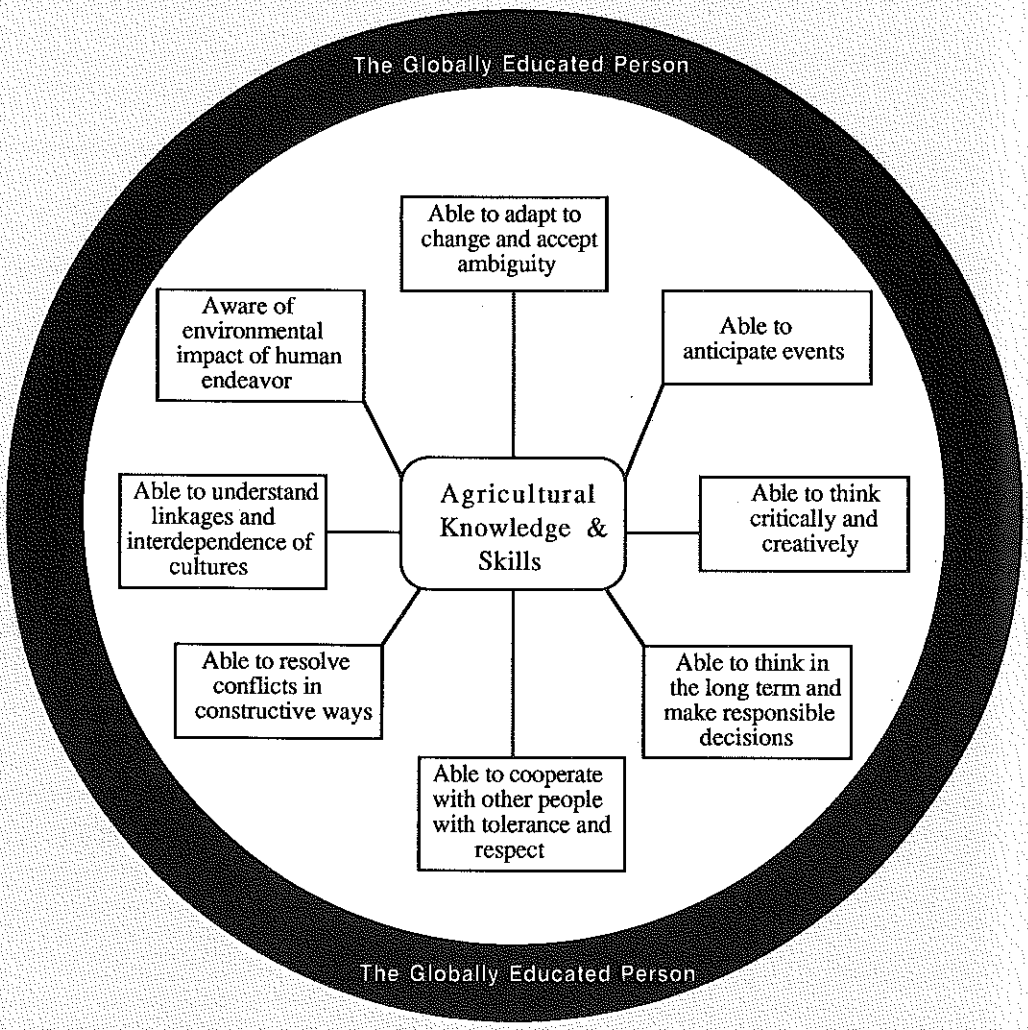
The
Agricultural Education
Magazine

April, 1990
Volume 62
Number 10



Goals of Global Education in Agriculture

THEME: Global Education

THE
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MAGAZINE

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PUBLICATION INFORMATION

THE AGRICULTURAL EDUCATION MAGAZINE (ISSM 7324677) is the monthly professional journal of agricultural education. The journal is published by THE AGRICULTURAL EDUCATION MAGAZINE, INC., and is printed at M & D Printing Co., 616 Second Street, Henry, IL 61537.

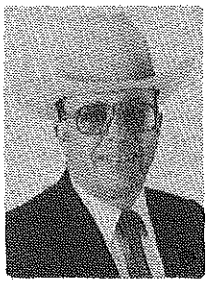
Second-class postage paid at Mechanicsville, VA 23111; additional entry at Henry, IL 61537.

POSTMASTERS: Send Form 3579 to Glenn A. Anderson, Business Manager, 1803 Rural Point Road, Mechanicsville, Virginia 23111.

SUBSCRIPTIONS

Subscription prices for THE AGRICULTURAL EDUCATION MAGAZINE are $7 per year. Foreign subscriptions are $20 (U.S. Currency) per year for surface mail, and $40 (U.S. Currency) foreign airmail (except Canada). Student subscriptions in groups (one address) are $4 for eight issues. Single copies and back issues less than ten years old are available at $1 each ($2.00 for foreign mail). All back issues are available on microfilm from Xerox University Microfilms, 300 North Zeeb Road, Ann Arbor, MI 48106. In submitting subscriptions, designate new or renewal and address including ZIP code. Send all subscriptions and requests for hardcopy back issues to the Business Manager: Glenn A. Anderson, Business Manager, 1803 Rural Point Road, Mechanicsville, VA 23111. Publication No. 73246

Promoting The Work Ethic



By Phillip R. Zurbrick, Editor

(Dr. Zurbrick is Professor and Acting Head, Department of Agricultural Education, The University of Arizona.

It is interesting to discuss the work ethic in this country. My experience suggests that most individuals have little difficulty in discussing and berating the perceived level of acceptance of the Work Ethic of others. But, when asked to describe the specifics of the Work Ethic, most people have little, if any, understanding of its various aspects. I have yet to meet anyone who acknowledges having read the work ethic or of knowing all of the details of the work ethic. This is indeed a serious and expanding problem that may ultimately have a devastating effect upon our very survival as a free and independent country. A message that can be learned from the monumental changes sweeping the Eastern block countries is that if you do not have a healthy work ethic that is supported by society, it soon becomes impossible to satisfy a country's need for even the basic necessities.

The country's international competitiveness and our standard of living are directly related to our productivity. Many leaders associate productivity with increased capital, economics of scale and availability of natural resources. David Kearns of Xerox has commented that, "Education is a bigger factor in productivity growth . . ." than all of the various economic factors. It is refreshing and encouraging to hear business leaders acknowledge the essential centrality of education to the productivity and economic well-being of our society. But, on what basis is such a hypothesis postulated? Is it based upon the development of individuals with business and management genies, or on the development of a vast task force of scientists and engineers? I would hope not! Evidence exists that we have not maintained our productivity through our failure as a country to develop and promote individuals with an understanding of and experience in production. We have too many M.B.A.'s in corporate leadership positions in this country with no production experience by comparison with other more productive countries. Further, productivity cannot be sustained by scientists, engineers, and corporate officers! Ultimately, productivity is determined by the collective dedication, efficiency, and output of the entire work force, 87% of whom require no post-secondary education.

The American Society for Training and Development reports that productivity losses caused by poorly trained workers, coupled with remedial training programs now cost business in this country 25 billion dollars annually. If the cost associated with poor workmanship, absence from work or non-productive activities on the job were included, the loss would exceed the 185 billion dollars annually spent on public education in this country. Thus, the dollar figures suggest that factors associated with the work ethic cost business 160 billion dollars a year. This does not include any of the cost associated with welfare support for individuals who refuse to work!

It is apparent that education is as crucial to our national productivity as David Kearns indicates, but education must contribute to the development of individuals with a healthy understanding of and appreciation for the work ethic. It is nearly incomprehensible to estimate how our productivity, international competitiveness and standard of living would be enhanced if every worker practiced undeviated promptness, sobriety and attention to duty. Business could expect a 20-30% increase in productivity if management would take the time to seek out and reward those individuals who: 1) work diligently; 2) enjoy their work; and 3) don't let unrelated activities distract them.

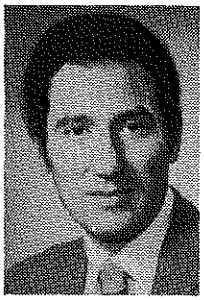
A serious problem in expecting education to develop individuals with a sound work ethic is that academic education, as commonly practiced, tends to destroy the work ethic. Academic education tends to reward those who have high intelligence, rather than those who work hard. Many teachers punish by assigning work and reward good behavior by avoidance of work. Is it little wonder that we develop young adults with the belief that work is to be avoided and that if you are smart you do not work? We must reverse such thinking and help young people understand that work is phychologically necessary. If they do not work, they die spiritually. Further, we must promote the mentality that the value of the individual is not in the kind of work performed, but in the quality of the work produced regardless of its nature.

Vocational education can play a major role in helping young people develop a strong work ethic. A variety of opportunities present themselves for teachers who are sensitive to the significance of the work ethic and are willing to use these opportunities for that purpose. Often these opportunities require heroic behavior. Teachers must have enough audacity to reward those who work hard even if this means not awarding those who have greater net worth or who have a larger more prestigious experience program. Similarly, teachers must be willing to evaluate and grade students based upon subjective work ethic related criteria and not totally on scores made on written examinations. This suggests that students with lesser ability for the same grade.

It seems obvious that vocational educators have a duty and responsibility to help students develop a healthy work attitude. Yes, this means the teacher must deal with a value and must be a role model of the work ethic. Philosophically, teachers must believe that the development of a wholesome work ethic on the part of their students is more important than the development of specific subject matter competencies.

THEME

Ag Ed's Role in Global Education: Unprecedented



By Robert A. Martin, Theme Editor

(Dr. Martin is Associate Professor, Department of Agricultural Education and Studies, Iowa State University.)

Have you counted the number of times the word "unprecedented" has been used in the media lately? With all the unprecedented events of a political, economic, military, scientific and technological nature happening very rapidly these days, it is difficult to find another word that expresses the point so well. Is it any wonder then that agricultural education as a profession has been involved in a few unprecedented events in recent months?

One of the most exciting unprecedented trends in agricultural education is that associated with the movement to add a global perspective to agricultural education in the United States. Coupled with this movement is the widening and deepening of the international experience base of professional agricultural educators and students of agriculture. Just a few short years ago, very few agricultural educators at any level were involved or even interested in being involved in international agricultural education programs. To some, getting involved in such programs seemed almost career-threatening. Now involvement in such programs is career-enhancing.

As agricultural education professionals scramble to be in "style," "in vogue," and "with it," regarding experiences in international agriculture and developing international education infusion programs for students, there are a few key points that should be considered:

1. Why should the Agricultural Education profession be involved in international agricultural education?
2. What is Agricultural Education's role in global education?
3. What is the future of global education in agriculture?

Why?

The need for developing an awareness of the global nature of the agricultural industry has become one of the major issues of our time. It has become increasingly apparent that if a person is to be considered educated in agriculture, he/she must be cognizant of the inter-relationship of various agricultural systems and the governments, cultures and societies in which they function. It is no longer sufficient to know how to produce food and fiber and conduct or manage the tasks in today's agricultural industry. Development and enhancement of one nation's agricultural system is unavoidably interwoven with those of other nations. If these developments and interrelationships are to be successful, it is critical that students of agriculture learn as much as possible about systems of agriculture in cultures and societies around the world.

