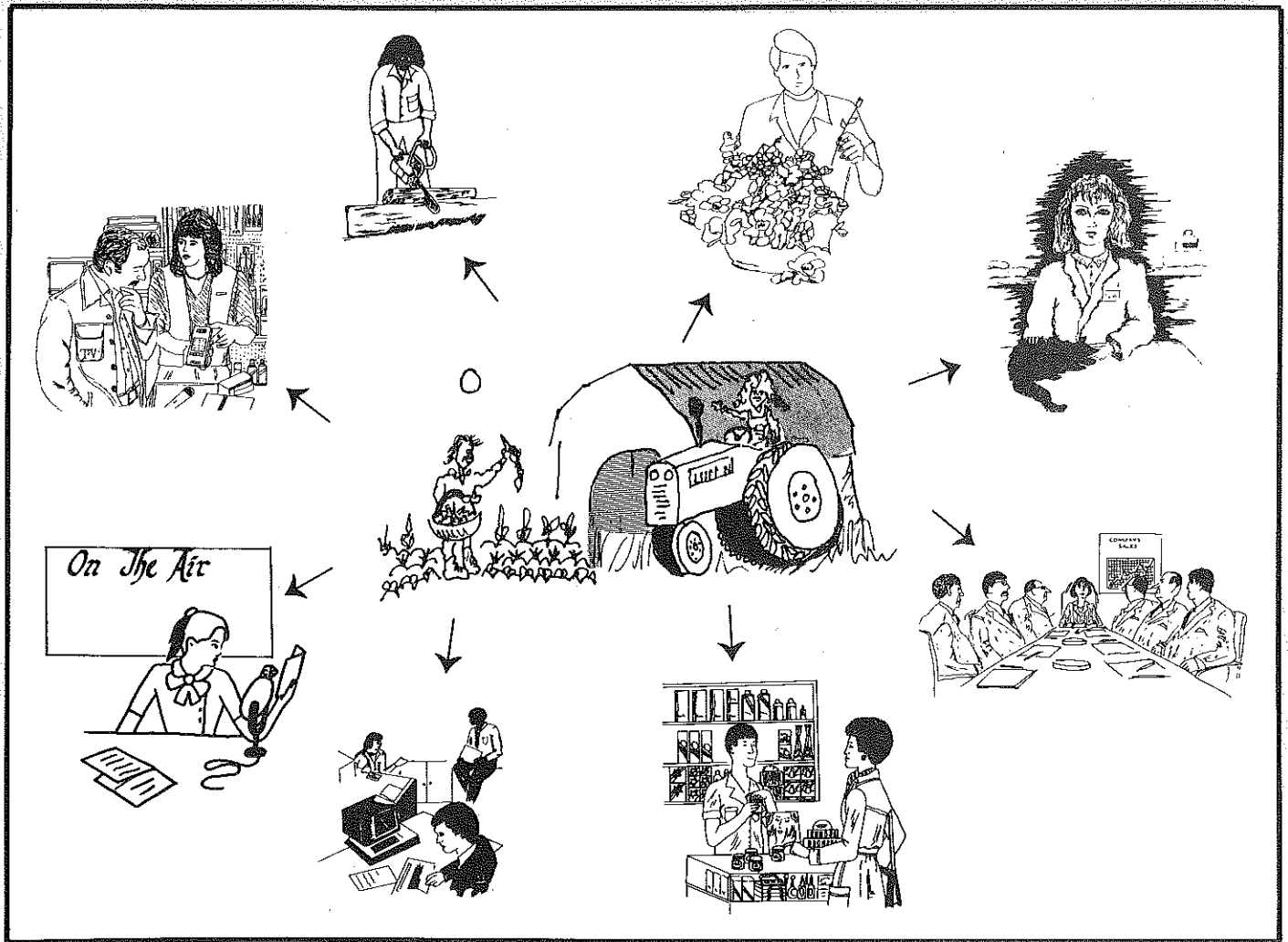


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THEME: Entrepreneurial Education

THE AGRICULTURAL EDUCATION MAGAZINE



July, 1988

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Table of Contents

	Page
Editor's Page	
A Case for Economic Education Blannie E. Bowen	3
Theme: Entrepreneurial Education	
Entrepreneurial Education — The Time Is Now Rick Roster	4
Hunting the Heffalump Lori Walla and Bruce Burger	5
Incorporating Entrepreneurship Education into Agricultural Education Marty Frick and Timothy J. Rollins	8
Entrepreneurship — A Dream Come True! Gary Maricle and Bob Birkenholz	10
Instructional Resources for Entrepreneurial Education Timothy J. Rollins and Marty Frick	12
Open Apprenticeship Program in Nigeria Chigozie C. Asiabaka	14
Arguing With Success Phillip R. Zurbrick	15
Entrepreneurial Education in Vocational Agriculture Jamie C. Williams and Ronald Powell	18
Impact of USDA Challenge Forum II on Education in Agriculture William Stoll	20
What Would Smith and Hughes Say Now? Jasper S. Lee	21
1989 Themes	23
Stories in Pictures	24

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A Case For Economic Education

Statements that described vocational agriculture during the 1960s are again quite popular. Four examples are listed below.

- Farmers can't survive without adequate records.*
- Vocational agriculture includes horticulture, processing, floriculture, agribusiness, forestry, and related areas.*
- Seminars on off-farm occupations will be held this year.*
- The Future Farmers of America organization serves all students.*

The above statements enticed 1960s and 1970s students who did not want college degrees. The statements also appealed to students, including this author, who wanted a college education plus skills vocational agriculture provided. Many students, however, left the program during the 1980s. Why did the euphoria die in the 1980s? Many say vocational agriculture never expanded and that agriculture is not taught as a business and a science. Demographics suggest further reductions in student numbers without significant change.

Almost 98% of Americans do NOT live on farms. Stated differently, the farm sector will have less political clout. Expensive farm programs will have more difficulty moving through Congress. Such realities mean few opportunities if instruction is too production oriented. Opportunities abound, however, when agriculture is taught as a SYSTEM, a system with a major economic dimension. An economic dimension means economic principles and concepts rather than production in disguise. An economic dimension means a market for products rather than products for a market. If the systems approach is taken, educators must stop talking to themselves and seek advice about basic economics.

Economic Education

Shug's (1982) definition of economic education is a good point of departure. His definition includes more than an exaltation of free enterprise and filing taxes. "Instead, economic education is helping young people to learn to make economic choices, to understand basic economic concepts, and to apply important economic goals in their decision making" (p. 7).

Economic choices include personal spending decisions as well as those that impact society. Should I trade tractors or repair my old one? Should federal spending be increased for education or national defense? Shug's economic concepts (p. 8) include supply and demand, wants and scarcity, markets, prices, savings, etc. His notion of economic goals allows students to make informed economic decisions, i.e. (1) Economic Freedom, (2) Economic Justice, and (3) Price Stability (Schug, 11-12).

Shug contends that economic concepts are not foreign to students. He notes that in 1960, 44% of males attending high school worked more than 14 hours per week compared to 56% in 1970. For females the percentages were 34% in 1960



BY BLANNIE E. BOWEN, EDITOR

(Dr. Bowen is an Associate Professor in the Department of Agricultural Education at The Ohio State University.)

vs. 46% in 1970 (p. 12-13). Shug maintains that because many students are employed, they have the experience to handle theoretical concepts.

School - Business Partnerships

Agricultural educators must not feel alone while "beef-up" their teaching to include more economic education. O'Connell (1985) suggests school-business partnerships as one answer. "Generally, they (partnerships) fall into four categories: 1) Individual school or classroom partnerships involving one business and one school, 2) total district partnerships involving many partners in many schools, 3) partnerships that involve monetary or material contributions to the schools for special projects, and 4) education programs initiated by business and made available to schools . . ." (O'Connell, p. 9). Clearly, help is available.

Conclusion

Innovative secondary teachers who teach students to seize business opportunities will stay in business. Such instruction, however, must be driven by "market demand" rather than supplying a product. It's obvious that Nonfarm America will not subsidize bad business ventures — no farmer who provides the impetus for their existence. Kenny Rogers is correct. Gamblers AND students must know when to hold them and when to fold them. More importantly, teachers must teach students Kenny's lesson in economics.

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About the Cover

Production agriculture serves as a hub for most instruction in agriculture. Numerous opportunities are available for students to develop entrepreneurial skills both on and off the farm (Artwork from *Sex-Fair Artwork*, Center for Sex Equity, Instructional Materials Laboratory, Ohio State University, 1986).

Entrepreneurial Education — The Time is Now

Never before has the time been more appropriate for promoting of entrepreneurial education. The state of our society warrants the preparation of a vocational education graduate with an abundance of skills, all of which can be developed through an effective entrepreneurial education program. Although these skills consist of some agricultural knowledge, most will relate to organizing, analyzing, and interpreting information as well as using "thinking processes" involved in decision-making and problem solving.

It may be necessary to first remember what entrepreneurship is and perhaps what entrepreneurship isn't. Entrepreneurial education promotes the ability to think creatively and logically in recognizing the opportunities for founding, organizing, managing, analyzing and conducting a business. Entrepreneurial education isn't necessarily the Supervised Occupational Experience Program vocational agriculture has promoted since 1917.

Almost every educational publication available today tells us that society demands citizens who have the ability to use their minds and thinking processes. The most common processes are 1) creative thinking, 2) critical thinking, 3) problem solving, and 4) decision making. Entrepreneurship education promotes these processes as being prerequisite to owning and operating a business. This is true now more than before for several reasons.

The spiraling changes in technology influencing agriculture as well as other sectors of the economy mean rapidly changing employment conditions. The jobs available now may not exist in five years. Criteria for those job opportunities will certainly change to take advantage of changes in technologies. Rapidly changing conditions and situations mean tremendous opportunities for those with the knowledge and foresight to recognize those opportunities. Potential owners and managers of businesses and firms will need thinking, organizing, and analyzing skills to take advantage of such opportunities — if they are to be successful.

Entrepreneurial education will also be a necessity for adult students who may already be in the work force, but will progress to the point of owning and operating a business in the future. Adult education and entrepreneurial education must be tied closer together. It is estimated that, with the aging of America occurring in every facet of our society including the work force, 80% of workers who will be in the U.S. work force in the next 40 years are now in the work force. Obviously, this means that most new entrepreneurs are currently in the labor force and need training.

Entrepreneurial education must be made a more integral part of the professional preparation of agriculture students. Dr. Ted Hartung, Dean of the University of Nebraska College of Agriculture, reports that more College of Agriculture graduates than ever are becoming self-employed upon



BY RICK FOSTER, THEME EDITOR

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leaving college. An even larger number become self-employed after a few years of on-the-job experience in the field of interest.

It is estimated that 90% of new jobs established in the U.S. are in businesses with 20 or fewer employees. It is also estimated that the current failure rate of small businesses is as high as 90%. With odds like these facing entrepreneurs venturing into the world of ownership, instructional programs must be ready to do what they can to effectively prepare those wanting to participate in the ownership arena.

