, foreign competition and earning a return on investment. An understanding of economics is as important to farmers as is an understanding of agriculture production.

Economic understanding helps play a vital role in determining what to produce and how to market the product. Let us look at some of the economics involved in grain marketing.

The grain industry — which involves the moving of grain off the farm, through various stages of processing, and ultimately into the hands of the consumer — is handling an ever-increasing volume. It wasn't long ago when grain farming was considered a subsistence way of life, and grain seldom left the boundaries of the farm where it was grown. Today, grain grown in the United States goes to all parts of the world where it is fed to livestock, processed into consumer goods or used to meet an increasing demand.

As the demand for agricultural commodities continues to grow, more must be produced and marketed. Also, the need for more education in economic understanding and marketing becomes more important. An increased educational effort is not only necessary at the farm level, but throughout the entire marketing chain. It is an opportunity for vo-ag instructors to reach students, both rural and urban youth, who are prospective employees in the chain of producing and marketing agriculture commodities.

Historically, most of the educational efforts of vo-ag

have been production oriented. The agricultural research and education system has turned the American farmer into the largest and most efficient producer in the world. In the past this production emphasis may have been justified, since marketing had little effect on farm profits because prices were relatively stable, volumes were small and credit needs were modest. In today's era of worldwide market fluctuating prices and high interest rates, marketing decisions probably have a much larger effect on farm income than many production decisions. The need for marketing strategies and techniques is already great, and the need will continue in the future. Agriculture education must be directed to meet this need and fill the "marketing gap" not considered in earlier years.

It would be an injustice to the vo-ag student if this increased marketing instruction were limited to the various "how-to-buy or sell" steps. Marketing includes an attempt to explain some of the facets of the industry itself. Developing a background and including insight on some of the economics of the market will be very valuable in making intelligent marketing decisions. Combining off-farm awareness and on-farm alternatives gives the marketer a more realistic picture of the industry.

Marketing: Complex, But Necessary

As mentioned earlier, the grain marketing system is complex. Consider the path that a bushel of wheat can take to the consumer: it goes from the farm to the grain elevator, to the country elevator, to the commercial grain company, to the miller, to the baker, and finally, it is in the form of an edible product. Or it can be fed to livestock and marketed as meat or be exported to anywhere in the world. All of these processes are combined with an intricate transportation system that moves the products at the different stages of production to all the domestic and world markets. It is a highly competitive marketing chain.

Competition eliminates any excessive steps when more efficient methods of handling and processing are developed. Each step is necessary and serves the purpose of either transforming the raw product into its final form or having the product in the right place at the right time for the consumer. Some feel it is a costly process, but when one considers the cost of a single loaf of bread, the cost is not prohibitive, just outstanding. Rather it is amazing that such a complex task is accomplished at any cost.

Many people look upon those who are engaged in the marketing of grain as the cattle drivers who are guiding, transporting, storing, arranging for the transfer of title, and advancing and collecting credit, as being parasitic on those who really produce the goods. Farmers often decry the "profits of middlemen" because they feel that farmers alone produce the materials from which the consumer's food is made. However, what is lost on the farm has not added economic value until it moves from the farm and is processed. The farmer who produces a bushel of wheat in North Dakota has not produced a croissant for the businessman in New York City. Many things must be done to the wheat before it is bread in New York. The services that marketing provide are productive, and no marketing education must convey the idea that marketing services help sell what the farmer produces.

Marketing: Why So Important?

The reason for marketing and economic understanding has been eliminated. Today's grain farmers must be considered as "price variability." If grain prices were not fluctuating widely, it would not make much difference what strategies the farmer would devise. Current market situations, and marketing becomes all important. For example, the Minneapolis 1982 May wheat futures had a spread of $1.00 per bushel for the life of the contract. Why are prices fluctuating now so much more than in the past? The answer lies in the ever-expanding nature of the industry.

Prices reflect the balance of supply and demand, and today supply and demand factors come from all over the world. There are more variables influencing supply and demand now than there have been in the past. Weather, population growth, currency exchange rates, diets, political events, government production and sales programs and many other factors influence prices, not only in our own country but in all the nations in the world.

For example, if there is a drought in Brazil and soybean production falls, the value of U.S. soybeans increases and prices will rise. If Brazil has a bumper crop, U.S. soybean prices may fall if there is no increase in demand. Brazil's crop influences U.S. soybean prices because Brazil and the U.S. compete in the same world market.