In addition, agricultural educators are starting to realize that they hold the keys to bridging the gap between the technical agricultural development agents and the social scientists. Agricultural educators are being called upon to use their expertise in needs assessment/analysis, program planning, education delivery systems, and evaluation. Local agriculture teachers are being considered by some development agents to be excellent role models for local development of agriculture at the village level.

What Role?

The role that agricultural education can play in global education is multi-faceted. As agricultural education struggles to reform and re-invent its mission, there can be no denying that an international focus to instruction in agriculture provides one of the new horizons of the profession.

Among the many roles for agricultural education in the globalization of education are the following:

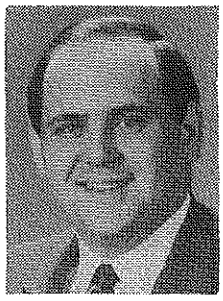
1. Add a global perspective to all instruction in agriculture at all levels - elementary, secondary, post-secondary and university.
2. Get involved in teacher exchanges with educators in other countries.
3. Facilitate student-to-student exchanges with other countries.
4. Work closely with other teachers in our local school systems (i.e. language teachers, social studies teachers) to foster international education activities for students.
5. Broaden agriculture experience base (of teachers) by becoming involved in short- and long-term projects in agricultural development to practice the principles of agricultural education in another country.

(Continued on page 10)

About the Cover

The goals of global education in agriculture focus on the individual acquiring knowledge and developing skills related to agriculture in the context of human development and understanding with an international perspective. Designed by Robert A. Martin.

The Council
Agricultural Education Operating In An International Marketplace



By John Pope, Special Editor
(Mr. Pope is Executive Director, The Council for Vocational and Technical Education in Agriculture.)

Agriculture no longer is limited to the United States, rather we compete in an international marketplace. Because of this perspective, the National Council for Vocational and Technical Education in Agriculture (The Council) has developed and is implementing a program to increase the teaching in agricultural education at all levels about the international relationships and their effect on American agriculture. This program will give supervisors, teacher educators and teachers the opportunity to experience first hand international agriculture, giving them the opportunity to infuse international components into the curriculum through in-service education, thus making American agriculture more competitive in a world economy.

The Council's project on infusing the study of international agriculture into the agricultural education curriculum is an effort to internationalize the current agricultural education curriculum. This project involves agricultural educators on the secondary, postsecondary and adult levels as well as individuals involved in the administration of agricultural education programs. The goal of the project is to involve agricultural educators in an international experience program and a curriculum development effort to infuse a global perspective into the study of agriculture.

States are selected for participation in this program on a competitive basis. Interested states submit applications to The Council which will in turn select states to participate. Each state participating in the project will select a team of educators to travel abroad to study international agriculture. These state teams will consist of one state supervisor of agricultural education, one teacher educator and three practicing agriculture teachers. The project will allow agricultural educators to experience first hand the agricultural system of another country. Through the use of private sector funds the participants travel to a foreign country for a two-week overseas experience that will enable them to study and experience all aspects of agriculture in an international setting.

The target audience for this project includes instructors of agricultural education at secondary, postsecondary and adult levels. The Council believes that the best way to make changes that will internationalize the existing agricultural education curriculum is through the instructors. By allowing the instructors to travel abroad, it is believed that they will be better able to assist in the development, dissemination and utilization of instructional materials related to international agriculture.

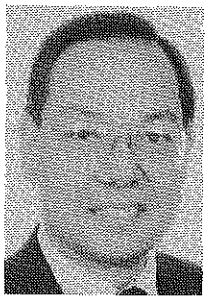
Students of agricultural education at the college and high school levels will be the eventual beneficiaries of this project. The students will receive instruction on the global nature of agriculture through their instructors who will have either participated in the overseas portion of the project or received in-service education in the area of international agriculture. Because the agricultural education students are also beneficiaries of the project, the scope of the project is greatly magnified.

After the completion of the overseas portion of the project, the participants will assist in the development of instructional materials related to international agriculture. These materials will then be distributed throughout the participating states through the use of in-service workshops. States selected for participation in this program will be required to show that sufficient funds exist to carry out these in-service programs.

The first group of agricultural educators participating in this program visited Japan in the summer of 1989. Educators from the states of California and Michigan were selected to participate in the initial effort. These states are currently in the process of concluding instructional units in international agriculture to be distributed nationwide in March 1990. Selection of the 1990 program participants will take place in January 1990. As a result of the 1990 program, additional units of instruction will be developed.

The project to infuse international agriculture into the agricultural education curriculum is an effort by The Council to address the need of stimuating new areas of interest in the agricultural education profession, and closely relates to the goals of the organization. This project is directly related to The Council's ongoing activities in the area of instructional material development. The international infusion project is a nationwide effort to help educators and students at all levels of instruction to learn more about the global nature of the agricultural industry.

A Florida Perspective on International Agricultural Education



By Carl E. Beeman and Jimmy G. Cheek

(Dr. Beeman is Professor and Chairman, Department of Agricultural and Extension Education, University of Florida; Dr. Cheek is Professor, Department of Agricultural and Extension Education, University of Florida.)

Providing leadership and programs in international education has long been a dimension and role served by American universities. However, until recent years agricultural education has not been a major component of this effort. This trend is rapidly changing. Today, many international higher education projects have a major component involving agricultural education with specific activities in teacher education, service to public school agricultural education programs, and extension education programs. This dimension is providing a new and challenging opportunity for university departments of agricultural and extension education.

Rationale

The rationale for increased involvement of university agricultural and extension education departments in international programs is threefold, namely: (1) It provides an excellent opportunity to provide service and technical expertise to developing countries; (2) faculty involvement in educational programs in other countries develops a better understanding of international agricultural programs, thus enabling us to better serve international students; and (3) it provides an excellent opportunity to further apply, test, and evaluate principles and components undergirding domestic programs, thus providing valuable "plow back" into these programs. Thus, these activities use and further develop our professional expertise.

There are many additional personal and programmatic benefits to be gained from participating in international experiences such as increased interest on behalf of faculty in international education, broadening experiences, travel, and the opportunity for learning about new cultures, new educational programs, and different governmental structures. Despite these additional benefits, the three major reasons previously listed forms the primary rationale for becoming involved in international work.

Current Involvement

Teaching International Students

Our department has attracted international students for many years. Because of its geographic position, Florida agriculture remains unique in many respects. The state is a peninsula surrounded by water, with a sub-tropical environment that has little in common with the rest of the country. Agriculturally and biologically, Florida is more similar to countries in the Caribbean and Central and South America than to our sister states to the north. Likewise, students from these countries choose to study in Florida because of the similarities in agriculture with their particular country.

As a result, the University of Florida is a very attractive location for international students, especially those from the Caribbean, Central America, South America, and Africa. Historically, our major involvements with international education have been in the form of teaching, counseling, and advising international students. Teaching and counseling of those students are important priorities in our graduate and undergraduate programs. The involvement with international students has sparked the interest of faculty in educational programs in other countries and created a commitment on behalf of the faculty to serve those students better. To do so, the faculty has sought other ways to become actively involved in international activities. As departmental faculty become more involved with various international activities, our program will better meet the needs of international students.

Faculty in Africa

The Institute of Food and Agricultural Sciences (IFAS), Office of International Programs and Center for Tropical Agriculture at the University of Florida administers a USAID contract to support the development of the University Center for Agriculture in Dschang, Cameroon. This project, which began in 1982, is developing an agricultural university in Cameroon based on the United States land-grant model. This university is a vital part of Cameroon's plan to recognize and expand its educational system so that university programs are more closely directed toward Cameroon's developmental needs.

Through this program the Department of Agricultural and Extension Education has had three faculty members on long-term assignments at the University Center for Agriculture in Dschang. One faculty member was on a two-year assignment and the other two were on one-year assignments.

Because of this involvement, one student has enrolled in our program seeking a graduate degree and others majoring in related departments have enrolled in courses within our department. One faculty member spent two weeks studying and evaluating the projects and two faculty members

developed a two-week workshop on developing an Extension outreach program. In addition, other faculty in our department have had or will have an opportunity to observe and contribute to the Cameroonian program on-site, thus broadening their experience and learning and strengthening valuable educational concepts. Also, faculty have been enrolled by providing input to the development of the University Center for Agriculture.

Strengthening Grant Activities

Involvement in the Strengthening Grant of the University of Florida via a sub-grant enabled departmental faculty to become more actively involved in a variety of international activities.

First, two agricultural educators, who have extensive involvement in international education, were identified and invited to spend three days each in our department. While in the department they conducted seminars, counseled with faculty, and shared their international education programs.

Second, one faculty spent a week at Escuela Agricola Panamericana (EAP) in Zamarano, Honduras, observing the program and contributing to an evaluation of EAP. The purpose of the visit was to acquaint the faculty member with the school and explore the need for and the methods of establishing a formal working relationship between EAP and the department. The faculty member also participated on a task force that the Academic Committee of the Board of Directors appointed regarding the implementation of a fourth year program leading to the Ingeniero Agronomo degree.

Thirdly, another faculty member spent a week visiting two United States' universities with exceptional participation records in international education. The purpose of these visits was to determine what these institutions were doing in the field of international education, specifically in departments of agricultural education, and to gather ideas about how the Department of Agricultural and Extension Education, University of Florida could become more actively involved in international education.

Participation in the activities of the Strengthening Grant resulted in all faculty becoming, not only interested, but more involved in international education.

Bahamas Program Evaluation

Interest generated through the strengthening grant activities resulted in another faculty member spending two weeks in the Bahamas. The purpose of this project was to review the overall agricultural education program in the Bahamas and make recommendations for improvements, to determine employment opportunities for agricultural graduates, to review previously developed instructional materials, to determine teacher education needs, and to determine agricultural problems of the country. These activities resulted in formal recommendations for improving agricultural education in the Bahamas.

Escuela Agricola Panamericana (EAP) Short Course

As a result of the previously mentioned visit to the Escuela Agricola Panamericana in Honduras, EAP requested faculty members from the department to conduct a two-week short course for college faculty on "Improving College Teaching." The department agreed to participate in this activity because it was consistent with the departmental mission, our desire to become more actively involved in international education in Central America, and the desire of the Office of International Programs within the Institute of Food and Agricultural Sciences for the department to become more involved in international education. The short course was sponsored by the United States Information Agency (USIA).