The articles included in this issue will help teachers at all levels gain insights into entrepreneurial education issues.

- New definitions will be discussed to assist in distinguishing between what we've been doing for over 70 years and modern concepts of entrepreneurial education.
- Resources for teaching entrepreneurship will be identified and discussed to provide possible sources of information to develop the instructional program.
- Several examples of successful entrepreneurial education programs will be provided at the secondary, post-secondary, and international levels.
- Entrepreneurship will be discussed in light of existing vocational agriculture programs in hopes of seeing commonalities already in place and providing direction for curriculum modification to strengthen entrepreneurial education.
- Methods of instruction useful to entrepreneurial education will be discussed.

In the future, knowing agricultural subject matter will not be enough. Maybe even more important than content will be the ability of trained professionals to do the following:

1. Be able to recognize and take advantage of employment and/or ownership opportunities as they present themselves.

2. Be able to assess their own strengths and weaknesses as they relate to successful operation of a business, and be able to compensate for areas of less strength through creative management techniques.
3. Be able to use the technology of the future to their advantage in making decisions and gathering information needed to be successful owners of a business.
4. Be able to critically analyze situations and be able to

creatively solve problems associated with business opportunities and employment situations.

Vocational agriculture has always had entrepreneurial education as a focal point. However, the rapid changes in technology and the current societal structure lead us to believe that addressing entrepreneurial instruction can't be accomplished using the same old approaches to vocational education. The time for new and innovative approaches to training for entrepreneurship is now.

THEME

Hunting the Heffalump

According to Peter Kilby (1971), the search for the source of entrepreneurial performance has much in common with hunting the Heffalump. The Heffalump is a rather large and important animal. It has been hunted by many individuals using ingenious trapping devices, but no one has succeeded in trapping it. All who have caught sight of it have reported it as enormous, but they disagree on its particularities. However, the search goes on.

A similar search is occurring in agricultural education. With the pressure to incorporate new ideas in the curriculum, we often grab at buzz words like "entrepreneurial education." We agree it is important, but we are a bit confused when it comes to developing and conducting instruction. After all, haven't we always been conducting entrepreneurial education through ownership SOE programs?

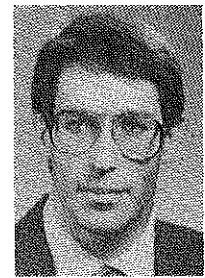
Before diving into the elements of an entrepreneurial education program, we must understand the difference between entrepreneurship and sole proprietorship. Richardson, Camp and McVay (1982) define them in the following manner.

Entrepreneurship: The undertaking of the responsibilities and risks of a business venture in exchange for the opportunity to realize the profits from the venture.

Sole Proprietorship: The ownership and management of a business where a person takes all the risks and receives all the profit.

At first glance, the two definitions seem similar. Both include the undertaking of risks in exchange for profit; however, the underlying premise is quite different. Sole proprietorship focuses on the management of the present, while entrepreneurship requires innovation that inspires growth.

Entrepreneurship in agriculture is not different from entrepreneurship in other business areas. Successful entrepreneurs combine many traits in addition to managerial skills needed in a sole proprietorship. According to Stanley and Morse (Kilby, 1971), the fostering of entrepreneurship requires support in two areas. First, the overall environment must provide a setting that enhances student creativity. Second, instruction is needed to aid students in accessing information and technology needed by entrepreneurs.



By LORI WALLA AND BRUCE BURGER

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Providing A Creative Environment

Providing an environment supportive of creativity can be difficult. While education demands consensus, control, and certainty, creativity thrives on instinct, freedom, and uncertainty. Perhaps, we can borrow the ideas of John Sculley (1987), President and CEO of the Apple Corporation, and apply them to managing innovation in SOE programs.

- **The safer you make the situation, the higher you can raise the challenge.** As vocational agriculture instructors, we need to remove obstacles and build support for work being done by students. This process may require the instructor to look for alternative methods of marketing, financing, or producing.
- **Do not direct students, but give them direction.** We want students to conceive ideas they have not yet dreamed. We must talk frequently with our students about the meaning of agriculture, and its future.
- **Encourage creativity and critical thinking.** Dissent stimulates discussion, prompting others to make more perceptive observations. For this to occur, however, students must feel free to express contrary opinions without fearing repercussions.

(Continued on page 6)

Hunting the Heffalump

(Continued from page 5)

- **Build an environment to extend not just students' aspirations but also their sensibilities.** The learning environment needs to be informal and relaxed. SOE programs are an integral part of the learning environment. By placing constraints on SOE programs, we force students into rational, rigid thinking. This is the opposite of creative thinking.
- **Build emotion into the system.** The desire to succeed is the driving force of the innovator. This motivation needs to be constantly reinforced. Proficiency awards and FFA degrees provide a long-term challenge; however, some students may need short-term challenges such as solving a specific problem.
- **Encourage accountability over responsibility.** We should not give students a recipe to follow for operating their SOE programs. Instead, students should be made accountable for their decisions and the outcome of their work. Students need this freedom to try new ideas in their SOE programs.

Providing Entrepreneurial Instruction

Providing SOE instruction may change when we stress entrepreneurship in SOE. We may find ourselves approaching the SOE program from a different perspective. Instead of concentrating on the product, we may need to look at the process. Curt Stutzman (1987), program developer for the Rural Diversified Enterprises Center, outlines some steps in this process.

Start by Determining the Market

Students need to see if they can capitalize on consumer trends in their community or area. A common trend is new change in consumers' diets. Can students promote their product as natural, fresh, or healthy? Selling hydro-cooled sweet corn sends a message of freshness to buyers.

Another important point is to sell a want not a need. For example, people may need flowers, but what they may actually want is roses. Need generates excess production, while want generates demand.

Another factor to stress is vertical integration of a product. Selling live pheasants may generate \$7 per bird. By adding dressing to the enterprise, the student might be able to sell the birds for \$9. Smoking the dressed birds may increase the income to \$12 per bird.

Market niching allows students to respond quickly to consumer needs, and demand higher profit. After developing their market niche, they must decide how to get their product and customers together. The following are types of marketing strategies that students can use.

- **A Mail Order Business** is a means to expand a student's marketing area beyond the local community. Many mail order businesses already exist that will promote and sell an item on commission.
- **Pick-Your-Own** is a method of selling produce directly to the consumer. The consumer benefits from the freshness of the product, while the student eliminates the harvesting step of the enterprise.
- **Marketing Cooperatives** allow students to pool products and offer a larger quantity or variety. This may open some



Small engine knowledge prepares many students for entrepreneurship in the same field (Photo by Dave Creel, WVU Comm. Dept.)

potential markets that may not exist for an individual student.

- **Membership Clubs** are targeted at a select group of individuals. By charging membership fees, students generate operating capital before it is needed and can better identify consumers' needs.
- **Direct and Roadside Markets** provide an opportunity to get started with a low capital investment, while demanding a higher price than a farmers' market. Such markets are ideal for students who have limited volume but a variety of products.

Creative Financing of SOE Programs

Financing an SOE program has typically been accomplished through the student's effort or with parental assistance. These methods may not always be viable for all students. As instructors, we need to encourage creative financing for SOE programs.

- **Lending Institutions** are one alternative that has been used as projects increase in size, but they can also be used to start programs. Many banks offer reduced interest loans for youth starting an agricultural venture.
- **Merchant Credit** is another way of covering operating expenses in a program. A common example is contract feeding with companies that sell poultry feed and chicks.



Designed for pedal tractors, Rich Follmer's farm equipment for "little people" drew over 1,200 reader inquiries.

Small Machinery Scores Big Interest

Rich Follmer designs farm machinery for small farmers. Small in age, not acres.

His basic equipment line of farm machinery for pedal tractors, introduced in the September issue, drew a large response from big and small farmers, alike.

His line consists of a look-alike John Deere Max-Emerge planter, Kinze auger wagon, gravity-box, moldboard plow and a replica of his own box frame, parabolic-shank, deep-tillage rig. Price of the implements is \$125 each.

This year he plans to add a tandem disk, both conventional and vacuum manure spreaders, transport augers, a pedal combine and pull-type anhydrous tool bar complete with hoses.

Follmer will paint the implements any color and supply decals.

*Reprinted with permission of
FARM INDUSTRY NEWS
(Jan. 1988).*

In such cases, expenses are often carried until the birds are sold.

- **Clientele Financing** may be used when a customer base has been established prior to starting a business. In developing a hunting preserve, for example, potential members may contribute some initial capital for habitat planting or raising birds.
- **Sweat Equity Partnerships** may be established when an outside investor provides the needed capital and the student provides the labor.

- **Leasing** is a way of maintaining a cash flow in beginning SOE programs. Large, up-front expenses can be spread over several years.
- **Time Share** involves trading or bartering labor or product for the use of equipment or service for a specific period of time.
- **Salvaging Waste Materials** is an ideal opportunity for students to get started in business. Many times small or second rate equipment can be found that is very appropriate for beginning an SOE program.

Managing Risk

Students are constantly faced with making decisions in their SOE programs. Although good planning and consultation are helpful in the decision making process, the student must make the final judgment and be willing to accept some risk. The vocational agriculture instructor must help students understand the concept of risk and its relationship to potential profit.

In the pheasant example mentioned earlier, a student may be selling live birds for \$7 per bird. After testing the market, the student sees that smoked pheasants are selling for \$9 per bird. If the student's additional costs are \$1.50 per bird, the extra 50¢ profit may not be enough to justify the risks of entering a new market. If the price for smoked birds were to increase to \$12, the extra profit potential may be a large enough incentive to enter a new market even though the risk is the same.

Summary

Richardson, Camp and McVay (1982) feel that young people in vocational agriculture have a unique opportunity to develop entrepreneurial skills through SOE programs. With beginning students, the enterprise may be fairly small and straight forward. However, it will require the student to assume responsibility, make decisions, and take entrepreneurial risks. Under these circumstances, mistakes are more likely to be detected and addressed before serious damage is done to the enterprise. By starting in a small way the student will develop the experience needed to expand and improve the business venture.

Although we have covered considerable terrain and learned a little about our Heffalump, we may still lack a reliable description of what it looks like. However, our starting point is to provide an environment for innovation and assistance in developing supplemental skills beyond management. Entrepreneurial education can create educational experiences which respond to the range of human talent rather than just directing that talent.

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Incorporating Entrepreneurship Into Agricultural Education

The rural economic crisis has created an awareness of the importance of broadening students' experiences in agriculture. The traditional production focus of many vocational agriculture programs is gradually giving way to more comprehensive and up-to-date approaches. Progressive teachers can advance this trend by infusing more entrepreneurial education into vocational agriculture programs.