The more factors influencing prices, the greater the opportunity for wide variations in prices. These market factors are probably not going to change, and wide price variations will continue to be the norm. Marketing educators must equip their students with the ability to analyze and interpret the information that is available so that they can make intelligent marketing decisions.

The understanding of economics will aid vo-ag students as they face many complex questions.

Some typical questions that students mightcontend are:

1. What might be the effect on grain prices if there is a drought in Asia?
2. What might be the effect on soybean and sunflower prices if there is a larger than normal crop of palm nuts produced?
3. What might be the effect on the demand for grain if the United States decides to import Russian grain?

4. What might be the effect on the demand for grain if African countries had a higher level of economic prosperity?

All of the above could affect marketing decisions.

Marketing: Alternatives

A good understanding of marketing alternatives is necessary for successfully marketing grain. The better the farmer understands these alternatives, the better chance he or she has for profiting from the grain. Vo-ag education must provide instruction on how to use the various alternatives along with the advantages and disadvantages.

The grain farmer has only a limited number of alternatives when it comes time to price grain. Many times a combination of these alternatives can be used. For example, the farmer might sell grain to a local company and use contract sales or forward selling to lock in prices. The futures market cannot be used in conjunction with a cash sale at harvest. However, each strategy will be addressed separately.

Sell for cash. Selling grain in a very simple strategy. When is it the best way to increase profits? When is it the best strategy for the specific situation. Is it the best way to sell grain? If prices are low, the farmer may not get the best price for his grain. If prices are high, the farmer could miss the best price. If grain prices are high, the farmer may lock in a very low price for his grain. The futures market cannot be used in conjunction with a cash sale at harvest. However, each strategy will be addressed separately.

On the negative side of this strategy, the price received

(Continued on Page 18)
Teaching Profit and Loss

By Max Anderson
Editor's note: Dr. Anderson is head of the Department of Agribusiness and Agricultural Economics, Montana State University, Bozeman, Montana (1972).

It is the desire for profit that persuades entrepreneurs to establish new businesses and later to understand the pattern of production (e.g., from big crops to small ones). It is the profit motive which stimulates farmers, ranchers and agribusiness managers to make businesses more efficient, to introduce new cost-cutting technologies in production, and to compete more vigorously for profits and thereby stimulate future growth. Thus, in a competitive market economy, profit spurs both efficiency and growth.

Producers seek to maximize their profit and are pushed by the profit motive to combine productive resources in the most efficient way to produce the goods and services consumers want at the lowest possible cost. Workweek seek to sell their labor where the return in money and working conditions is highest, just as sellers search out high interest rates in capital markets: both are motivated by self-interest. By comparison the profit picture for most of agriculture is love.

However, as many farmers/ranchers have come to realize they themselves are pricing "profit" for them by "style" or "way of life". Students who choose agriculture as their life career must consciously also make that very hard decision. Both "making a profit" and "having a pleasing way of life" are attainable. This is the idea in which our teaching should strive. The history of vocational agriculture is that of the struggle of these passions: we have them in every part of our community and in every type of business and industry in America. These stories make excellent teaching examples and are the basis for soliciting support from our citizens.

Similarly, losses (negative profits) are a signal to move resources to more efficient ventures. Thus, a judicious judgment, or a race for office can be a meaningful learning experience. Determining why losses occur creates the situations from which teaching might focus.

Problem Solving

In order to effectively utilize the problem solving approach, the problem must be correctly identified, the various kinds of facts and detailed information appropriate to the solution of the problem must be identified and gathered, and the facts and details must be put into a problem solving format appropriate to the type of problem under consideration. The student should then make a decision based on the information gathered and be able to justify their decision. Problems and decisions should be discussed openly in class.

Problem solving will both promote and test the thinking of students. Its emphasis on real life problems, and the application of concepts will bring application to teaching.4

Though losing can be traumatic, it can often be a valuable learning experience for those involved. American agriculture, business, and industry are built on making a profit, yet one must understand the implications and consequences of loss.

References

2Economic Literacy, Kids Catch It From Big People. Montana Council on Economic Education, P.O. Box 321, Helena, Montana (1982).
**Minneapolis Sets Celebration**

The Department of Vocational and Technical Education, University of Minnesota, is calling attention to a very significant celebration with the dedication of a new building for October 8, 1982. The celebration is the dedication of a new building housing the Department.

The significance of the event is even more far-reaching than the acquisition of more space. The building is the first of its kind to be constructed at a Land-Grant University. Housing all units and facets of vocational-technical education, the building and its emerging programs are identified with the most contemporary interpretation of the ideal expressed in the Land-Grant legislation, namely, "to provide instruction at all levels to the sons and daughters of farmers and mechanics."