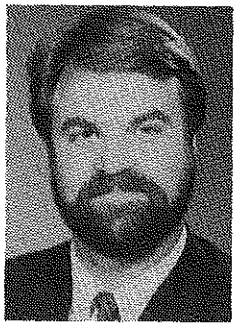
By participation in this activity, faculty provided important and needed assistance and at the same time became more aware of agricultural education in an international setting and further developed the department's contacts with a variety of international agencies such as USAID and USIA. The faculty's ability to plan and conduct in-service educational activities in an international setting was further developed and additional international experience was gained, thus enabling the department and IFAS to further develop its ability to address problems related to agricultural and extension education in an international setting.

Currently, plans are underway to conduct another two-week short course at EPA. Content will involve Computer Managed Instruction, Developing Effective Visuals for College Teaching, and Improving College Teaching.

Summary

International agricultural education offers a new educational dimension for departments of agricultural and extension education in American land-grant universities. Involvement in international education provides faculty the opportunity to make contributions leading to further development of agricultural and extension education programs in international settings and providing valuable "plow back" into domestic programs. Our department looks forward to further involvement on both short-term and long-term international assignments as they relate to our mission.

Software Sampler
Electronic Grade Book Programs



By Jeffrey A. Wood, Special Editor
(Dr. Wood is Associate Professor and Coordinator of Agricultural Education, Department of Agriculture, Illinois State University.)

Several software products are commercially available for teachers to manage student evaluation and for preparing individual and cumulative class grade reports. Most are easily mastered but few offer the options and ease of use as the Hobar series of electronic grade books. The Hobar programs are marketed under the names of Super Grade Book, Grade Book, and the recently released Grade Book Manager. The latter is for use with IBM PC MS-DOS 3.0 or greater. The Grade Book is available for use with the Apple Series II+ through IIGS and IBM PC MS-DOS. The Super Grade Book is specific to the Apple family of microcomputers.

Grade Book

The program enables teachers to record their class scores on a floppy disk. The teacher may select a roster, create a roster, change or delete names, and print class rosters with or without student ID numbers. The IBM version of the program includes assignment routines, such as adding, changing or deleting assignments, statistical analysis of assignments, and printing assignment lists or frequency charts. Score routines include posting or changing scores to a roster. There is also a capability for sorting students by name or by ID number. The IBM program will calculate the mean, median, mode, high and low scores, standard deviation, variance, percentage and z-scores. An option in the IBM Grade Book program is the ability to assign weights to different assignments. Thus, for example, an instructor may choose to weight a single assignment as 25% of the student's final grade and the remainder of the scores equal to 75% of the final grade. The program does not, however, permit users to include extra credit unless it is specified as an assignment and included in the overall point or percentage total. Missing scores in the IBM version are handled by entering a negative one value for the student. These missing scores will then be omitted from any computations regarding class statistics.

The IBM version of the program is supported by MS-DOS 2.1 to 3.2, requires 256K of memory and is available in 5.25″ or 3.5″ diskettes. The Apple version requires 48K of memory and DOS 3.3. It is available only on 5.25″ diskette.

Documentation is included with the software and is written in clear language. A very concise and easily understood explanation is provided for using the program. Users should find the section on statistics very helpful. Even the most novice among computer users should find this program easy to use and a valuable addition to one's teaching and management tools. A problem report form is also included with the Hobar Grade Book program which may be handy in reporting errors or problems with program operation. Though it is unlikely that it will be needed, it demonstrates Hobar's commitment to providing quality software for use in agriculture classrooms. The program cost is $29.50 for the Apple version and $39.50 for the IBM version. Backup copies are available for $7.50 each.

Super Grade Book

The Super Grade Book is a solid program which will serve you admirably. The user should be able to record and analyze grades for several classes since the program language is contained on one diskette and student data on another. The program is available for use on the Apple II+ through IIGS. It requires 48K of memory and DOS 3.3. The program includes excellent documentation with a lengthy explanation of statistical analyses. It is not written like a standard statistical textbook; instead, it is easily understood and includes many examples. A drawback to this program is that missing scores will be included in computations concerning class averages. This would distort the mean score or average for the actual number of students completing a given assignment. If a student does not make up the missing assignment, statistical analyses would have to be performed by hand. It should be noted that the documentation is very clear on the point regarding missing grades.

Two disk drives are recommended for use with the Super Grade Book program, though it may be used with a single drive system. The program costs $39.50 and backup diskettes are available for $7.50 each.

Grade Book Manager

This program was written using Turbo Pascal and will work on all sizes of floppy diskettes from 3.5″ 720K to 5.25″ 360K. It is also designed to be installed on a hard disk drive system in its own subdirectory. The program allows instructors to set up class rosters, change the rosters at the end of class and delete unwanted rosters. The instructor may add or delete students and print a hardcopy of a roster. The program allows quick movement from entry to entry which allows the instructor to enter student grades, change assignments, change grades if necessary and set the grade breaks by percentage. The report function allows the instructor to generate summaries for individual assignments, individual students, complete rosters and final grades. The program will display on the monitor or produce hardcopy.

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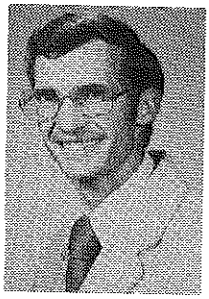
Middle School Agricultural Curriculum For Honduras



By Anamaria Varela and Lee Cole

(Dr. Varela is Educational Consultant, Massey University, New Zealand; Dr. Cole is Professor and Head, Department of Agricultural Education and General Agriculture, Oregon State University.)

In Honduras, public education is free and compulsory. Although education is theoretically compulsory for children between the ages of seven and twelve, the law is not very strictly enforced because of the shortage of schools and lack of adequate transportation. It is difficult for poor rural families to handle associated school expenses like pencils, textbooks, notebooks, etc., especially when there are several children in school and a labor force is needed at home on the small farms.

Primary School

In the early 80's, it was estimated that in Honduras 39 percent of the school-age children were enrolled in the primary schools. The drop-out rate was high, particularly among boys 11 to 12 years old from fourth grade on, for they were forced to seek work for two reasons: 1) to ease the family's financial needs, and 2) because they saw little relevance to the basic school curriculum of writing, reading, Spanish grammar, history, arithmetic, and geography (Rudolph, 1984).

Honduras then started a "Rural Pilot School" project at the primary level to increase the relevancy of its curriculum and improve school attendance. Rural Pilot Schools introduced appropriate agricultural skills and technology to elementary teachers, students, and nearby farming communities (Peace Corps/Honduras, 1985). For education, demonstration and production purposes, the Pilot Schools established small projects such as small mixed gardens, animal husbandry, apiculture, construction, and swine, poultry, and rabbit raising. The typical Rural Pilot School had seven to eight full-time teachers plus a school director, and generally one to two manazanas (3.4 to 6.8 acres).

There are still problems with isolated communities and inadequate transportation, nonetheless enrollments have increased. Crow (1987) reported that in 1980 there were 5,568 primary schools with 16,600 teachers and 582,600 students. In 1986 there were 6,710 primary schools with 20,732 teachers and 805,504 students.

Middle School

The Lower Middle School, "Common Cycle of General Culture", is a three year curriculum. Its goal is to broaden education and provide vocational orientation. However, the curriculum is mathematics, science, Spanish, literature and social studies. In Honduras the only agricultural instruction is provided at the primary level in Pilot Schools or the Upper Middle School level "Diversified Cycle" in a vocational school. Therefore, a study was undertaken to determine appropriate agricultural curricula for the lower Middle School system of Honduras.

Agricultural competencies were identified from the Pilot School and Upper Middle School curricula. Input was sought from the agricultural industry of Honduras, the ministry of education and government agricultural loan officers. Agricultural knowledge and skill items were identified which bridged the gap between the Pilot School and the Upper Middle School and articulated with the curriculum of each.

The Lower Middle School curriculum was focused on Major and Minor Livestock species, Basic Grains, Horticulture (vegetables), Pomology (fruit), Construction, Personal Habits and Bookkeeping. As the curriculum was identified and developed, it was found that the curriculum would provide much of what a Peace Corps report had criticized as lacking in Honduran education for rural children — food production, nutrition, homemaking, health and the use of simple tools that would help the poor to improve their living standards and production techniques (Peace Corps/Honduras, ND).

The agricultural component of the curriculum was to be infused into the current general studies curriculum and used as a context for teaching the content of mathematics, science, Spanish, literature and social studies. The agricultural curriculum was not a replacement for the current general studies curriculum; it was integrated into and used within the context of the current curriculum. For example, mathematics was to be taught using bookkeeping as the point of application for the first year of math in the lower Middle School curriculum. The mathematics taught during that year of the general studies curriculum focused on addition, subtraction, multiplication, division, percentages, etc. All of the above mathematics topics are easily taught using a bookkeeping system which required students to keep records on their school agricultural projects. Science and Social Science concepts were taught using the animal, crop, vegetable and fruit production units as the application base.

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Middle School Agricultural Curriculum For Honduras

(Continued from page 9)

Physics and additional math concepts were taught through the construction unit and values systems were reinforced through the personal behavior materials (alcoholism is a major problem among men in the rural areas of Honduras).

The table below shows where various agricultural elements were designed to be adopted into the general studies curriculum for the Lower Middle School system of Honduras.

Agricultural Common Cycle of General Culture Curriculum for Honduras

FIRST YEAR	SECOND YEAR	THIRD YEAR
	First Semester	
Horticulture	Basic Grains	Beef Cattle
Personal Behavior	Construction	Horses
Bookkeeping	Poultry	
	Second Semester	
Pomology	Industrial Crops	Dairy Cattle
Rabbits	Swine	

The agricultural component of the curriculum was designed for the sole purpose of upgrading the agricultural techniques of rural students who participate in the Common Cycle of General Culture (Lower Middle School). It represented an addition to the general studies curriculum, not a replacement for it. It is hoped that these students will return to their homes with better skills to work on their own farms, or will be employed on farms as mayordomos (first level managers) and/or farm laborers. The agricultural component of the curriculum would also permit the student to continue studying in the Diversified Cycle (Upper Middle School) of the Honduran School System.

The agricultural component of the curriculum was meant to be vocational; that is, it prepared students for work or further education and it recognized experience as the fundamental medium through which the students would learn. Thus, the emphasis was on the practical aspects of agriculture and not on the theoretical components (theoretical components were covered in the Diversified Cycle).

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Ag Ed's Role in Global Education: Unprecedented

(Continued from page 4)

The Future of Agricultural Education

There can be no doubt that programs and activities related to international agricultural education are being put into place now that will have far-reaching implications for agricultural education for decades to come. Among some of the many developments that will, I predict, occur in the not too distant future will be the following:

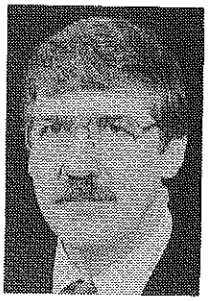
1. Students and teachers will be linked on a regular basis in learning situations via satellite with teachers and students of agriculture in other countries. This effort has already started on a limited basis.
2. A world-wide youth organization in agriculture will be developed. The principle elements of this organizational effort are becoming clearer.
3. Teacher exchanges with teachers of agriculture in other countries will become commonplace. The National Council on Agricultural Education has already started this process.
4. A great variety of international education resources will be used in teaching agriculture.
5. U.S. instructors of agriculture will be heavily involved in local host-country development projects sponsored by world-wide development agencies. Change agents will use the principles of Agricultural Education in working with local indigenous farmers around the world.
6. Agricultural education will be a critical subject taught in elementary and secondary schools in all developing countries.