The merging of entrepreneurial business practices with agricultural subject matter results in increased student knowledge and understanding of agriculture as a total industry. Currently, students receive instruction in the areas of business organization, financing, and marketing primarily relating to production agriculture. Entrepreneurial skills and principles can be learned and applied by students who develop and manage an agricultural business. Classroom subject matter and activities related to production agriculture can provide the necessary background for the development of a student managed agricultural business. Student development of entrepreneurial skills and concepts can serve to:

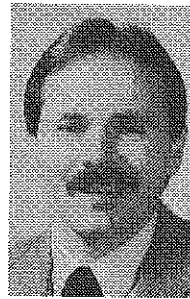
1. encourage the ownership of a business related to agriculture,
2. improve business decision-making skills, and
3. ensure an appropriate commitment to agricultural business (Burrows, 1985).

Infusing Entrepreneurial Education

The seven agricultural occupational areas shown in Figure 1 that resulted from the Vocational Education Act of 1963 illustrate the broad scope of agriculture and its many applications within today's business world. From this model, the instructor can choose from a variety of agricultural businesses that can facilitate the infusion of entrepreneurial skills and concepts into a related course. This model also illustrates a variety of activities that can be practiced when learning about agricultural business ownership.

Starting with a freshman class and continuing through advanced courses, integration can be accomplished by coupling technical skills taught in vocational agriculture with entrepreneurial skills necessary to increase the rate of small business success. For example, after teaching a particular unit on livestock production in a freshman class, involve the class in an entrepreneurial experience by purchasing, raising, and marketing livestock. This activity will give students a first-hand opportunity to experience business decision-making. A freshman level unit on careers is also a logical place to introduce students to entrepreneurship and the free enterprise system.

Infusing entrepreneurial skills and concepts into the plant science or horticulture portion of a sophomore class can also provide creative and innovative experiences. Sophomore



By MARTY FRICK AND TIMOTHY J. ROLLINS

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students could create a small floral business, bedding plant operation, or landscaping enterprise.

Agribusiness and farm management courses offer another approach to teaching entrepreneurial skills. Besides employment skills, an agribusiness course can stress management and productivity skills as well as providing an understanding of problems that confront employers. Farm management courses that require each student to develop a farm management plan could easily adapt the economic principles and concepts to planning and managing an agriculturally related business.

Agricultural mechanic skills can be coupled with entrepreneurial skills to market technical skills that are learned. Examples of agricultural mechanic businesses that could be experienced in vocational agriculture include a small gas engine repair enterprise, a machinery repair operation, or a fabrication firm.

An entrepreneurial approach to teaching gives the student a broader understanding of agricultural industry and provides experience for future endeavors in the business world. Agricultural businesses related to vocational agriculture courses are too numerous to mention. With student and community input, many other businesses can be created by incorporating entrepreneurial practices with vocational agriculture classes. The nature of a vocational agriculture curriculum lends itself to the application of entrepreneurial concepts and skills.

Integrating Curriculum

The curriculum that can best facilitate the infusion of entrepreneurial education into vocational agriculture is PACE, i.e. Program for Acquiring Competencies in Entrepreneurship. These curriculum materials, developed by the National Center for Research in Vocational Education, build student confidence for current and future entrepreneurship

(Ashmore, 1987). The building process necessary for effective entrepreneurial education has been satisfied by dividing the materials into three levels.

Levels 1 and 2 are recommended for use in a secondary vocational agriculture program. Level 1 is for students who have limited business background but wish to learn what is required to start and run a business. An in-depth knowledge of creating a new business is the focus of Level 2. This level provides opportunities to "dream" about entrepreneurship as a future career option. The Third Level is primarily for adult and young farmer education programs. Level 3 is designed for individuals who have business knowledge and are ready to start a business or improve an existing one.

Each of the three levels is divided into 18 modules which can assist an instructor in customizing an entrepreneurial program. Modules cover pertinent topics and range from "Planning a Marketing Strategy" to "Managing Human Resources." A detailed instructional guide is available for each level. All units are self-contained and include objectives, content, activities, and post-tests. The separate modules allow the instructor to customize entrepreneurial education to an existing course.

PACE modules provide a quick and easy reference for students and teachers to develop an agribusiness in the classroom. The competency-based instructional approach that is used can be adapted into vocational agriculture programs with minimal effort.

Entrepreneurship Experience

With creativity, existing Supervised Occupational Experience (SOE) programs can facilitate the experience of agribusiness ownership and application at the high school level. An SOE program can furnish students the opportunity to apply their knowledge and skills in entrepreneurship. PACE materials provide the instructor and student some insight into potential entrepreneurship adventures.

Various publications are available to assist the teacher, student, and FFA chapter in their search for potential entrepreneurial business ventures. The proceedings from *Successful Farming's ADAPT-100 (Ag Diversification Adds Profit Today, 100 ideas for farmers)* Conference present an excellent variety of agricultural entrepreneurship and carries the theme of "Find Your Market First." *Rural Enterprise* magazine includes articles on ideas for new rural enterprises as well as tips for experienced entrepreneurs. The Nissan Motor corporation, in conjunction with *Mother Earth News*, published a *Financial Independence* guide containing many practical examples of "bootstrap businesses." Any of these publications would be a good addition to a vocational agriculture department's library.

Conclusion

If entrepreneurial education is to flourish, it will require imagination, cooperation, and hard work (Ropp, 1987). Pulver (1985) stated, "Rural entrepreneurship can be created through education and the establishment of a proper environment" (p. 17). The inherent characteristics of vocational agriculture programs make them a natural environment to teach entrepreneurial education.

Agricultural Occupations

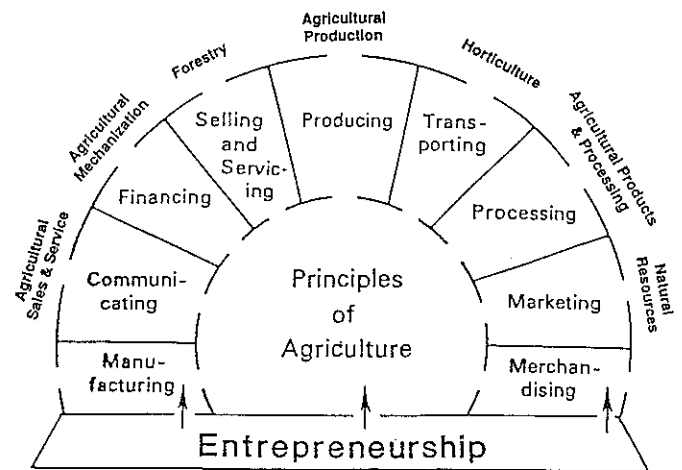
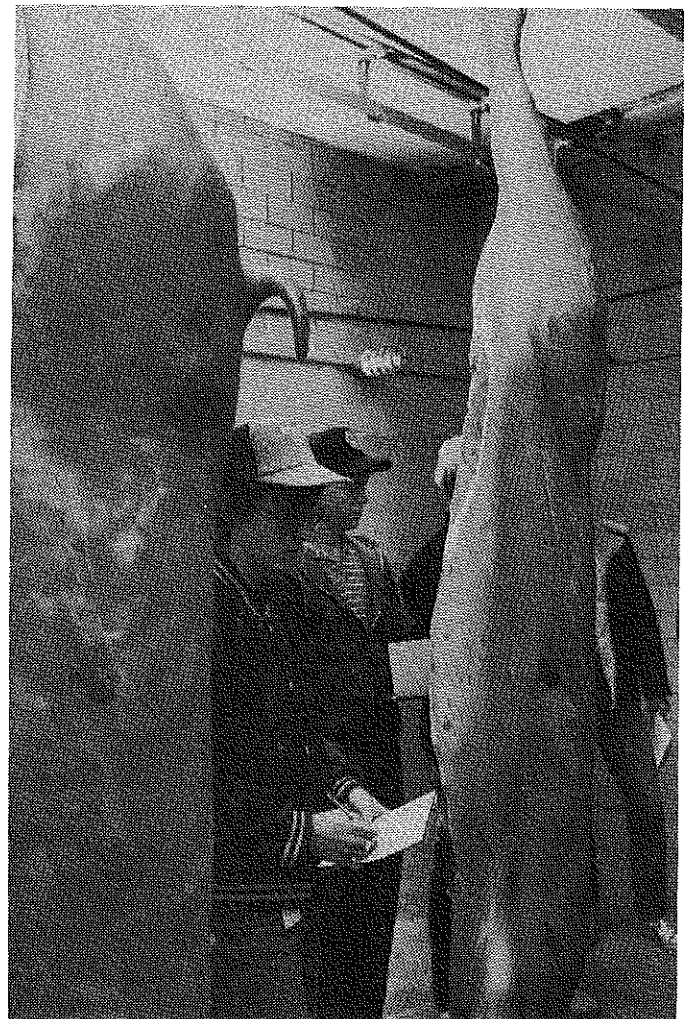


Figure 1: The Seven Agricultural Occupational Areas. Adapted from Stansbury (1986)



Students analyzing maturity of pork carcasses to determine USDA grades. Such experiences will be valuable for individuals who have an interest in starting processing businesses. (Photo courtesy of David Creel, West Virginia Communications Department.)

(Continued on page 10)

Incorporating Entrepreneurship Into Agricultural Education

(Continued from page 9)

The FFA offers students the chance to brainstorm and create new business ventures by applying the skills and concepts learned through entrepreneurial education.

SOE programs provide an excellent first-hand opportunity to practice the acquired entrepreneurial business principles.

By incorporating entrepreneurial education into current programs, vocational agriculture has a unique opportunity to broaden and freshen its image in the eyes of employers, community leaders, legislators, school administrators, students, and parents.

THEME

Entrepreneurship — A Dream Come True!

Entrepreneurship has surfaced as a leading force to overcome the economic crisis in rural America. The relationship between farming and other rural business enterprises has become increasingly apparent as the economy continues to rebuild. How important is entrepreneurship? The proportion of farm family income derived from off-farm sources has increased in the United States from 40% in 1960 to over 60% in 1980 (Findeis 1985). A major portion of this increase has come directly from the success of new, small businesses in rural communities - thus entrepreneurship is important.

Defining Entrepreneurship

The late Albert Shapero was considered by many as the guru of entrepreneurship. Shapero believed that entrepreneurial activity occurs when something new and creative has happened. As an individual or group takes on an initiative, they bring together resources and/or form an organization to accomplish their goals. They operate with relative autonomy and realize success or failure with the new endeavor.

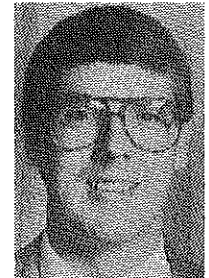
Theorists argue that entrepreneurship is critical to economic development (Gilder, 1984; Vaughn, 1985). Entrepreneurship has led to the formation of new opportunities as markets and technologies change. Entrepreneurship is critical to the maintenance of a healthy rural economy (Carey 1981). Members of successful and progressive communities may be characterized by resilience, diversity, the ability to accept risk, and the ability to generate and/or experiment with new ideas. These characteristics should be enhanced in future leaders of rural communities to maintain the economic viability of the area.