By R. Paul Marvin
Editor: Marvin is Professor in the Department of Vocational and Technical Education at the University of Minnesota. St. Paul, Minnesota 55108.

A special feature of the dedication will be the awarding of an honorary doctorate, the sixty-first to be awarded in the University's 131-year history and the first in the College of Education's 76-year history, to a towering leader in the student, national, and international level of vocational education, Mr. John A. Butler, former director of Dunwoody Institute in Minneapolis.

Friends of the Department, the University, and the field of vocational and technical education are invited to attend the ceremonies which begin at 2:30 p.m. on October 8, 1982.

**Publicizing a Year-Round Program**

By Horace L. Harmon and Steve G. Wetzeling

Editor's Note: The authors are Vocational Agriculture Teachers at Hertford Junior/Senior High School, Parkton, Maryland 21850. The photographs accompanying the article were made by the FFA Chapter Reporter, John Nicholson, who operates a small photography laboratory in his home.

Last week a typical vocational agriculture instructor probably spent 30-60 hours training future agriculturalists. Hard work like this enabled the livestock judging team to win first place, helped students better understand the relationships between the garden and the environment. Also during the work, time was devoted to help FFA members prepare for the upcoming annual FFA banquet, to meet with the young farmer organization, the FFA Alumni chapter, and the agriculture program advisory committee; and the list goes on and on.

The image you have of yourself and the FFA program is excellent. You feel good about all that was achieved last week. But what image do others in the community have of you? Of your FFA program? Are you (and perhaps your spouse) the only one who knows how diligently you work, what the FFA program offers, what skills students acquire, and how the FFA benefits the local community? Perhaps some of your time should be directed toward building the image of the FFA program.

A good public relations (PR) plan can help build or change an image.

The Past Image

Hereford Jr./Sr. High School is a comprehensive school (grades 7-12) located 25 miles north of Baltimore, Maryland. The school was originally small with approximately 300 students and most of the students in the school district were from farms or had a farm background.

The image of the vocational agriculture program was like that of other programs in the United States: one instructor with responsibility of training boys to become competitive farmers. The vocational instructor knew most of the families in the school district and good public relations was largely a matter of talking with parents during home supervision of the student’s "project." Participation of the FFA instructor in different farm organizations and personal involvement in other farm-related activities helped develop the image of both the instructor and the FFA program.

The Present Image

With the trend of people leaving the city for a more relaxed "country-style" of life came a need for the FFA program to change and meet the demands of a new clientele—students, both male and female, with little or no farm background, but with an interest in many areas of agriculture. Because of this movement, Hereford Jr./Sr. High School tripled in size to approximately 1500 students. Five instructors are currently employed to teach in the agriculture program. In addition to basic courses in production agriculture, the department now offers courses in small animal care, veterinary science, wildlife management, forestry, horse husbandry and horticulture.

It became important not only to teach students skills needed to become employable in the different agricultural disciplines, but also to educate many of the students' parents and the general public about agriculture.

The "PR" Efforts

Supervision of student occupational experience programs is an excellent way to inform parents about the FFA program at the school. Because of limited land resources or nature of the course, many students are unable to conduct "hands-on" SOE programs at home. Many students use the school facilities, such as the school farm or small animal laboratory, to receive needed "hands-on" experience. As a result, additional ways must be used to inform parents of these students and others in the community about the FFA program and build a desirable public image.

Safety Program—FFA members help local farmers identify safety hazards on their farms.

Farm Fair—allows youth in the community an opportunity to show farm animals and to learn about agricultural and horticultural products, view agricultural displays, and meet farm people.

Kiddie Farm—allows elementary children from surrounding schools an opportunity to view animals on the school farm and in the small animal laboratory, tour greenhouses and agricultural mechanics facilities, and view displays that illustrate human foods produced from raw agricultural products.

Open house—the public is invited to view agriculture department facilities and note student accomplishments in FFA contests, ag. mechanics projects, etc.

Ag Week—held each year in a local shopping center mall, department personnel construct and exhibit an agricultural display.

Farm-City Day—persons from Baltimore and surrounding area visit school farm and agriculture department.

National FFA Week—FFA members conduct various agricultural activities at school and in community.

Lawn Mower and Tractor Clinic—informs local residents of safety precautions in using lawn mowers and tractors.

Parliamentary Procedure Workshop—FFA officers conduct a parliamentary procedure workshop for local 4-H club officers.