Summary

The interdependency of people cannot be denied. The events of recent times prove this point. The Agricultural Education profession either takes advantage of the opportunities for global education in agriculture - both at home and abroad - or someone else will do it. The growth area or new frontier for agricultural education has two fronts. One front is the "internationalization" of the U.S. agricultural education curriculum. The second front is the "agriculturalization" of education in all countries that depend on agriculture for the health and vitality of their economies and development of their people.

The articles in this issue give excellent examples of programs and projects that have worked to fulfill the goal of building international linkages that foster global education in agriculture. The globalization of agricultural education is an unprecedented idea whose time has come.

Agricultural Education — A Model Program For Arab Nations



By Maynard J. Iverson
(Dr. Iverson is Head of Agricultural Education, The University of Georgia.)

The Mid-East is an important part of the world community because of its strategic location, rich history and culture, and the vast reserves of petroleum which underlie much of the area (Ward, 1984). A region of stark contrasts, the Mid-East is an arid, yet heavily populated land. Many of its people live in rural areas and are engaged in agriculture; yet, due to the desert terrain and traditional methods, most of the region is a net **importer** of food and fiber. A politically volatile people, Arabs are nonetheless among the most hospitable and family oriented.

Since the early 1940s, petrodollars have allowed accelerated development of all aspects of Arab society. Most notable progress has been in major industries, including agriculture, yet much remains to be done. In essence, the entire infrastructure for an efficient agriculture must be developed for the region. Vast technical projects are currently underway and great numbers of Arabs are involved in exchange programs, travel and study abroad (ARAMCO, 1983; Lacy, 1981; Ward, 1984). These efforts not withstanding, numerous opportunities exist for agricultural educators to impact the educational and agricultural development of the region through the effective program model of secondary school agricultural education.

The Agricultural Education Model

Agricultural education at the local level may be viewed conceptually as a wheel, supported by and radiating benefits to the community it serves (Iverson, 1981).

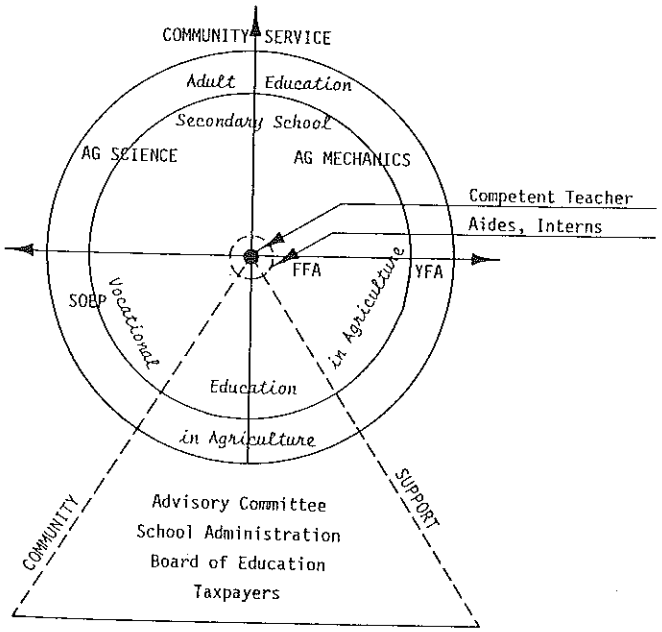


Figure 1: The comprehensive program of Agricultural Education in a secondary school/local community.

At the center of the structure is the teacher, assisted by support staff which may include clerical, technical or professional personnel. The four parts of the program form a balanced offering of classroom-centered agricultural science, laboratory activities in agricultural mechanics and/or other applied areas, the supervised occupational experience program, and leadership development through the FFA. When an appropriate adult/young farmer or other continuing education course is added, it can be seen that community support broadens, bringing new potential for resources and support.

The community base in agricultural education has been and continues to be the strength of the program in the United States. Combined with teacher education programs at Land Grant universities and supervisory staffs attached to state departments of education, the agricultural education model has produced outstanding results. Much of this model is transportable to developing countries, including the Arab nations, because of the characteristics of their societies.

Factors Affecting the Agricultural Education Model

The major aspects of the Mid-East which will undoubtedly affect programs of vocational-technical education in agriculture are language, religion, and sociocultural customs.

Language. According to the **World Almanac** (Hoffman, 1988), there are approximately 187 million Arabic-speaking people, located primarily in the Arabian Peninsula, North Africa and East Africa. Arabs take great pride in their written and spoken language. Since it is the language of the Holy Quaran (or Koran — the Muslim bible), it is considered to be God's language (Peters, 1983). Arabs also point with pride to the Arabic numbering system and to the fact that much art, science and learning were preserved by Arab scholars during the Dark Ages (ARAMCO, 1983; Lacy, 1981). Poetry and eloquence are revered; thus Arabs tend to ramble and not get to the point quickly. They often speak evasively — avoiding a blunt response — thus a "yes" or "no" should

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Agricultural Education — A Model Program For Arab Nations

(Continued from page 11)

be taken at face value only if repeated and emphasized (Peters, 1983).

Religion. Islam, one of the world's three great monotheistic religions, began and continues to flourish in the Mid-East. The Prophet Muhammed was born in the city of Medina, on the western part of what is now Saudi Arabia. He preached and died in nearby Mecca, site of the Kabah, Islam's holiest shrine. Islam subsequently spread to large parts of Africa and Asia. Today more than 860 million Muslims reside in over 30 nations, primarily North Africa, the Mid-East, Southwest Asia, East India and Indonesia (Hoffman, 1988). The preachings of Muhammad are recorded in the Quran, or Koran as it is known in the West, which comprise the comprehensive code for all Muslims worldwide. Muslims must observe five basic requirements, called the "Pillars of Islam." They are as follows: (a) to say out loud, "There is but one God, and Muhammad is His messenger;" (b) to pray five times each day while prostrate and facing Mecca; (c) to give the community a share of one's wealth (tax of purification); (d) to fast during the Holy Month of Ramadan; and (e) to go on at least one Haj or pilgrimage to the Holy Places — Mecca and Medina — in the course of one's life, if one can afford it. Islam means "submission to God's will." Faith is the most important thing in the lives of most peoples in the Mid-East (Lacy, 1981).

Sociocultural Customs. Culture, which includes everything people in a geographical area learn to do (Moran and Harris, 1982), is widely varied in the Mid-East. An ancient land, the region is widely regarded as the cradle of civilization and a crossroads of world trade. The ebb and flow of countless tribes, nations and peoples have left their impact. So, too, have the frequently harsh climate and barren lands of many Mid-East nations. Nomadic forebearers originated customs of tribal loyalty, emphasis on sharing, and disdain for property (Lacy, 1981). But differences do exist — for not all Mid-East people are Arabs, Semites, and/or Muslims! Thus, it is not possible or even desirable to make a rigid list of cultural characteristics of the peoples of the region. One must resort to area studies to learn about a specific nation or people (Ward, 1984; Harris and Moran, 1979). There are, however, some general and distinctive factors associated with the culture of the Mid-East. Loyalties of an Arab are to family, friends, community and country, and then to outsiders (Wards, 1984). Dignity and respect are important. Superiors are to be obeyed and teachers are highly respected (Lacy, 1981; Peters, 1983; Ward, 1984). Arabs are hospitable — thus, their offers of hospitality should be accepted (Peters, 1983; Ward, 1984). Arabs are honest, but good businessmen. They drive a hard bargain and bargaining is a way of life in Arab souks or markets (Peters, 1983). Arabs are emotional — meetings are warm, handshakes are frequent and holding hands with friends of the same sex only — for public displays of affection between members of the opposite sex are forbidden! Women and children hold a special place and are protected. Women frequently are completely veiled when in public and are restricted in travel, jobs and behavior (Lacy, 1981). Children are spoiled outrageously, but they are required to attend school and excel (Lacy, 1981). Most Arab nations are "high context" societies — i.e., meaning is given by more than words. Understanding non-verbal cues and actions is important for communication to occur (Miller, 1979).

Most Arab nations have low technology, labor-intensive agricultural and industrial enterprises. Consequently, Arabs have not grown up tinkering with mechanical processes and tools. Nonetheless, if methods adapted to the culture are utilized, Arab students are very adept at learning modern life skills. In Arab society, supervisors/managers, machine operators, drivers, police, soldiers and teachers are respected occupations (Lacy, 1981). A nostalgia for land and the strong desire to return to a simpler, agrarian life (Lacy, 1981) give Arab societies great potential in agricultural education.

Transportable Values of Agricultural Education

Many Arab societies today are at the stage of agricultural development that the United States was in when the Smith-Hughes Act became law. The system that helped bring America to its greatness in food and fiber production can work in the same way to help make the Mid-East less dependent on outside food sources.

Agricultural education is a community based program; Arab societies are village and family oriented. A program such as agricultural education, which focuses on traditional values, would be very popular in rural areas of the Mid-East. Likewise, supervised occupational experience programs (SOEP) and home visits should work well in the Arab culture.

Agricultural education develops and recognizes young people. Arabs, who are devoted to their families, will likely lavish attention on teachers and programs which help their children.

Agricultural education stresses practical learning and problem-solving. Arabs love stories, riddles and real-life drama (Lacy, 1981). Classes in agriculture can provide popular, realistic outlets for this traditional behavior.

Traditionally in agricultural education, heavy emphasis has been placed on livestock and mechanics. Sheep, goat and lamb meats are staples of Arab diet; any program that will foster youth and adult activities with these animals should prosper. Also, the great need for mechanical instruction should make agricultural mechanics a popular course. Applied teaching of small engines, masonry, welding, woodwork, electrical wiring, surveying and other agricultural mechanics skills can provide important support for family and community development.

Agricultural education in the United States was one of the first federally sponsored educational programs. Most Arab societies have national ministries of education made up of individuals who are acutely aware of the needs for rural development through education. Arab people generally welcome help from the national level, and see education as important enough to support as a national priority (Lacy, 1981).

Finally, agricultural education is science oriented. Arab students do very well in math and science; when enrolled in a program like agricultural education, which is geared to practical applications of science and mathematics, these students are likely to prosper.

Installing the Model

The most effective international programs are those which emphasize self help (Miller, 1979; Ward, 1984). Through exchanges and other cooperative approaches to development, agricultural educators can lead this region in the implementation of outstanding programs in agricultural education. Educators who are responsible for initiating agricultural education programs in the Mid-East can be more effective by following certain proven techniques (Iverson & Rollins, 1985; Iverson, 1985):

1. **Design a formal course of study based upon a "whole job" approach.** Show students how the job fits into the industry and how they can progress from workers to supervisors, owners and managers. Use a competency-based instructional approach. Incorporate any supplementary skill development as needed.