Entrepreneurs Created

There is general agreement that entrepreneurs are not born, but are created as a result of their education and environment (Kanahele 1981; Shapero 1983). Entrepreneurs,

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as individuals, may have a number of characteristics in common. Those characteristics are shown in Figure 1.

1. A strong internal focus of control (self directed);
2. high tolerance for ambiguity;
3. highly independent;
4. high energy level;
5. the ability to deal with uncertainty;
6. a futuristic outlook;
7. persistent;
8. creative;
9. a willingness to take risks;
10. a low tolerance to frustration;
11. tense; and
12. a dissatisfaction with "the system".

Figure 1: Common Characteristics of Entrepreneurs.

Entrepreneurs may not exhibit each of the above traits. However, many of the characteristics are evident among successful entrepreneurs.

Individual entrepreneurs are more likely to be successful if they have had an appropriate role model. Role models may be persons who have succeeded in their business endeavors. Peers and influential others play a critical role in the success of the idea to start a new business. The perception of feasibility is crucial. Agricultural educators have the prime opportunity to help make a difference.

Possible Contributions

The points noted above depict areas which have been, and are being, addressed in many secondary agriculture classrooms. Helping students learn to become independent, creative, persistent, enthusiastic, and forward thinking is necessary for the development of future entrepreneurs. Supervised Occupational Experience Programs (SOEP) are a vitally important component of secondary agriculture programs. Many small businesses have emerged as a result of the experience and knowledge gained through SOE programs.

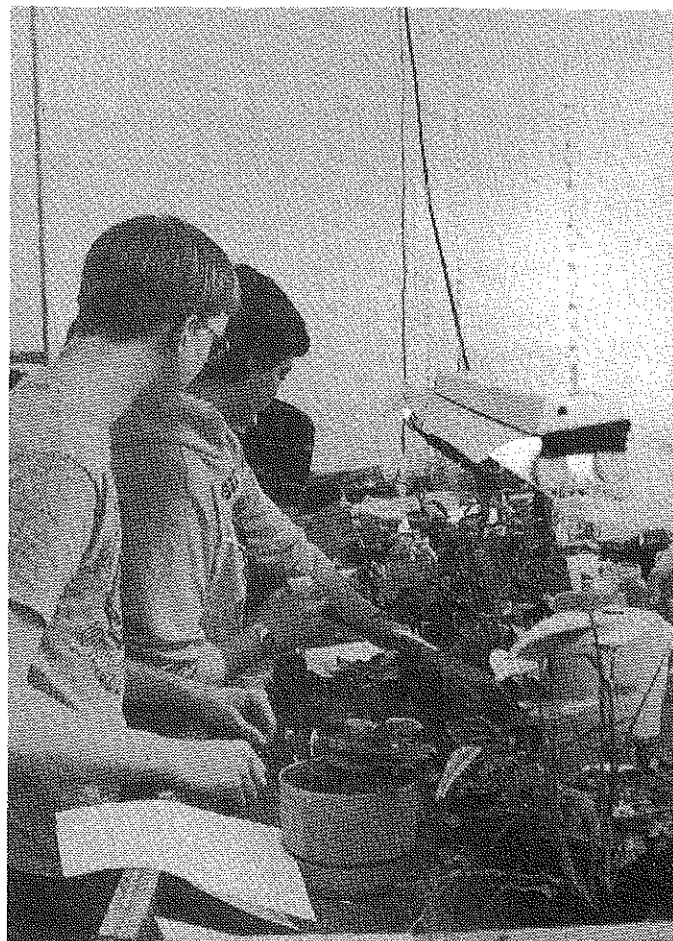
Secondary agriculture instructors can make a difference in how information is presented to students. A progressive program which incorporates new technologies in agriculture/agribusiness is necessary to address the economic changes taking place in the agricultural industry. Programs which focus on "production agriculture only" should be modified to encompass agribusiness which emphasizes communications, business management, and government assistance programs available to entrepreneurs. Fundamental agricultural concepts are very important. However, secondary agriculture programs must address a broader range of topics to continue boosting the success of graduates in tomorrow's agriculture. The need for shifting program emphasis has been documented in several states.

The Missouri Situation

During the 1980s small businesses accounted for the majority of new job opportunities in Missouri. Food and beverage establishments, business services, and wholesale trade were the fastest growing industries. Between 1980 and 1984, proprietorship income increased by 41.1%, while wage and salary income increased by 31.4%.

According to recent data from the United States Department of Commerce, Missouri reported a 21% increase in the number of private sector employers from 1980 through 1985. In 1985, 87.6% of Missouri businesses employed 20 or less persons. It was also reported that 48 counties plus the city of St. Louis lost population from 1980 to 1986. Of these 48 counties, 28 experienced more than a 10% increase in the number of small businesses during the same time period.

Opportunities for entrepreneurship in Missouri have typically followed national trends. It may be assumed that the formation of small businesses has been in response to adverse economic conditions in rural counties and states during the past six years. The increased concern for and implementation of curriculum addressing the economic situation led to the success of many graduating students.



Horticulture offers numerous opportunities for entrepreneurship (Photo courtesy of Ellen Doese, vocational agriculture teacher at Wapsie Valley High School in Fairbanks, Iowa.)

In a 1987 follow-up study, Missouri high school graduates credited their success to information gained in vocational courses. The results clearly identified the importance of vocational classes. The data collected revealed that a 15-20% annual salary advantage was found in favor of vocational graduates. Also, the placement rate of vocational graduates increased from 61% in 1981 to 92% in 1985, while the non-vocational student placement rate rose from 35 to 74% during the same time period. Graduates also encouraged educators to offer classes which provide interview and employment experience. Furthermore, the graduates responding to the survey urged future students to further their education, work harder, and mature as individuals.

Conclusion

A positive attitude in rural America is vital to the development of new employment opportunities through entrepreneurship. If entrepreneurship is to flourish, the next generation of entrepreneurs must believe that success is a possibility. Secondary agriculture instructors must instill positive attitudes in students to develop skills needed to realize their entrepreneurial dreams.

(Continued on page 12)

Entrepreneurship — A Dream Come True!

(Continued from page 11)

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THEME

Instructional Resources For Entrepreneurial Education

Did you know — your students may be eligible to receive up to \$10,000 to start their own agriculture-related business?

Did you know — the Small Business Administration has a toll-free telephone number to obtain free technical assistance in the form of educational programs, expertise, and publications when establishing a new business?

Did you know — the Internal Revenue Service conducts one-day workshops for individuals wanting to start their own business as well as providing printed and audio-visual materials free of charge?

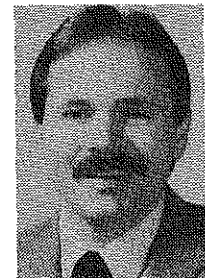
The resources you need to incorporate concepts of entrepreneurial education into your agricultural curriculum may depend upon the unique aspects of your community or state. The prevailing business climate, status of its economic base, and the nature of your agriculture program will influence the needs of your students.

The following sources of information and materials are not meant to be all-inclusive. They will provide a good starting point to launch a search for the most appropriate and relevant information related to entrepreneurial education.

The Federal Government

There are many places you can turn to for aid from the federal government when infusing aspects of entrepreneurial education into your curriculum. From loans for teenagers to free market studies and expert advice, there is plenty of help for the budding — or experienced — entrepreneur.

The United States Department of Agriculture (USDA) is responsible for approximately 29 money programs which



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entrepreneurs can use to start or expand a business. For example, the Business and Industrial Loan Program can be used to start almost any kind of business as long as it is in a town of fewer than 50,000 people. The Production Loan Division gives youth up to \$10,000 to start their own business.

Another organization that agriculture instructors should be familiar with are Cooperative Extension Service offices operated by the USDA. The Extension Service offers free help to people wanting to start enterprises and provides education and information on a number of subjects in agriculture and closely-related fields. Extension professionals can be especially helpful when establishing home-based enterprises in regions within their jurisdiction. Assistance is free by telephone, mail, or in person.

The Small Business Administration Answer Desk has a toll free telephone number (1-800-368-5855) to direct you and your students to free services such as seminars, technical advice, and free publications. The Management Aids (MA's) series includes more than four dozen titles ranging from "Thinking About Going Into Business" to "Learning About Your Market" and "Problems in a Family-Owned Business." Small Business Bibliographies (SBB) lists key reference sources for business management topics. The Starting Out Series (SOS) includes one-page fact sheets describing financial and operating requirements for selected businesses. Free lists and copies of available publications can be ordered from the Small Business Administration (SBA) by contacting the nearest SBA office or by calling the SBA toll free number 1-(800)-792-8901.

The Department of Commerce has industry experts who will advise your students about the enterprise they may be interested in pursuing. They can also direct you through the government maze to provide contracts, reports, and referrals to other sources of assistance.

State and Local Governments

Perhaps the most important sources of information are in your particular state and local organizations. More entrepreneurial activity is occurring at the state and local levels because of the size of the federal deficit. State and local governments are also keenly aware that the key to economic growth is in the growth of small businesses which are responsible for most of the new jobs created in our country. This means opportunities for would-be entrepreneurs.

Not only can individuals obtain grants, loans, and loan guarantees to start businesses, but many states also provide services that locate an interested banker to finance start-up operations. Some state agencies will refer individuals to consulting firms that will provide free services, including preparing a business plan or providing information about "new idea-incubators." Incubator programs will help you find money and other resources to start or expand a business. Depending upon their size and stage of development, these programs may even provide office space, equipment, and technical expertise and then diligently watch over the business to assure its success. The nearest branch office of the SBA may be able to provide the most accurate information.

The National Federation of Independent Businesses has offices in all 50 states offering business owners counseling and referral services. Business people in your community who are members of the Federation may be willing to provide access to the many publications this organization offers.

Curriculum Materials

You may discover there are programs or curricula already in existence in your state that you may be able to utilize as a resource. The National Survey of Entrepreneurial Education (3rd edition) provides a compilation of course descriptions, syllabi, and program announcements for selected seminars and conferences. These six volumes are alphabetized by state and comprise the results of a survey completed by several hundred high schools, two and four year colleges, and universities. The SBA can be contacted through its toll-free number for more information about the availability of this information.

The National Entrepreneurship Education Consortium was formed in 1984 by 19 states to share ideas for programs in their respective areas and to provide a forum for national leadership in entrepreneurship education. For information related to membership, model programs, curriculum, and other services, contact the consortium at 1-(800)-848-4815.

This same toll-free telephone number will put you in touch with the National Center for Research in Vocational Education (NCRVE) where PACE — Program for Acquiring Competence in Entrepreneurship — curriculum materials can be ordered. Use of the PACE materials is illustrated in "Incorporating Entrepreneurship into Agricultural Education." A more detailed description of PACE can be obtained directly from the NCRVE Center.

The NCRVE also has entrepreneurial education materials which are aimed specifically at young farmer and other adult audiences. Guidance in decision-making about career steps and self-employment opportunities are one focus of these materials.