Safety Program—FFA members help local farmers identify safety hazards on their farms.

Farm Fair—allows youth in the community an opportunity to show farm animals and to learn about agricultural and horticultural products, view agricultural displays, and meet farm people.

The Pay-Off

The writers of this article believe the majority of vocational agriculture instructors are hard workers, dedicated to teaching their students modern agricultural skills and leadership qualities. Local teachers and advisors have paid off at Hereford Junior/Senior High School, in both student numbers and teaching facilities.

Elementary school children learn about agriculture and farm life in the Kiddie farm program conducted at Hereford Jr./Sr. High School in Parkton, Md. Above, children travel by wagon to the school farm. (Photograph courtesy of John Nicholson, FFA Chapter Reporter.)
Report on Part One of the National Opinionnaire on Vocational-Technical Agricultural Education

The first national opinion poll of vocational-technical agricultural education was conducted through the May, 1962, issue of The Agricultural Education Magazine. Copies of The Magazine were mailed to 13,000 vocational-technical agricultural educators. This included both subscribers and programs in which nonsubscribers taught. The assistance of the Agriculture Program Specialist of the U.S. Department of Education is gratefully acknowledged for supplying a listing of all programs. Responses were received from 253 individuals. This is a return rate of about 2 percent — far less than that expected by most agricultural education professionals who assisted in the design of the poll, but according to the available statistics on data analysis. Due to the low percent of return, only limited statistical treatment was possible. Further, some respondents chose not to answer all questions.

The findings on background information and Part I: Program Administration are presented here.

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### Highest Level of Education

- Less than a bachelor's degree: 0%
- Bachelor's degree or equivalent: 100%
- Master's degree: 30.1%
- Educational specialist or certificate of advanced graduate: 43.3%
- Doctoral degree: 32.3%

Total: 248 (100.0)

### Development Mission of Vocational-Technical Agricultural Education at the High School Level

- Preparation for employment in farming and ranching: 1.7%
- Employment in farming and ranching: 1.2%
- Employment in farming and ranching or advanced studies of agriculture at the postsecondary level: 20.0%
- Employment in farming and ranching or advanced studies of agriculture at the baccalaureate level: 50.7%

Total: 248 (100.0)

### Department Location of Vocational-Technical Agricultural Education at the Federal Level

- U.S. Department of Agriculture: 90 (38.9)
- U.S. Department of Education: 41 (18.1)
- U.S. Department of Labor: 3 (1.3)
- Other: 52 (21.4)

Total: 248 (100.0)

### Adequacy of Preparation Provided by Teacher Education Programs

- Very adequate: 22 (8.8)
- Adequate: 176 (70.8)
- Inadequate: 48 (18.9)
- Very inadequate: 5 (2.0)

Total: 248 (100.0)

### Farm Broadcasting: The First Sixty Years


This is a fascinating book that describes the history of farm broadcasting from 1920-1980. It begins with a simple history of the developments that made radio and television broadcasting possible. It describes how radio and television broadcasting are used. It presents some of the first radio stations and the personalities who operated them for such purposes as relaying grain and livestock market information and marketing CDA's livestock. In the early years, many stations were on the air for short periods of time, several times each day. After 1928, stations were required to broadcast continuously by day and this extra time spurred the development of more farm programs. Besides chapters on early developments, the author includes a separate chapter describing the stations that have been established by various farm organizations. The book is written for all who have heard farm programs as a source of information and will find it of interest. It could be an excellent book for any students who are considering a career in farm broadcasting.

### Adequacy of Teacher Certification Regulations

- Very adequate: 23 (10.0)
- Adequate: 375 (67.7)
- Inadequate: 43 (17.1)
- Very inadequate: 8 (3.2)

Total: 350 (100.0)

### Final Polling

- In comprehensive high schools: 199 (81.8)
- In area vocational centers: 34 (14.0)
- Both: 12 (4.2)

Total: 245 (100.0)
Economic Literacy Through
Tour of Grain Exchange

Students on the 1981 Youth Crops Tour visited the Minneapolis Grain Exchange “weather map area” on the trading floor. (Photograph courtesy of Patricia K. Henderson, Minneapolis Grain Exchange)

Cash grain tables and the electronic board of the Minneapolis Grain Exchange. (Photograph courtesy of Patricia K. Henderson, Minneapolis Grain Exchange)

The electronic board in the Minneapolis Grain Exchange. (Photograph courtesy of Patricia K. Henderson, Minneapolis Grain Exchange)