2. **Secure or develop curriculum materials specifically aimed at the Arab students to be taught.** Conduct an analysis of the prospective students' needs. Use examples from the Arab culture. Build on the basics and move in a logical progression from simple to complex. Incorporate frequent repetition, group work and performance testing.

3. **Prepare for instruction through transculturation activities.** Read area studies. Learn some basic words and phrases in Arabic. Study the basic tenets of the Islamic faith. Develop a sensitivity to taboos of the Mid-East. Use someone from the specific Arab country to help develop materials, and to select methods and teaching strategies. Avoid ethnocentrism (Harris & Moran, 1979).

4. **Build student-teacher rapport and respect from the start.** Dress professionally and conservatively. Tell only enough about yourself to establish your credentials. Address the students by their last names and learn their names and important background information as soon as possible. Be on time for class and prepared to teach. Maintain a firm but fair relationship with students.

5. **Conduct classes in a cordial, patient and positive manner.** Explain the purpose of each lesson, define technical terms, and progress steadily. Use audio-visuals to introduce the lesson. Use diagrams, cartoons, pictures and models, rather than just words. Ask frequent questions to insure understanding. Demonstrate, assist performance, allow practice and then test performance; reinforce accomplishment with genuine praise, but withhold it when not warranted. Correct students in private; never lose your temper. Use group learning as much as possible; summarize and review after each class, and avoid offensive gestures. Avoid slang and jargon, but do use occasional Arabic. Deal with students on an individual level. Use humor, and be realistic in expectations. Above all, be understanding and accepting.

Conclusions

Agricultural educators have a significant role to play in the agricultural and educational development of Mid-Eastern nations. The U.S. model for secondary school agricultural education has many characteristics suited to the nature of Arab society. Few negative factors are evident, and these can be overcome through skillful implementation procedures. The great need for increased food and fiber production, and improved technical and community-oriented education of the populace are ample justifications for transporting the model to the Mid-East. Arab traditions of love of family and the land, work with animals, respect for teachers/education, and skill in math and science lend empirical support to the concept of utilizing the agricultural education model for community development in the Mid-East. Proven systems for implementing educational programs already exist; however, the will to provide educational and technical assistance may be the more crucial element.

The most effective international programs are those which emphasize self-help and long-term educational attainment. Through demonstration projects, staff and student exchanges, training of native teachers and administrators and other developmental approaches, agricultural educators can play a part in stabilizing the Mid-East through agricultural improvement and community development. The agricultural education model can be a key component to success in this lofty goal.

To accomplish this task, international agricultural educators must be prepared to conceptualize, plan, implement, and evaluate developmental programs dealing with agricultural education in the Mid-East. Exporting one of America's outstanding educational programs to the Mid-East could have tremendous impact on peace in the area. It is certainly worth our effort to try.

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Linking Teacher Skills, Experimental Learning and Indigenous Knowledge Systems

By Don King

(Mr. King is Graduate Assistant, Department of Agricultural Education and Studies, Iowa State University.)

Let's dream for a minute. Have you ever thought of yourself as an international development agent? Or picture yourself in another country helping to build a rural road or school? . . . or designing an agricultural education program? . . . or identifying new agricultural technologies and assisting with their implementation? These ideas may seem remote and beyond your current reach of capabilities. On the contrary, as far-fetched as these ideas may appear at the present time, they can very easily become a reality. Your background as an agricultural instructor has prepared you for these types of opportunities, far better than you think.

Think about it. Consider the types of things you do on a daily, weekly, or monthly basis — those tasks that we, as teachers, frequently take for granted. Aside from the technological knowledge and teaching skills that we all learned in school, there are a lot of practical skills that we learned through the experiences of teaching that are precisely the types of skills necessary for one to succeed when working internationally. As teachers, we have learned to deal with and manage all types of personalities — in and out of the classroom; we know how to make people feel good about themselves and about what they are doing. We have fine-tuned the art of "compromise" in working with parents, other teachers, coaches, and administrators. We are capable of working with school administrators and school board members in a system heavy with bureaucracy in order to get approval, money, or supplies for a specific activity or project. Better yet, we are experts at acquiring resources — information, donations, or other necessary materials from industry or government — at the state, regional, or local level. What you are doing today, as a teacher, relates closely to what is happening in international development. Agriculture teachers are doing the same types of activities, only in a different setting. Local teachers of agriculture are very well qualified to work in international situations or to develop global perspectives in teaching.

Well, now that your qualifications have been established, what next? What does that have to do with you or with teaching vocational agriculture? The fact that the agricultural industry is changing and taking on a more international focus should not come as a big surprise to anyone working in agriculture today. With these changes has come the understanding that vocational agriculture, too, needs to realign its focus so that it has a more global orientation. Our students need to be aware that there is life beyond the confines of the local community, state, and nation. The amount of soybeans planted in Brazil has a direct effect on the price of soybeans harvested in Iowa. Prices have a direct impact on agricultural trade agreements between the U.S. and other nations of the world. Students need to be aware that the way business is transacted in the United States may not necessarily be the way business is conducted in other parts of the world, and that it is necessary to view things from different cultural perspectives. So, as a teacher of vocational agriculture it is necessary that you have an interest in the developing nations of the world and in the international agricultural arena as a whole.

Also changing within vocational agriculture is the nature and type of our clientele. Nationwide, students enrolling in vocational agriculture programs continue to be both rural and urban based, but they are increasingly interested in non-farm, non-production types of activities and experiences. As a result, the focus of our programs must not only take on a global perspective, but they must adjust educational programs to accommodate the changing needs of students and industry. Students need to be able to take what they learn and apply it to the real world. One possible way to accomplish this objective is to look at the lessons to be learned from "indigenous agricultural knowledge" (IAK) systems.

Learning From Indigenous Knowledge Systems

Indigenous agricultural knowledge is local knowledge that is unique to a given culture or society. This "knowledge of the people" originates from and is naturally produced in an area, being passed down from generation to generation — usually by word of mouth. Indigenous knowledge has value not only for the culture in which it evolves, but also for scientists and educators from outside. Development professionals increasingly are seeing the value of this type of knowledge in solving agricultural and environmental problems (CIKARD, 1988). Although, well-founded and scientific in its own right, indigenous knowledge has traditionally been overshadowed, and in some cases lost or demeaned, by the onset of modern scientific knowledge. It is difficult for some of the "educated" to accept that they have anything to learn from rural people or to recognize that there is a

parallel system of knowledge to their own, which is complimentary, usually valid, and in some respects superior (Chambers, 1983: 2). With the accelerated pace of development, industrialization, urbanization, and modernization, people's lives are increasingly being changed on the basis of other's definitions of the situation.

Local knowledge can't be assumed away as non-existent or inferior. At the same time, modern scientific knowledge is often embedded in cultural roots of people and, therefore, is often mistakenly perceived as being simply an irrational "cultural wives-tale," as opposed to legitimate "knowledge" (Warren, 1987: 3). Further, perpetuating the legitimacy of modern scientific knowledge over indigenous knowledge is the fact that scientific knowledge is accessible to people in books, and through information retrieval systems, it is easily communicated and taught all over the world. In contrast, the knowledge of any group of rural people is accessible to the scientific community **only** through learning from rural people themselves (Chambers, 1983: 84).

The following methods, according to Chambers (1983: 201-9), may be employed by educators to gain a more valuable and insightful understanding of indigenous populations. These same methods might very well be used by your students to acquire a broader based understanding of agricultural and cultural systems. Many teachers and students of agriculture use these techniques. We need "experience programs" that allow students the opportunity to learn: 1) by **sitting, asking and listening** to those with specific knowledge, skills, and experiences that just can't be taught in the classroom; 2) by conducting **joint research** projects (test plots, feeding programs, soil tests) with those who have lived in the area all their lives and have access to local information regarding regional soils, microclimates, noxious plants, etc.; 3) by **directly working with others** in designing, constructing, and implementing projects or programs within the agricultural sector; and, 4) by using **simulation games,** which can be used to help students better understand the complexities and practicality of methods used by rural practitioners.

1. **Sitting, asking, and listening** represents as much an attitude as a method. Many of the best insights come this way. Conversations reveal questions outsiders don't know to ask. They often open up the unexpected. The breadth and depth of knowledge may also be enhanced through the selection of those informants who know the most. In less developed nations of the world, researchers on indigenous knowledge have found that, generally, the best information about the small annual herbs is obtained from older women; herd-boys, being always hungry and also experimental, are experts on the range of the wild edible fruits, while honey-collectors show the most detailed knowledge of flowering sequences of local plants (Brokensha and Riley, 1980: 121).
2. **Joint research and development.** Agricultural educators, extension agents, and students must recognize rural practitioners as professionals and colleagues, as fellow experimenters and developers of technology. Rural people's knowledge of agricultural systems have many dimensions, including: ecological and environmental conditions; land use, cropping and grazing practices; and animal husbandry and craft skills. Many of the practices of farmers which were once regarded as primitive or misguided are now recognized as sophisticated and appropriate. Examples of this understanding include various forms of reduced tillage and shifting cultivation techniques (Chambers, 1983: 85).
3. **Learning by working** with people and doing what they do is a way to understand different lifestyles and cultural practices — by experiencing it from the inside. This practice may also elicit information that otherwise one may not have known to volunteer, or to ask. Thus, working on rural tasks can be a source of understanding.
4. **Simulation games.** For most students, educators, or researchers there is neither time, money, nor opportunity to spend "learning by working." As a result, simulation games are one of the most promising methods for enabling individuals to understand the life and problems of the rural agriculturalist. Such games are used in other fields such as business management and military science, but have been little used in agricultural education. The application of simulation games in training courses would seem to have enormous potential, with foresters collecting firewood or other forest produce, agriculturalists working as farm laborers, animal husbandry staff and veterinarian assistants herding and handling livestock, and irrigation engineers and agricultural engineers applying water in farmer's fields; in each case advised by local experts, the rural people themselves.

These four approaches all reverse the learning process. They encourage and enable those being trained or educated to learn from the rural practitioner, and not just from the textbook. These and similar approaches should be feasible in many institutions and at many levels: secondary and post-secondary programs alike. These types of approaches to learning can be used in other contexts as well. Student teachers, for example, can sit, ask, and listen to high school students or community members in an attempt to gain an additional understanding of their backgrounds, feelings, and desires regarding educational programs. Secondary students can learn about local public policy, journalism, or public relations by directly working with individuals and businesses that service these areas.