The resources available for agriculture instructors to infuse entrepreneurial education principles into their curriculum are numerous. In fact, the opportunities may be virtually limitless once you start your exploration. The information provided should assist you and your students on a fascinating and rewarding journey.

Entrepreneurial Education Resources

Internal Revenue Service (IRS)
U.S. Department of Treasury
1111 Constitution Avenue, NW
Washington, DC 20274
(202) 566-4024

U.S. Department of Agriculture (USDA)
Office of Information, Room 402A
Washington, DC 20250
(202) 447-8005

U.S. Department of Commerce
Office of Business Liaison
Washington, DC 20250
(202) 377-3176

U.S. Department of Commerce
Office of Productivity, Technology
& Innovation (OPTI)
(202) 377-1093

U.S. Small Business Administration
1441 L. Street, NW
Washington, DC 20416
1-(800)-368-5855

National Federation of Independent Businesses
600 Maryland Avenue, SW, Suite 700
Washington, DC 20024
(202) 554-9000

Coopers & Lybrand**
1800 M Street, NW
Washington, DC 20036
(202) 822-4000

**A large accounting firm offering good, free publications.

Open Apprenticeship Program in Nigeria

Nigeria gained independence from Britain in 1960. As a legacy from their colonial masters, the country inherited an educational system that prepared graduates for "white collar jobs." Prior to independence, most administrative positions were held by the British. To close the vacuum that mass exodus of the British would create at independence, educational planners embarked on an educational system devoid of vocational subjects. The aim of education at that time was to prepare Nigerians who could take over the affairs of the country at independence.

This educational system has stayed with the country after independence. This educational pattern has neglected courses in areas of vocational agriculture and other areas of vocational education. The pattern worked as long as there were jobs provided by the government. However, the world oil glut and global recession have made it impossible for employment to be maintained at the level of the oil boom days. Unemployment has led to other social problems. Nigeria sought a way out of mass unemployment by establishing a National Directorate of Employment in January, 1987.

The National Directorate of Employment (NDE)

The National Directorate of Employment (NDE) was created to help combat the problem of employment in the country. This is to be achieved through vocational education for young school leavers. The deficiency of the educational system led to a retraining program for both high school leavers and college graduates. Participants of NED programs are trained in either a specific vocational skill or given the opportunity to acquire the skills necessary to own and manage a small scale business enterprise. One of the major programs of the NDE is youth development and vocational skills development.

Curriculum

Youth development and vocational skills development operate the open Apprenticeship scheme. In this program, unemployed youth are placed as apprentices in private enterprises designated as "training Centres." The duration of the placement ranges from one to three years. Much depends on the course the trainee chooses and his or her previous experience. Training is 20% theoretical and 80% practical work at the training centres. Trainees must have at least an elementary education. College graduates also participate in the programs.

Training Centres

Training centers are located and approved by the inspectors that are working for the NDE. The trainers or training stations are supposed to have the manpower and facilities to train the participants in their chosen trade. The trainers may not have high academic qualifications but they need to have proven expertise in their profession. The training



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center should be able to offer courses in one or more of the approved list of 86 trades. These include refrigeration and air conditioning, computer technology, brick making, plumbing, leather works, interior decoration, and others.

Financial Support

The Open Apprenticeship Program is financed by NDE. The training centers receive N150.00 p.a per student enrolled with them. The student receives N50.00 per month for participating in the program. Participants of the programs of the NDE who wish to go into private business are encouraged to do so. They are given tool kits and working capital in the form of loans ranging from N500.00 to N2,000.

Most students of the open apprenticeship program are given log books. They are supervised by the trainer and inspectors from the Directorate of Employment.

Agriculture Program

In this program, graduates of agriculture are encouraged to set up their own farms and other agri-oriented businesses. They are given loans up to N25,000 to set up an agriculture enterprise and employ other unemployed people. Agricultural enterprises set up so far include swine, poultry, and crop production, as well as oil palm and cassava processing.

Achievements and Conclusions

After one year's existence, the NDE has placed about 80,000 youths in various vocational training programs. Over 20,000 unemployed college and high school graduates have benefited from the public works program. The retraining exercise being carried out has indirectly exposed the inadequacy of the educational system that encourages more liberal arts education and less vocational education. From the achievement recorded thus far by the NDE under the open apprenticeship program, Nigerians now realize that private enterprise and government can be partners in progress and work toward the achievement of national objectives.

Arguing With Success

"Never argue with success" is an old adage which it seems many people do not observe. As agricultural educators, it seems we are forever encountering people who want to argue with the need for a highly successful educational program — vocational agriculture. In this era of the scramble for educational excellence and increasing graduation requirements at the secondary level, the administrative expedient seems to be to question the value of elective educational programs. It is very easy to point to decreased enrollment in such programs as evidence of their lack of success and diminished need. Such a conclusion "flies in the face" of ever increasing needs for many elective programs. Also, overlooked is the obvious reason for decreased enrollments — namely, increased graduation requirements and mandated remedial programs.

What assurance do we have that requiring more units of credit at the secondary school level will increase student qualifications? Certainly more of the same inadequate instruction or more courses with low student expectations are not going to enhance student performance and may, in fact, considerably decrease students' preparation for life after high school.

Increased graduation requirements which reduce or in fact eliminate the opportunity for the student to enroll in elective courses may significantly reduce students' preparation for life after high school. The reduced preparation can be expected to occur in the student's occupational preparation as well as in his or her ability to understand and appreciate the arts, business procedures, and communications.

The high school curriculum resulting from increased graduation requirements becomes very narrow and filled with required courses, college preparatory courses, remedial reading, mathematics, and science courses. Lost is the richness associated with comprehensive secondary schools of the past and the ability to serve the diverse needs of the individual student. The restricted curriculum offerings appeal to and serve the needs of a smaller number of students and thus schools can expect to serve a lower percentage of the potential student body.

Testing the Product

It is commonly accepted practice for industries to test and evaluate their products to determine the success of the production process. Likewise, it seems logical to assume that former students who are the product of our educational system should be consulted in assessing the need for and value of an educational program. A 10 year study of vocational agriculture program completers in Arizona provides some very important data. The study includes both a one-year and a five-year survey following program completion. The study includes self reported results one year after program completion from over 1,100 individuals representing about 41% of those program completers contactable for the



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years 1977-1985. Also, included are the self-reported results five years after program completion for over 360 individuals for the years 1978-1981.

One Year Follow-Up

Post-Secondary Education

The general public and some school administrators like to believe that every student graduating from high school goes on to college and therefore, there is little, if any, need to provide occupational education at the secondary level. Certainly, these views are not supported by the follow-up reports provided by vocational agriculture program completers in Arizona. During the first year following completion of high school, half (50.1%) the completers did not attend a post-secondary school and only 11.0% attended school on a full-time basis and did not work. Thus, 89% of the former students were in situations where they required employment skills upon completion of high school. It is obvious that vocational agriculture program completers need and use the vocational preparation received at the secondary level (See Figure 1).

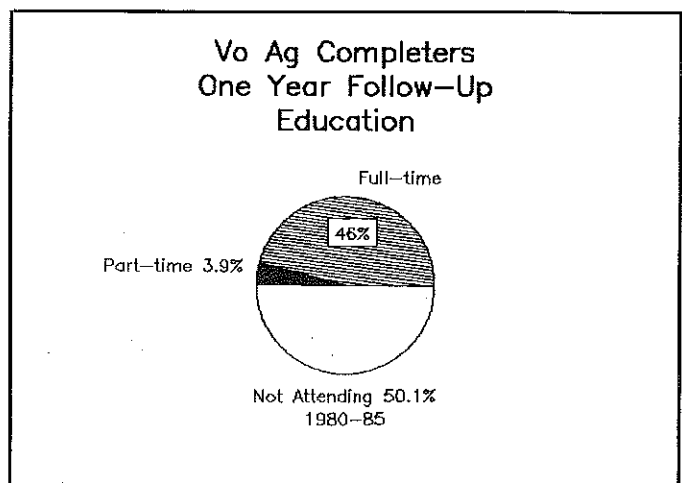


FIGURE 1: Percentage of 1980-1985 Vocational Agriculture Program Completers' Educational Status One Year After Completion of High School.

(Continued on page 16)

Arguing With Success

(Continued from page 15)

Unemployment

Critics who say we should keep students in school longer because all they do upon completion of high school is go on the unemployment rolls and cause problems are also mistaken. While it is acknowledged there is a high rate of unemployment among teenagers (16-19 years of age), such is not the case with all youth in this age range. The reported rate of unemployment one year after completion of high school for those vocational agriculture program completers in Arizona not attending post secondary schools has averaged 4.9% during the 1978 to 1986 period. The reported rate of unemployment has varied from a low of 2.2% in 1979 to a high of 8.6% in 1978. These data compare to an overall national unemployment average for youth in the 16 to 19 year old bracket during the same years of 17.8% (1980) to 23.2% (1982) - (U.S. Bureau of the Census, 1986, p. 390). Corroborating these lower rates of unemployment is a study conducted in Ohio. This study found that workers with vocational education had a lower unemployment rate than the general work force (cited in Staff, 1987) (See Figure 2).

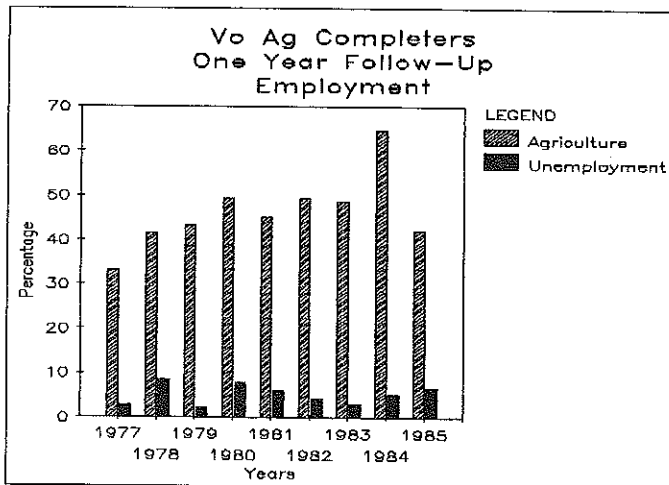


FIGURE 2: Percentage of 1977-1985 Vocational Agriculture Program Completers' Rate of Unemployment and Agricultural Employment One Year After Completion of High School.

Employment

Those who have criticized or suggested vocational agriculture programs are training for non-existing jobs and developing competencies that are out-dated need to consider the results of the follow-up studies. A total of 46.9% of the vocational agriculture program completers who were employed or self-employed one year after completion of high school were working in agriculture or agricultural-related jobs. This percentage has varied over the years from a low of 33.3% in 1977 to a high of 64.8% in 1984 (See Figure 3).