Challenges for Vocational Agriculture

Given the present growth and international focus of the agricultural industry, and the changing agricultural education clientele, we need a great variety of supervised agricultural experiences. Times change, and the vocational agricultural profession must be flexible enough to change with them. We need to be providing students with a broader based set of experiences that allow them to relate what they are learning to their lives and to the world around them. The types of approaches cited above are possible ways to accomplish this objective, while at the same time accessing additional knowledge sources that might otherwise go untapped. Education is seen as the provider of basic skills, such as literacy and numeracy, and the most specialized, up-to-date, technical knowledge that modern methods of production and management demand. We should not overlook the indigenous knowledge base that exists within every community. As educators, it is our societal responsibility to be open to all types of student learning, as there continues to

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Linking Teacher Skills, Experimental Learning and Indigenous Knowledge Systems

(Continued from page 15)

be a direct theoretical link between education and responsible agricultural management and practice.

Education is the cornerstone of knowledge, and knowledge is power — the power to make the best decision given the quantity and quality of information at hand. Education and training of farmers, researchers, teachers, students, and laypersons alike, about indigenous agricultural knowledge systems, will bring new opportunities and new challenges to our profession. At the classroom level this might be accomplished in a variety of ways. Students can participate in: 1) simulation games; 2) role playing activities; 3) internships specific to acquiring specialized indigenous knowledge; 4) interviewing an individual in the local community who has a specific skill, craft, or cultural heritage that is unfamiliar to the student; 5) projects where they select an agricultural technique or practice currently used in the area, and then conduct research to determine an alternative practice that has traditionally been used, or one that might now be used instead. Students can then present their findings and evaluate which, if any, are appropriate given the conditions and circumstances that presently exist. These are some suggested activities that can be used to increase student awareness in the areas of agricultural indigenous knowledge systems. By using these activities we are increasing our human and information resource base, expanding the horizons of our students, adopting creative teaching techniques, incorporating problem solving and decision making skills into our curriculum, and working to meet the learning needs of our students. At the same time, we are giving our students the necessary skills to work and think internationally, as these processes are the same used in development circles today.

Opportunities for International Education

As professionals, there are programs available that allow individuals the opportunity to visit, work, or study the cultures and agriculture of other nations. It's not necessary to make a total career change in order to pursue an experience of this nature. There are many short term, summer (expenses paid and sometimes salary paid) internships or educational tours available to many regions of the world: Asia, Latin America, Western Africa, and even Western Europe. There are even programs that don't require individuals to leave the United States. Arrange for your FFA Chapter and the foreign language club to co-sponsor an exchange student from a developing nation. This is an ideal way to internationalize local programs. For the individual who is able to take a leave of absence from their teaching responsibilities, the opportunities are even greater.

These types of experience offerings are available through a variety of sources: agricultural organizations and commodity groups, church groups, university programs, government agencies, and even some state vocational agriculture teachers associations are making experiences available to their members. Once you put your feelers out, you will be surprised at the number of opportunities you will become aware of, as well as the number of people who have already taken advantage of them. What have you got to lose? Other disciplines and vocations have been sharing their experience and expertise with the international community for years. As an agricultural educator you have the necessary skills to make a worthy contribution to international rural development efforts. It's time for you and your students to become involved. That, in practice, is what the agricultural education process is all about.

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Electronic Grade Book Programs

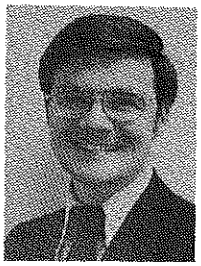
(Continued from page 8)

Frequencies of correct answers on an assignment or by an entire class may be generated. The instructor may also generate a list of all missing assignments for all students.

The program was developed by Data Assist and is available through Hobar Publications. The program cost is $59.95.

All the electronic grade book programs which are available through Hobar Publications have security provisions built in. Instructors may enter security passwords which prevent usage by unauthorized persons. Overall the electronic grade book programs offered by Hobar are of exceptionally high quality. The documentation is easy to follow and the programs are comprehensive yet flexible. No instructor should be without at least one of these programs.

Computer Technology Resources
Managing Information Electronically



By W. Wade Miller, Special Editor
(Dr. Miller is Associate Professor, Department of Agricultural Education and Studies, Iowa State University.)

Files are important in a secondary or post-secondary agricultural program. Most agricultural programs have several file cabinets full of paper. Do you ever have difficulty in locating information when you need it? Do you find that you spend a considerable amount of time sorting and copying information from your files? I have a suggestion that may help you to eliminate one or more of your file cabinets. The suggestion is database management software.

Database management software (also known as database managers) is the electronic equivalent to the file cabinet. The database manager is appropriate for any files you normally keep in list form. Your files are stored on computer disk. A box of 10 disks can store as much or more than a four-drawer file cabinet. In addition, database managers have some features the file cabinet does not have. The database manager can find files, sort them, perform some math functions, and print reports. Updating and organizing files also are easier with a database.

Before we describe some of the jobs the database manager can do, you will need to become familiar with some terminology. An easy way to remember the terms is to associate them with their paper counterparts. Because most teachers keep an inventory of tools in their agriculture program, let's use a tool inventory for an example. The key terms are:

Database. Think of database as your file cabinet where you store files. One of the files contains your tool inventory.

File. It is like the manila folders in one of the drawers. Each file is labeled with a name. In this example, the file is labeled: Tool Inventory.

Record. A record or template is like a printed form with blanks to record information. A collection of records makes up the file. In our example, each tool is listed on a separate record. One example is: Abrasive Cut-Off Saw.

Category. Each category is a bit of information you need for each record. Think of it as the question and blank on a printed form. Each record will contain several categories. Some example categories for the tools on your shop inventory could be: Item, Brand, and Size.

Entry. This is the information you type in for each category. On a paper form you would either type or write information in each blank. For example if one of the categories for the Abrasive Cut-Off Saw is Date-of-Purchase, you would enter the date you purchased the tool. In this example, the date is February, 1990.

Report. This is the document you print from the database. You can sort and rearrange records and categories before printing a report. The format for the report can be saved for future use. Formats include tables and mailing labels.

Here is a sample record from the tool inventory created by using one of the more common database managers — the AppleWorks Database. Database management software exists for all brands of computers. Most database managers will have capabilities similar to, or even more advanced than the one used in our example.

File: Tool Inventory
Record 313 of 332

Item: Abrasive Cut-Off Saw
Brand: Central Tool
Size: 12″
Location: Shop
Number: 1
Condition: Good
Purchase Date: Feb, '90
Cost: 500
Inventory #: 1342
Note: 2 extra blades
Spare: —
Spare: —

Upon completion of the tool inventory, you can browse through the records one at a time much as you would flip through a pile of paper forms. But, there are several other better ways to look through the files. You can use control character keys to find and sort records.

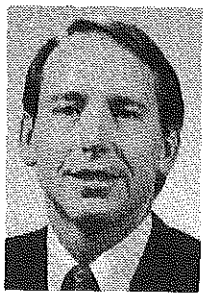
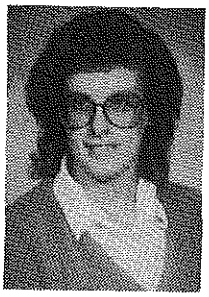
You can find records by using a control key and typing in the information you want the database to find. This information is called a character string. It can be letters, numbers, or a combination of the two. The computer will look through all the records to find the particular string of characters you have designated.

You can sort the records according to the entries in a specific category. For example, you could arrange the records in the tool inventory alphabetically by the names of the tools listed in the item category. You could also arrange records numerically for categories containing numbers.

Database managers would not be of much value if you could not print the information contained in your files the way you need it. Fortunately, most database managers will

(Continued on page 19)

Building Bridges of Understanding


By Randy Pingel, Dianna Strickler, and Julia A. Gamon

(Mr. Pingel is Graduate Assistant, Department of Agricultural Education and Studies, Iowa State University; Ms. Strickler is Agricultural Science Technology Marketing Instructor, Centerville High school, Centerville, Iowa; Dr. Gamon is Assistant Professor, Department of Agricultural Education and Studies, Iowa State University.)

In this age of instant communication and rapid transportation, our world has been made small. Unfortunately, this concept has not substantially advanced our understanding of problems in our countries: problems that, in viewing our world as a "global village," have become our own. This lack of understanding will persist as long as ignorance persists — ignorance perpetuated by lack of education and limited contact with people from other countries.

One example of a problem in our global village is world hunger. From Sudan to Bangladesh, in too many countries and times to mention, hunger is a topic that literally cries out for attention. When we see a child starving from malnutrition or the lack of food, a child actually too weak to cry, it tears at the hearts of those of us who have never had to experience hunger. To aid various developing countries in resolving this problem, past solutions have centered on sending food and money; past experience tells us that this only puts a band-aid on this chronic problem.

Realizing that the solution requires an educational focus, nine teachers at Centerville High School in Iowa, planned and implemented a two-week seminar aimed at increasing student awareness of this global issue. Teachers representing courses across the school's curriculum formed a committee to plan the hunger seminar as a special school project.

Teachers spent one hundred and forty-two hours planning, researching and presenting the seminar. A considerable amount of time was spent in reviewing and evaluating the final project. Each teacher received additional pay for this project through Phase III monies (Phase III, a state funded program in Iowa, is designed to promote innovative programs and projects to enhance education in Iowa).

An integral component of the program was an overnight visit by seven international graduate students enrolled in agricultural education in Iowa State University. The international students, all with good English skills, were from India, Zimbabwe, Argentina, Costa Rica, Morocco, and Nigeria.

For the international students, the program began the day before their scheduled visit at the school for the seminar. They visited a dairy farm during the afternoon and that night they attended a church dinner. Afterwards, they spent the night with Centerville families. Most talked into the night, asking and answering questions, breaking down barriers and stereotypes.

On the day of the seminar, the international students spent the morning visiting a variety of classes and served as resources for various topics. In the agriculture classes, they presented facts on agricultural production and problems in their home countries; in the family living classes, they expressed their views about family systems and marriage; and in driver's education, they talked about driving laws and customs.

Centerville, Iowa, cooperated with Iowa State University to add an international agriculture dimension to its high school program. University agricultural education students spent a day in the high school as a curriculum of a week-long program on world hunger. (Photos courtesy of Dianne Stricker.)

That afternoon, after being introduced to approximately 150 high school students and telling them a little about themselves, the international students led small group discussions related to various topics on hunger. The groups rotated every ten minutes to provide a more personal contact and exchange with each international student.

The Centerville teachers planned and organized with the high school students for two weeks so as to get the most out of the one day with the visitors. The program prior to the seminar provided the high school students with a variety of experiences and background information (consisting of attitudes and feelings, as well as facts) relating to world hunger. Movies, discussions and games provided the basis from which to ask questions of the international students.

An example of an activity was a "world hunger dinner." Students were divided into groups representing countries and given food based on the amounts and kinds of food often viewed as attributed to the various countries. Students representing European countries were given bread, grape juice, and cheese; those in the North American delegation were given pizza, potato chips, M&M's and Pepsi; in the South American group, each person got a rice cake and shared five glasses of water; in the Asian section, fifteen rice cakes in total and brown drinking water were shared; in the African group, every two students received one rice cake and five glasses of water. Rules of the dinner were that students representing the so-called developed countries could move about and share if they chose, but students in developing countries had to stay put and eat only what they received. The dinner displayed a graphic display of how unfair the hunger situation is and the inequality of the world's food distribution.

Although the seminar was held for the benefit of the high school students, it had other benefits as well. International students enter university programs, such as the Agricultural Education program at Iowa State University, funded by their own country, their families, or the United States government. In most cases, the time allotted to finish their degree programs is limited, therefore it is difficult for them to take advantage of some of the formal internship programs available. Other opportunities for these students to leave the university community are limited. Through the effort provided by teachers at the Centerville High School, the participating students had the opportunity to view rural Iowa — the farms, families, communities and schools — first hand. The international students were delighted with the opportunity and expressed the desire to have similar experiences in the future.

Another benefit of this experience was that by leaving their home countries, stepping out and viewing problems more objectively, and discussing problems shared by others, the international students added to their own understanding of the hunger issue. These experiences can lead to new ideas and new ways of doing things as well as a better understanding of other cultures.

Those international students that attend United States universities are a virtually untapped resource for educating our young people. Furthermore, as a select group (they often return to positions of power and responsibility in their countries), they have great potential for formulating and directing governmental policy. In short, they have the unique capacity to create and implement those real solutions the entire world needs.

In Centerville, Iowa, the first steps were taken, the foundations laid for building bridges of understanding. Although this program is only one example of how some creative educators approached the task of teaching their high school students, similar programs can be presented for other world issues. The girders for these bridges are education and the passageways allow for the flow of information. Most importantly, these kinds of programs can open up new channels of communication to develop linkages around the globe.

Computer Technology Resources Managing Information Electronically

(Continued from page 17)

allow you to sort, arrange, and print your files in a number of ways. In our example, you could print the entire inventory. You could print only the records you select. You could print only the categories you select. You can perform math functions on numerical categories. If you had mailing address categories in the file, you could even print mailing labels.

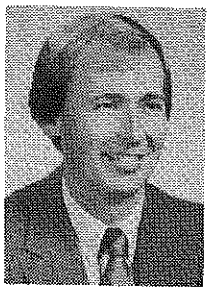
As you can see, a database manager is a versatile, flexible system of managing files that can be kept as lists. What are some uses for a database manager in your agriculture program? Here are some suggestions: FFA membership, banquet invitations, equipment service records, test plot information, greenhouse crop schedules, breeding records, program budget, plant identification, spray schedules, fruit sales records, SAE or SOE records, county fair records, mailing lists, phone lists, and student grades. For more suggestions look in one of the drawers of the nearest file cabinet.

NOTICE — Coming in May

"Reshaping Experiential Education"

Teaching Tips

Turning SOE Program Expansion Into A Game



By Ed Osborne, Special Editor

(Dr. Osborne is Associate Professor, Department of Agricultural Education, University of Illinois, Urbana-Champaign.)

Having trouble getting your students interested in SOE programs? Using the same old methods of teaching students to plan and improve their SOE programs? Need some new ideas? Ready to make teaching and learning about SOE programs more fun? While writing some new SOE teaching materials for the Illinois Core Curriculum Revision Project, I developed a new game called "To the Max." I don't know if Illinois teachers have had a chance to try out this new game, but I'd bet my degree (well, at least one of them) it will work — that is, the students will have fun and they will learn more about SOE program management at the same time.

This game is intended for students who have already completed one year/cycle in their SOE program. Most of the game cards will be more effective if the students already have experience in keeping, summarizing, and analyzing SOE program records. Following are the details of the game.

Purpose: To reinforce desirable attitudes and practices in planning, developing, and expanding SOE programs and keeping good records.

Objective: To be the best player to reach the Easy Street space and collect the most money along the way. After all players have reached the Easy Street space the player with the most money wins.

Rules/Play Procedures:

1. From 2-5 players can play on one game board.
2. Players role a die or draw a number to determine starting position. The player with the highest number (1-6) begins play. Play then proceeds to the right.
3. The MAX cards should be shuffled and placed face down near the center of the game board. Players draw one card from this pile when their playing piece lands on a green MAX space. They then follow the directions on the card.
4. Players move their playing pieces around the SOE track by rolling a die and moving a corresponding number of spaces.
5. No more than two players may occupy the same space at a given time. If a third player lands on the same space, then he/she moves ahead three spaces and follows the instructions on that space.
6. Players collect money as they move along the SOE track by following the directions on each space. The first player to reach Easy Street collects $500. Each player begins with $500.

Tips For Using The Game

1. Any item can be used as a playing piece, as long as each item is somewhat different. Some ideas include different coins, California raisin miniatures, Monopoly game pieces, etc.
2. Use play money from Monopoly or some other board game.
3. Make game boards out of heavy poster board or matte board. Make enough boards to allow entire class to play at once.
4. After drawing the SOE track layout on the game board (see illustration), use pictures, models, toys, or illustrations to "spruce up" the board.
5. If the entire class is playing at once on several game boards, then a class champion can be named at the end of play.
6. After play is completed, gather student reactions to the activity, as well as the items printed on the MAX cards.
7. Duplicate a complete set of MAX cards (on colored, heavy paper if possible) for each game board that you make. Cut out and arrange into decks. Ideas for the MAX cards are limited only by your imagination. A few ideas to get you started include:

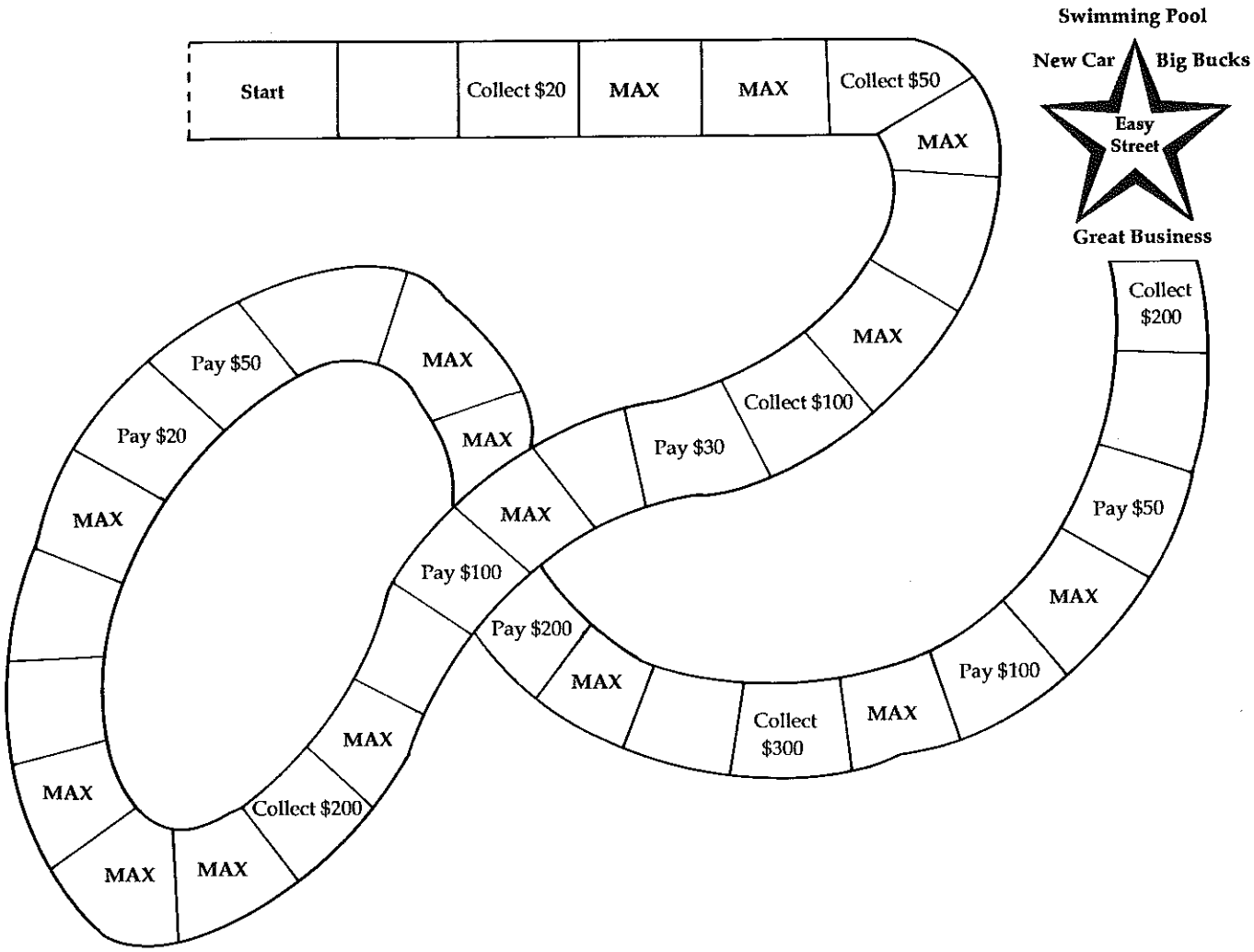
   Turn in record book 2 days late — lose turn
   Had only 2 goldfish as your SOE for 4 years - pay $100
   Failed to develop a written SOE plan — go back 5 spaces
   Did not connect SOE to class and lab activities — pay $50
   Lost record book — go back to start
   Had a bad attitude — lose turn
   Entered all your records for the year last night — pay $100
   Paid your sister to complete your record book for you — lose turn
   Blew all of your SOE earnings on junk food — go back 3 spaces
   Passed up good SOE opportunities — lose turn
   Took pictures of your SOE — move ahead 2 spaces
   Won chapter proficiency award — collect $50
   Completed some observational experiences in agribusiness — collect $50

Passed SOE test — collect $100
Completed an improvement project — move ahead 3 spaces
Discussed SOE with parents — move ahead 3 spaces
Updated record book — collect $50
Developed a long range plan for your SOE — take another turn
Expanded ownership program — take another turn
Completed a personal resource inventory — collect $50

8. Enter the contents of each MAX card into your computer, and print a set of MAX card labels. Then stick each label on a piece of colored poster board to make your deck of MAX cards.
9. Adjust the number and type of MAX cards as needed to ensure variety and clear linkage to key points on SOE program management. Start out with at least 30 MAX cards and make more if needed. The cards can be color coded so that the bonus cards are one color and the penalty cards are another color.
10. Spaces may be added to the board layout to make adjustments in playing time, cash accumulation, competitiveness, student interest, difficulty or other factors. The board layout can also be redesigned to suit your particular interests and objectives.