Competency Development

Asked if they had used the competencies developed in vocational agriculture during the first year following high school, 97.0% indicated they had used the competencies: 1) vocationally, 2) avocationally, or 3) both vocationally and avocationally. These figures certainly refute the contention that there are no employment opportunities in agriculture or that the competencies taught are out-dated.

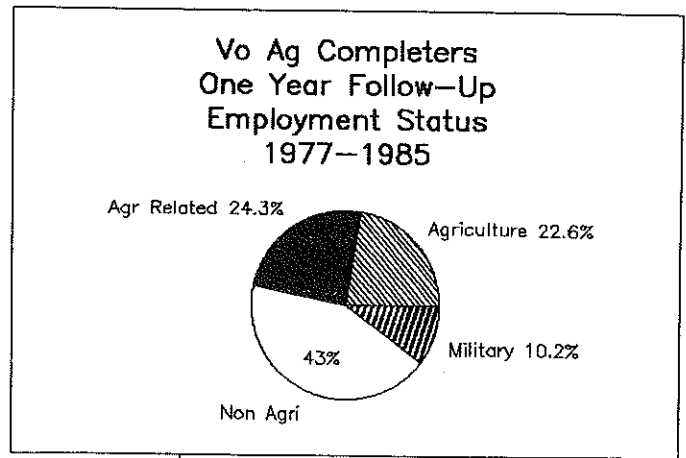


FIGURE 3: Employment Status of 1977-1985 Vocational Agriculture Program Completers One Year After Completion of High School.

Indeed, one can conclude that vocational agriculture does, in fact, develop competencies students use upon graduation and for which many find occupational employment in the broad field of agriculture (See Figure 4).

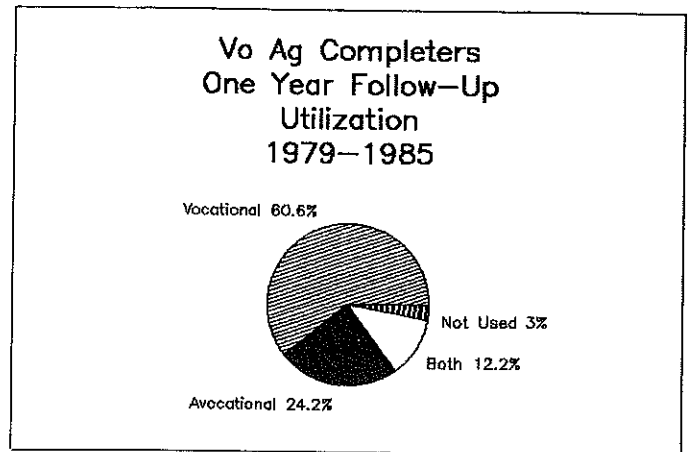


FIGURE 4: Utilization of Competencies Developed in Vocational Agriculture Reported by 1979-1985 Vocational Agriculture Program Completers' One Year after Completion of High School.

Five-Year Follow-Up

Data on vocational agriculture program completers five years after program completion are limited to those individuals graduating from Arizona high schools in 1978, 1979, 1980, and 1981. The results for 1981 are somewhat limited due to the use of a different questionnaire not providing parallel information to prior years. However, in spite of a smaller number of respondents (363), it is obvious that vocational agriculture is a highly effective and desirable educational program at the secondary school level.

Unemployment

At the time of contact (5 years after graduation from high school) only 4.1% of the vocational agriculture program completers were unemployed. This is slightly lower (4.9%) than the average percentage reported after one year. Several of the same individuals reported unemployed after one year were similarly reported after five years (See Figure 5).

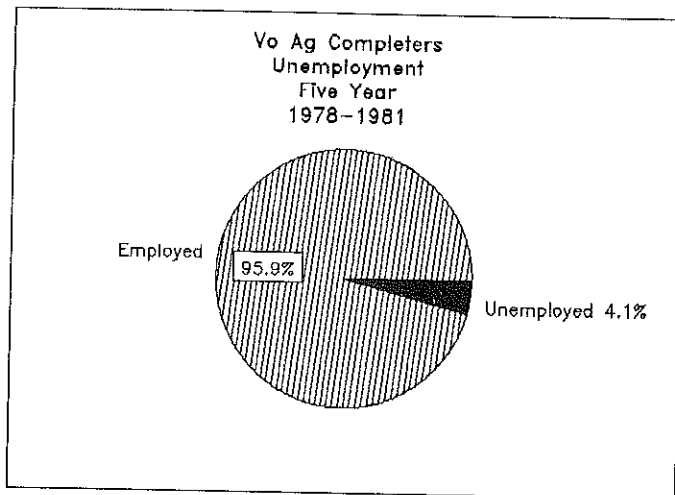


FIGURE 5: Percentage of 1978-1981 Vocational Agriculture Program Completers' Employed/Unemployed Five Years After Completion of High School.

The reported unemployment rate for each class (1978-1981) of vocational agriculture program completers is shown in Figure 6. It should be pointed out this rate represents current status five years after program completion, i.e. 1978 class reported in 1983. The unemployment rate varied from a low for the 1979 completers reported in 1984 of 2.3% of a high of 5.4% for the 1978 program completers reported in 1983.

Agricultural Employment

A total of 37.8% of the program completers were employed or self-employed in agriculture or agricultural related occupations five years after program completion. Significantly, 66.9% of the five year program respondents, 1978-1981, reported having held one or more agricultural jobs during the five years following high school graduation (See Figure 6).

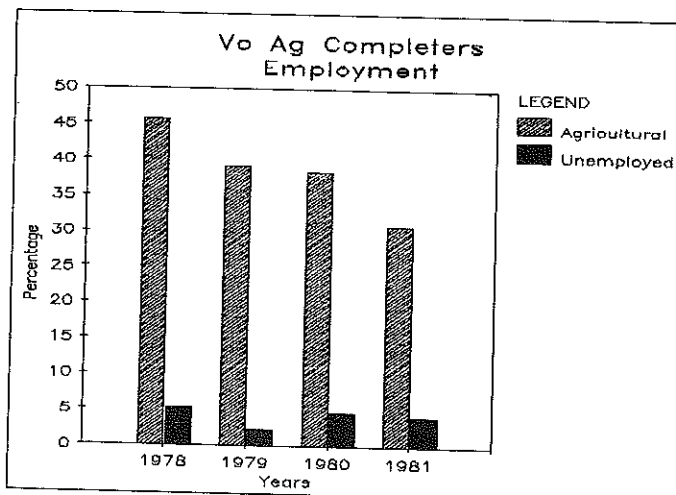


FIGURE 6: Percentage of 1978-1981 Vocational Agriculture Program Completers' Rate of Unemployment and Agricultural Employment Five Years After Completion of High School.

Post-Secondary Education

During the five years following graduation from high school, 52.3% of the program completers reported participation in some type of post-secondary education. Only 32.7%

(88) had completed a post-secondary degree program. A similar number (77) representing 28.6% of those responding had not completed any form of post secondary education. Thus, the only vocational education received by these individuals was at the secondary level.

Re-Enrollment

Perhaps the greatest indication of program satisfaction was the response of the question asking if the former students could replan their high school courses in the light of their experiences five years following graduation would they again enroll in vocational agriculture. An amazing 96.1% indicated they would in fact enroll. The 1981 class responding in 1986 had a positive response of 98.9%. This is an overwhelming endorsement by those who represent the product, know the process, and are in the best position to judge its value. It is fair to say that those who best understood the vocational agriculture program support it overwhelmingly (See Figure 7).

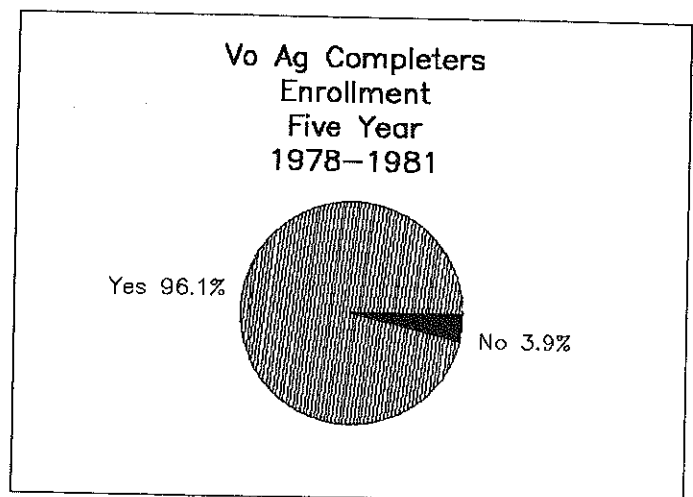


FIGURE 7: Percentage of 1978-1981 Vocational Agriculture Program Completers' Who Would Enroll in Vocational Agriculture if Replanning High School Course-of-Study Five Years After Program Completion.

Summary

There is no question in the minds of former vocational agriculture students of the value of this elective program. Secondary schools must be extremely cautious in adjusting graduation requirements or making curricular changes which reduce the opportunity for students to participate in elective programs. We, as agricultural educators, must take every opportunity to inform our many publics of the value of and need for more not less agricultural education at the secondary level. We must once again lead the way in assuring that public secondary schools will continue to serve all students and not become college preparatory institutions serving a small percentage of the students. Certainly, we have success on our side which should make our effort even more intense. After all, who can argue with success?

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Entrepreneurship Education in Vocational Agriculture

Vocational agriculture education became established during a period in United States history when a large portion of those employed were engaged in production agriculture. Thus, vocational agriculture has a long history of offering a curricular program which supports individuals in production agriculture. Many rural schools in the United States continue to offer a curricular program based on sound educational techniques for teaching agricultural education.

The farm problems over the last several years have resulted in a decreasing number of workers attaining employment in production agriculture, but "the agriculture industry has evolved such that the greatest numbers are employed in occupations which support production agriculture" (Wardlow, 1985).

The Curriculum

Agricultural education has historically provided curricular offerings which permitted those engaged in production agriculture to be successful. However, the number of career opportunities in production agriculture is decreasing while the number of career opportunities in areas supporting production agriculture continues to increase. These new and emerging career opportunities in agribusiness offer new choices to those enrolled in vocational agriculture programs. Vocational agriculture must provide curricular offerings in both production agriculture and agribusiness to meet the educational needs of the changing agricultural workforce.

Curricular offerings in agribusiness must include components of entrepreneurship such as starting an agribusiness, agribusiness management principles, money management, business procedures, recordkeeping, and marketing.

Entrepreneurship Basics

According to William E. Simon (1988), a successful financial risk taker associated with The University of Rochester, entrepreneurship is "taking advantage of the next opportunity before it becomes apparent to everyone else." Throughout the nation there are opportunities in agriculture and agribusiness waiting for the entrepreneur to develop them. Agricultural examples include growing strawberries, blueberries, nuts, gourmet vegetables, ground cover, medicinal herbs, commercial catfish production (Newman & Powell, 1986), developing and marketing greenhouse specialty crops, collecting decorative plants (Nelson & Williamson, 1979), consulting, and providing recordkeeping services.