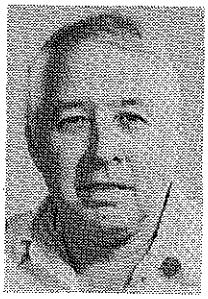
This academic game should be used to complement, not replace, other methods used to teach students to improve their SOE programs. Well designed educational games have been found to be equal to other teaching techniques in terms of overall effectiveness, and perhaps more effective in stimulating interest. Be sure to briefly, but clearly, introduce the game to the class before play begins. Composition of teams should be determined in advance, with heterogeneous ability groupings being most effective. When the game begins, shift the focus of the classroom to the students and away from the teacher. As a concluding step, guide student discussion of the key subject matter points addressed in the game itself. Have fun and give your students a chance to enjoy life on "Easy Street."

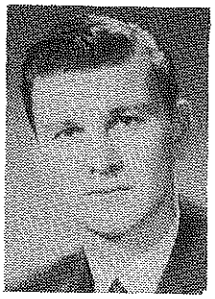
SOE Game - "To the Max"



ARTICLE

Integrating International Mechanics Into A High School Program





By William B. Symons and Joseph G. Cvancara

(Dr. Symons is Assistant Professor, Department of Agricultural Engineering, Washington State University; Dr. Cvancara is Professor, Agricultural Education, Department of Adult and Youth Education, Washington State University.)

The rationale for the integration of international concepts in the secondary agricultural education program is rooted in the changes taking place in high schools, the global economy and in the students themselves.

It is often difficult for students to understand this rationale because in many places of the world, seed is still placed in the ground by hand, one seed at a time, and that much of the world does not have turbo-charged diesels. Over half of the world is fed by animal and human powered agriculture. Scientific underpinnings of agricultural education are very similar around the world while cultural practices are highly dissimilar. For the teacher of agriculture in the region of the United States that is dependent on the exportation of agricultural commodities, an international gap in curriculum exists.

The International Gap

This gap is that many agricultural students have little opportunity to understand the markets where the products of their farm are headed or the cultural or environmental factors the cause the market to exist. Students have been exposed to world geographies and social studies that should give a platform from which to observe and understand the implications of global conditions to existing agricultural markets. Neither national test scores or conversations with students bear this out. How this level of interest in global agriculture could be raised was discussed with Mike Finch, Agricultural Education instructor at Palouse-Garfield High School. His school is located in the town of Palouse in rural eastern Washington State, approximately 15 miles from Washington State University.

The Plan Comes Together

It was decided to incorporate internationalization information into the need that was felt at the University to determine if people with basic metal working skills and some shop tools could manufacture animal drawn tillage tools. Ultimately, can a farm village in Africa repeat the process that the secondary agriculture students go through if limited support is given to them?

To start the process of verification, students under Mr. Finch's supervision constructed with little assistance an animal drawn tool bar from a model of one developed by International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). The implement will be donated to Sudanese seed breeders who are developing drought resistant crops for drought stricken Africa.

The Great Going Forth

Carrying out the project placed the students in a quandry because they have never seen the type of machine that they were asked to build. They were asked to fabricate a machine with only the sketchiest of information. They were soon found asking about the use of the implement and the environment in which it would be working. "Don't know enough about it," they said. A set of engineering drawings were provided from ICRISAT. They thought they were home free. After the students went over the 8 sheets of engineering drawings, there was disenchantment. "We now know less," they said.

Right Plans — Wrong Audience

It's all metric. The drawings were intended to be used by machinists and welders who were at least at the level of competency that would be expected of someone from a community college and who had worked a few years as a machinist. The drawings were meant to be used in a factory where the machines are to be mass produced with the use of milling machines, lathes and other factory tools.

Issues and Problems

Time was marching on with little or no movement from the students. Mr. Finch encouraged some basic problem solving techniques. What does it do? How does it do it? Can the farm implement be built in several units then bolted or welded together? What steel shapes can be used that are available in town that will make the tool bar easy to build in this environment? From there the project took off. The unit has been completed and this year the students are making some changes. With these changes it is called Model B. It will undergo field testing this spring by the students using borrowed ponies.

Benefits to the Agricultural Student

As a result of the project, several benefits have been realized. For the students involved, they have become more aware

of world geography and how marketing of machinery and crops is accomplished. They are aware that what they do while driving a combine in the fall is more productive than a village of 10,000 people harvesting by hand. They are more sensitive to the issues of why we cannot export large machines and put all the villagers out of work. They are aware that a lot of problems, both in the shop and in the world, cannot be solved and that in order to understand a problem, there are a lot of factors that we generally don't have to deal with in our agriculture. For example, a war in Sudan has disrupted food production, and just about everything else in that country. This includes the mail to the researchers who will get the tool bar. They are aware that diligent work pays off in solving a problem and not to back away from something because it appears "foreign." They are aware that students and teachers must do a lot of research from many sources to get the answers. They are aware that they can get a lot of help in working through their problems by getting on the phone and talking to, for example, a person who runs a machine fabricating shop in town, from the Cooperative Extension or from the University's Agricultural Engineering Department.

The students are aware of the importance of communications in the project because they are in the middle of writing the manual and making the drawings to help the ultimate users understand how their machine works. The manual will be written to meet American Society of Agricultural Engineering standards. Participants have become well aware of the necessity to compromise to get the job done. This they pick up easily among their peers, but found more difficult in working with adults.

Benefit to the Community

The community appears to have benefited from this project in that it was the keynote topic at the chapter awards barbecue. Farmers enjoy hearing about this low horsepower farming method that the students have worked on and where it will be used in Africa. Occasionally one will drop into the shop to look at this "crazy machine." The school board has been supportive of the project.

Summary

The world is getting smaller. Agricultural students can plan to have more opportunities to interact with people of other countries and cultures. Agriculture students need to develop a willingness to cooperate and compete internationally. This requires respect for political, social, and cultural differences and understandings of other nations. Students who understand the interdependences and international relationships will be able to function better in the many roles that have an international dimension.

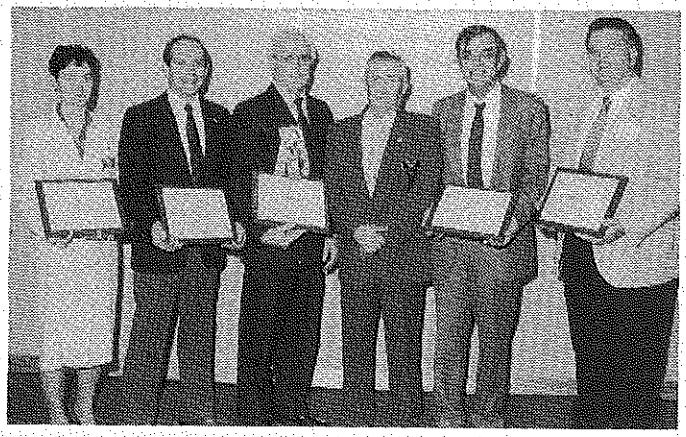
In a small way, the agricultural mechanization project internationalized the local secondary agriculture program and promoted interest and knowledge about global agriculture. It has also demonstrated the importance of communications and helped students understand that as peoples of the world, we all have similar needs. The project also provided an opportunity for students to understand that people everywhere must use their resources to their best advantage. Finally, that we in agriculture must still help our neighbors from time to time, but that our definition of neighbor might include someone on the other side of the world.

Future Themes/Theme Editors

Issue	Theme	Theme Editor	Due Date
August, 1990	Expanding Audience Base	Blannie Bowen Pennsylvania State University	May 1, 1990
September, 1990	Focus on Teaching	Stacy Gartin West Virginia University	June 1, 1990
October, 1990	Urban Agriculture	Margaret Elliber Iowa Dept. of Education Des Moines, IA	July 1, 1990
November, 1990	Changing the FFA	Jeff Moss University of Illinois Urbana, IL	August 1, 1990
December, 1990	Developing Entrepreneurship	Layle Lawrence West Virginia University	Sept. 1, 1990

Stories in Pictures

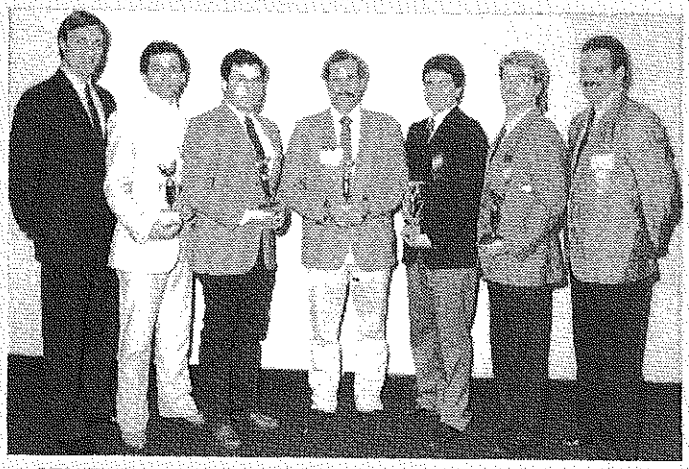
NVATA IDEAS UNLIMITED CONTEST AWARDS — 1989
Left to Right: South Carolina Association, Frank Stover; Indiana Association, Eldon Cutter; Kansas Association, Jerry W. Schmidt; Douglas Spike, NVATA President-Elect and Agriculture/Agriscience Teacher, Bloomfield Hills, MI; Wisconsin Association, Clara Hedrich; Vermont Association, John Bradley; Montana Association, Bill Jimmerson. (Photo courtesy of NVATA.)



NVATA OUTSTANDING SERVICE CITATION — 1989
Left to Right: Sandra Dawson, Prospect, CT, accepted the award for Roger W. Lawrence; Ed Johnson, Charles H. Buzzell, Duane Watkins, NVATA President, Thermopolis, WY; Thomas C. Weaver; Les Collins, Carnation, WA, accepted the award for Clarence Pearson.

NVATA Awards

NVATA OUTSTANDING SERVICE AND COOPERATION AWARD
1989
The 1989 NVATA Outstanding Service and Cooperation Award was presented to Diversified Marketing Associates, Alturas, Florida. Diversified Marketing Associates (DMA) and the NVATA work closely together in coordinating programs for vocational agriculture instructors in secondary schools. DMA is the sponsor of the NVATA split-year diary provided to agricultural educators upon payment of annual membership dues. They are also Gold Emblem contributors to the National FFA Foundation. Duane Watkins, NVATA President, Thermopolis, Wyoming, presented the prestigious award to (L to R) Rick French, DMA Vice President, Diane Schuh, David Schuh, DMA President, during the annual Awards Breakfast at the national convention in Orlando. (Photo courtesy of NVATA.)



NVATA AGRICULTURE TEACHER RECOGNITION AWARDS
1989
Left to Right: Noel Ledermann, Pfizer Agricultural Division, New York, NY, presented the awards: Poultry Production, Roger Dvergsten; Dairy Production, D.J. Sheppard; Diversified Livestock Production, Earl Dotson, Carmeron, MO, accepted the award for Doug Carpenter; Beef Production, Cal Wiechman; Swine Production, Stephen Kehoe; Andy Webb, Pfizer Agricultural Division, New York, NY. (Photo courtesy of NVATA.)