Entrepreneurship, in less than the purest sense, is the ownership and operation of a small business. This definition provides relativity to those endeavors which are established and ongoing but could benefit from upgrading and/or redirection through the refinement of entrepreneurial

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skills. Students in vocational agriculture programs who take advantage of entrepreneurship education can use them in new agribusiness ventures, existing farm/agriculture businesses, or may take these generalizable skills into many other nonagricultural small business possibilities. No matter how entrepreneurship skills are utilized, they will serve to build and improve the overall economic climate throughout the nation.

Why Entrepreneurial Education?

Why should vocational agriculture or any other vocational programs be concerned with helping students develop small business skills? The answer is threefold. First, both vocational education and entrepreneurship education are based on skill development. Teaching methods and strategies for disseminating entrepreneurial skills are already a part of the vocational teacher's knowledge base.

Second, the need for this type of education is more than apparent in the business world. The Joint Council of Economic Development, in association with the Small Business Administration (1985), has published facts concerning the nature and success factors relating to small business ventures: (a) over 700,000 new businesses are incorporated each year, over 13,000 per week, not including businesses which operate without incorporation; (b) about half of the new businesses fail in their first few years of operation, (c) about 40% of today's entrepreneurs have a high school degree or less, and (d) 38% of entrepreneurs have never had any training in entrepreneurial business skills.

Third, vocational agriculture teachers can take advantage of available materials and resources for teaching entrepreneurship skills. No one is suggesting that production agriculture teachers develop materials to teach entrepreneurship or for that matter, forsake established curricula offerings in the name of entrepreneurial progress. A teacher in any vocational area who sees the need and benefit of providing students with entrepreneurial skills can infuse a small business curriculum into existing offerings. For agriculture, these may be in the form of supervised occupational experience projects, classroom offerings, laboratory, and/or FFA activities.

Competencies and Skills

Agribusiness education competencies and skills have been proposed by different authorities at different times. Many

state/school districts do encourage the teaching of them. However, unavailability of actual teaching units and/or student modules (activities) deter both experienced and new teachers from infusing or developing entrepreneurship education activities into existing vocational agriculture programs.

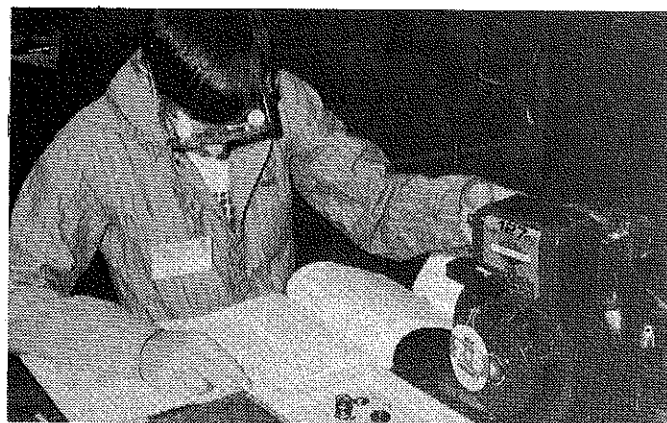
For any educator who is interested in imparting the skills of small business development to students, there are curriculum materials and support agencies to augment the established curriculum offerings. Among the curriculum materials are those that have been developed by the National Center for Research in Vocational Education (Ashmore & Pritz) at The Ohio State University. Some states such as Kentucky have developed curriculum materials which take advantage of local/regional needs and resources. Included in Kentucky's entrepreneurship education program are the following validated tasks:

1. Define entrepreneurship.
2. Determine risks of entrepreneurs.
3. Determine personal qualities needed for successful entrepreneurship.
4. Differentiate between successful and unsuccessful small business operations.
5. Differentiate between private enterprise and other economic systems.
6. Conduct market research.
7. Investigate sources of help and advice.
8. Investigate local/area business trends.
9. Identify impact of small business trends on state/national/international business.
10. Identify potential clientele (Miller & Williams, 1987).

Curriculum Materials

Even though the National Center for Research in Vocational Education and Kentucky materials as well as many other entrepreneurship education materials are generic in nature, the adaptation to agricultural education could be easily accomplished.

In addition to curriculum materials, vocational agriculture educators can and should take advantage of the services available through local, state, and national agencies dedicated to successful small business development. These include the Small Business Administration, the Chamber of Commerce, Small Business Development Centers, and the Council on Economic Development. On the local level, the use of entrepreneurs and agencies such as financial institutions will not only make the teaching of entrepreneurship education less demanding for an already involved vocational agriculture educator, but also provide a new avenue for



A contestant in the National FFA Agricultural Mechanics Contest reviews a Briggs and Stratton technical manual before installing an engine valve. Entrepreneurs need theoretical and practical application experiences. (Photo courtesy of Glen Miller, University of Arizona, 1988).

positive community involvement for the students and vocational agriculture programs.

Concluding Thoughts

Vocational agriculture has historically provided marketable skills to individuals engaged in production agriculture. However, with the changing clientele in vocational agriculture, traditional skills are not sufficient today to ensure success in new and emerging careers in agribusiness. Vocational agriculture must continue to provide marketable skills as well as to revise its curricula to include marketing skills for those individuals who want to become agribusiness entrepreneurs.

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Change of Address for Editor

Effective August 15, the Editor will have a new address. Contact him at:

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Dr. Bowen will be the first Rumberger Professor of Agriculture.

Impact of USDA Challenge Forum II on Education in Agriculture

The current farm situation focuses attention on the changing needs of agriculture. Education in agriculture emphasizes improved productivity while, with an estimated 150 million excess acres of production capacity, increased productivity can only aggravate the depressed farm situation.

In October 1984, then Secretary of Agriculture John Block called on representatives from industry, academia, and government to attend a challenge forum titled, "New Uses For Farm Products." The issue stated was, "The development of new uses for farm products must be encouraged in order to encourage the growth of this nation's farm economy." As a result of the Challenge Forum II, "The New Farm and Forest Products" task force was established. The mission of the task force is to devise and propose a plan of action to develop and commercialize new products from the nation's farms and forests to be used by the agricultural and industrial communities to meet the needs of our country. The plan will incorporate positive steps and initiatives involving collaborative action between government, academia, and industry. The final report of this task force was presented to Secretary of Agriculture Lyng June 25, 1987.¹

In his challenge to the conference, Secretary Block stated that the production capacity of the American farmer had outrun the capacity of the economy to consume, and that government attempts to control production and surpluses have been costly. He further stated that, given the present situation of the American farmers, the world trade situation and the American economy, we must explore new directions for agricultural products and markets which will require the combined efforts of the producer, industry and government.²

In 1935, Wheeler McMillen, who was honored at the challenge forum, gave the opening address to the first national Conference on Agriculture, giving this challenge.

"We are today utilizing but a small portion of the productive power of our cultivated soil, and an even lesser proportion of the productive power of our agricultural energies. We, who are food producers, have felt ourselves limited by the inelasticities of human stomachs. Few of our customers, however rich, seem to want more than three meals a day, and farmers can feed the country with one hand, with half the energies they have available.

"In contrast, the American people have an apparently infinite capacity, given adequate purchasing power, to consume the products of industry and of agriculture other than food. Therein lies an opportunity of greater magnitude than we can comprehend without careful examination.



BY WILLIAM STOLL

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"A sound agricultural future for the United States is entirely possible, a solid future based upon the equitable exchange of commodities and goods with American industries."¹

The National Chemergic Council was formed to spark interest in the expanded industrial use of farm products. The challenge to American agriculture remains the same today: to find and develop new markets. We must develop new ways to utilize the tremendous production capacity of agriculture.²

As educators in agriculture, we need to recognize that the production capacity of the American farms represents the only renewable resource available. Through the process of photosynthesis, the energy of the sun transforms carbon dioxide into complex organic chemicals of industrial importance.

In 1978, the petrochemical industry in this country consumed 470 million barrels of oil for feed stock and 369 million barrels for fuel. Nearly every organic chemical now being made from petroleum can also be made from biomass. The critical agricultural materials act, PL 98-284 of 1984, restates the importance of developing agricultural feed stocks, not only for national security, but also for the stability of the farm economy.

To realize the industrial potential, the agricultural segment must be looking at new crops as well as new uses for existing crops. Currently, we are using 200 million bushels of corn for production of alcohol to be mixed with gasoline. Alternative crops providing products for industrial application include Crambe, Cuphea and Medowfoam for oil production, Guayule for natural rubber production, and Jojoba for a wax to replace sperm oil. There are many other possibilities being investigated.

For technical education in agriculture, this means some changes in emphasis. Technical education in agriculture does and should emphasize the most efficient and cost effective

methods of production because low cost feed stock is essential if agricultural production is to compete. Emphasis must be placed on production to meet the needs of the market place and production planning to meet these needs. While productivity is needed to supply the demands of the market, overproduction is counterproductive.

The need for new markets to utilize the excess production capacity of the farm sector is evident. These markets may require crops or agricultural production which require different production and harvest methods as well as different marketing methods. Perhaps, much of what is now being taught will be applicable for the student in agriculture to

meet some of the needs of these new markets. However, to meet the needs of the future, education in technical agriculture must prepare the student to enter and participate in a different and changing agriculture where food or fiber may not be the end use, where new diverse crops will be needed, and where maximum efficiency in terms of cost will be critical to success.

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ARTICLE

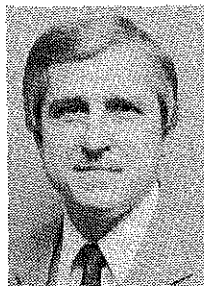
What Would Smith and Hughes Say Now?

Enactment of the Smith-Hughes legislation (The National Vocational Education Act, Public Law 347 — Sixty-Fourth Congress) involved several years of study and political activity. This early support for vocational education came because it was felt that such education would promote democracy, help create wealth by turning natural resources into valuable products, and promote national defense. On the last point, President Woodrow Wilson was a strong proponent because of the need for military preparedness. In 1915, President Wilson stressed that involvement of the United States in World War I was imminent and that vocational education was an essential component of preparedness. Industries must be ready when the time came, thought Wilson.

Under the leadership of Senator Hoke Smith of Georgia, Chair of the Senate Committee on Education, and Congress member Dudley M. Hughes of Georgia, Chair of the House Committee on Education, the first National Vocational Education Act was signed by President Wilson on February 23, 1917. Within 10 months all 48 states had accepted the vocational agriculture provisions except Rhode Island (Swanson, 1962).

With the Smith-Hughes Act, a partnership was underway. Public secondary education now had a federal presence. The federal government was now a partner with the states and local governments in an education endeavor. States had to make certain assurances if they were to receive federal funds; therefore, local schools now had curriculum directives from the federal level.

Since 1917, a number of amendments and acts relating to vocational education have been enacted. Perhaps the most significant of these to vocational-technical education in agriculture was the Vocational Education Act of 1963. This is because it expanded the program beyond production agriculture to include agribusiness areas. In 1984, The Carl D. Perkins Vocational Education Act (Public Law 98-524) amended the 1963 Act. Again, priorities shifted with stress on vocational education for special needs populations. Smith and Hughes were likely more concern-



BY JASPER S. LEE

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ed with national defense than with equity for the handicapped, disadvantaged, criminal offenders, single parents, and others.

The Smith-Hughes Act was for the purpose of promoting vocational education. Funding provisions specified that major portions of the amounts appropriated would be for the salaries of teachers, including agriculture teachers. The funds could also be used to prepare teachers, finance state boards for vocational education, and operate a Federal Board for Vocational Education. To receive the benefits, states had to prepare plans describing the programs to be established.

More recent legislation has redirected the use of Federal funds. The Carl Perkins Act stresses access of people to vocational education, especially those who have special needs; providing needed remedial general education for vocational students; and improving and expanding vocational education. State plans are required. State councils on vocational education are to be formed.

Over the 70 years, Federal funding specifically for vocational agriculture has ended. *In practice, little to no Federal funds go into regular local programs.* The priorities expressed in the legislation of 1917 have shifted emphasis and left states and local governments with the predominant responsibility for funding vocational agriculture.

Curriculum

The early concept of curriculum development was that it was based on local needs. As Storm and Davis described in

1921, "... vocational agriculture of the high school should be based upon the actual agricultural operations of your locality." They further stated, "no other plan will enable you to obtain the full and rich values and fulfill the important aims of the teaching of agriculture."

Individuals who today contend the programs should be based on local needs are increasingly in the minority when it comes to in-school programs for youth. The stress is now on specific occupational competencies. Further, core curricula are required in some states with little flexibility to include instruction related to the solving of local agricultural problems. Efforts to regionalize and nationalize a standard curriculum are being made by some instructional materials development centers.

Adult education continues to focus on solving problems in the local situation. This is the only way it can be if we want adults to choose to participate.

Teacher Preparation

Federal funds allocated by the Smith-Hughes Act to the states for teacher education. Individuals to be trained as teachers should have had practical experience in agriculture. Departments for training agriculture teachers had been established in all states by 1921, usually in state colleges of agriculture (Storm and Davis, 1921). Little literature was available on teaching methods appropriate for agriculture, with most colleges using that prepared for training teachers of other subjects such as geography and mathematics. Many of the first teachers were veterans of World War I, often those who had been injured in the war.

The kind of preparation needed by teachers continues to be controversial. Over the years the predominance of vocational agriculture teachers has been college-prepared. Since the mid-1960s, some states have embraced the employment of non-degree teachers. These individuals have work experience but may have no college education. They are competent in their occupation but are not professionally prepared. Regardless, 94 colleges and universities currently have teacher education programs to prepare professional teachers for vocational agriculture.

Practical Experience

The Smith-Hughes Act stated that "... schools shall provide for directed or supervised practice in agriculture, either on a farm provided for by the school or other farm, for at least six months per year." This served as the momentum for after-school farm production enterprise projects, improvement activities, and supplementary practices. Students were often awarded additional high school credit if they properly carried out the enterprise. All students typically had such projects.

Through the years, emphasis has shifted. The Vocational Education Act of 1963 expanded the mission of vocational agriculture to include agribusiness areas. The concept of supervised occupational experience (SOE) emerged. Production enterprises were no longer required. Students could be placed in agribusiness and other locations to develop specific agricultural occupation competencies. Emphasis on practical experiences had declined as vocational centers emerged and multiple-period classes were used. In the early 1980s, efforts of the National FFA Center staff, notably Bob Seefeldt, refocused emphasis on SOE.

Community Organization

The early programs of vocational agriculture were carried out in small schools across the Nation. These schools were typically the hub of social life and community activities. In most communities, the teacher knew the adults and they knew him or her. Farm visitation and individual instruction was routine. The community was the classroom!

School consolidation, construction of area vocational centers, and teachers not prepared to function at the community level have resulted in the loss of much local community orientation. Many of today's teachers are school-based. They don't know the adults or visit on the farms and in agribusinesses. They use core curriculum instructional materials that don't require an analysis of the local area. The focus is often on the development of specific occupational competencies in school facilities, i.e., classrooms and laboratories.

Learning Produced

The earliest efforts under the Smith-Hughes Act to address teaching and learning included the importance of psychology in selecting teaching methodology (Storm and Davis, 1921). Teacher preparation to direct learning experiences was important. Through the years, the scientific method gave rise to the problem-solving approach to teaching. The approach focused instruction on the problems faced by farmers and youth in the conduct of their production enterprises. The students analyzed the problem, collected needed information, and applied the information to obtain a solution. The solution was then tested on the home farm, and the technology was adopted if it proved beneficial.

In the past decade or so, the trend has been away from problem solving to rote development. Specific objectives are given and students memorize the needed information. There may be little application to the real world, especially if standardized core curriculum guides are used. Instruction has tended to drift away from the development of problem solving skills in students. The use of problem solving in teaching agriculture was refocused by John Crunkilton and Alfred Krebs of Virginia Polytechnic Institute and State University in the book, *TEACHING AGRICULTURE THROUGH PROBLEM SOLVING* (1982).

Vocational agriculture leaders must strive to improve the education provided. They must staunchly defend those facets of the program that contribute to quality. They must seek new technology and advocate proven innovations. They must be strong as leaders; not fickle to political pressures and vocational education generalists. Further, vocational agriculture teachers need to re-assert themselves as local agriculture leaders — a status that has been abandoned in many places.

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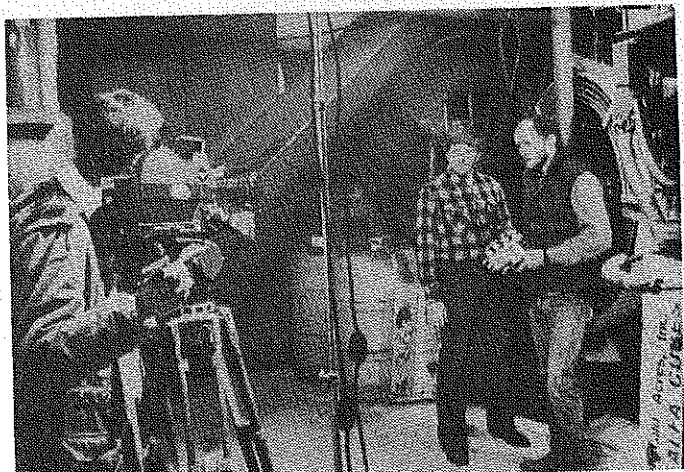
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1989 Themes

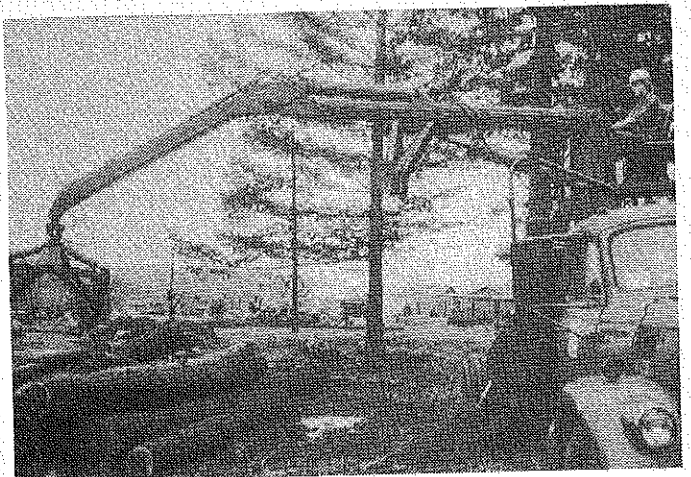
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Stories in Pictures

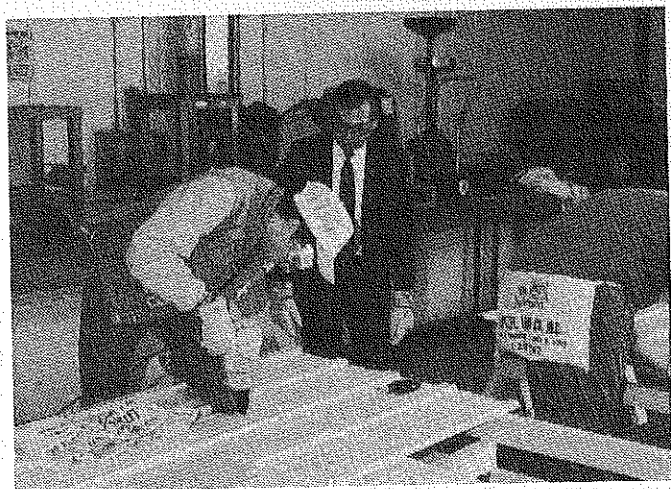
Entrepreneurship in Agriculture



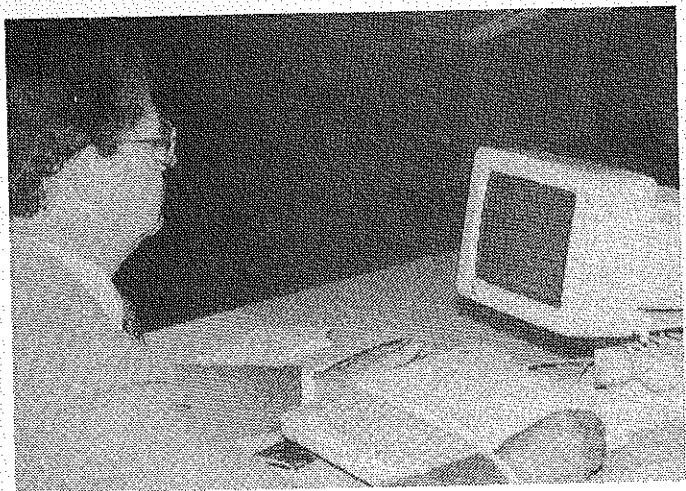
Elliott Nowells, far right, during shooting of the television special, "Hidden Harvests." Nowells takes advantage of his agricultural and communications experiences to produce a variety of materials through Clear Window, Inc. of Leesburg, VA, a business he started in 1983. (Photo courtesy of Clear Window, Inc.)



Student operating log loader at log deck. Such experiences often yield entrepreneurial opportunities. (Photo courtesy of Owen Sabin Occupational Skill Center, Milwaukie, Oregon.)



Jerry Kistler, District Sales Manager for Milwaukie Electric Tool Corporation, observes a contestant in the Sixteenth Annual Agricultural Mechanics Contest, Kansas City, Missouri. Industry representatives often serve as role models for budding entrepreneurs. (Photo courtesy of Glen Miller of the University of Arizona).



Bernie Staller, Executive Director of the National FFA Foundation, continues to practice the business skills he taught students in Wisconsin. Staller established one of the first agribusiness instructional programs in the U.S. Solid business skills are essential for budding entrepreneurs. (Photo courtesy of Dwight Horkheimer of the National FFA Center, Alexandria, VA.)